



**15th International Conference on Business Management
(ICBM 2018)**

Sustainability through Going Green: Opportunities and Challenges for Business

06th December, 2018

Colombo, Sri Lanka



Faculty of Management Studies and Commerce
University of Sri Jayewardenepura
Sri Lanka.

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Edited by the ICBM 2018 Editorial Board

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Preface

The Faculty of Management Studies and Commerce (FMSC) of the University of Sri Jayewardenepura, widely known as the 'Centre of Excellence for Management Education in Sri Lanka' is proud to present the 15th International Conference on Business Management – ICBM 2018 which is a landmark event in the calendar of the faculty. This conference, which is being held for the 15th time, is a continuation of a series of research sessions successfully conducted by FMSC on an annual basis.

The theme for the conference this year is 'Sustainability through Going Green: Opportunities and challenges for Business,' which is a timely topic of discussion, both locally and globally, and will undoubtedly offer an invaluable insight both in theory and practice with the input of several leading academics and business personalities. As such, ICBM 2018 aims at promoting and publishing current and relevant ideas on sustainability, governance and ethics which are vital, especially for the corporate sector and public sector organizations, which play an important role in improving the quality of life of all stakeholders. This conference will also serve as a common stage where scholars, professionals and practitioners can share their research findings, experiences and ideas which in turn will be a stimulating experience for all. Additionally, the conference aims at disseminating knowledge and building relationships between academics and practitioners. The key events of ICBM 2018 are the Academic Research Session, Doctoral Consortium and the Business Forum which will undoubtedly boost the intention of this conference, which is to ultimately create a platform for researchers, educators, learners, academics, practitioners and policy makers from all over the world to share their ideas for the benefit of a global community. Many eminent local and foreign academics and business personalities from the corporate world will enrich the Business Forum scheduled to be held under the theme 'Sri Lankan Economy: The way forward-achieving sustainability, with special emphasis on Chinese - Indian and domestic business perspectives'.

ICBM 2018, has drawn a large response and brought in high quality empirical, methodological and conceptual papers from both local and international academics, practitioners and policy makers, was organized under 06 tracks. Of these papers, what has been published is the cream of the papers received. A transparent reviewing process was conducted where the papers underwent a double-blinded review procedure conducted by an equally eminent panel of local and international reviewers who are subject specialists in their respective areas. It should be noted that neither the ICBM 2018 committee nor the Faculty of Management Studies and Commerce of the University of Sri Jayewardenepura will assume responsibility for any errors or omissions in the research papers, which rest solely with the authors.

This conference would not have been possible if not for the invaluable contribution made by various persons and organizations and we express our heartfelt thanks to them all. We would like

to extend our sincere gratitude to the Chief Guest of ICBM 2018 Dr. Indrajit Coomaraswamy, Governor Central Bank of Sri Lanka, for kindly accepting our invitation. We are extremely grateful to Associate Professor Colin Higgins, Deakin Business School, Melbourne, Australia and Professor Mark Christensen, ESSEC Business School, Singapore Campus, who graciously accepted our invitation to deliver the keynote addresses. We would also like to acknowledge with gratitude the Industry Forum panelists and the Doctoral Consortium panelists who sacrificed their valuable time to share with us their experiences and invaluable input. Our special thanks go out to Dr. Luckmika Perera - Deakin University, Professor Alexander Newman - Deakin University, Professor Giuseppe Grossi - Nord University, Associate Professor Chamara Kuruppu - University of South-Eastern Norway and Professor A.K.M. Ahasanul Haque - International Islamic University Malaysia, for gracing the occasion. Our sincere thanks to our Guest of Honour, Prof. Sampath Amaratunge, Vice Chancellor of the University of Sri Jayewardenepura for his unstinted support and encouragement. Our special thanks also go out to Dr. U. Anura Kumara, Dean of the Faculty of Management Studies and Commerce for his continuous and abundant support, dedication, guidance and cooperation in organizing a research conference of this magnitude. Our sincere thanks go out to our eminent panel of reviewers and Doctoral Consortium discussants for the priceless service they rendered. We would like to gratefully acknowledge the support extended to us and contributions made by the students, academics and non-academics of the University of Sri Jayewardenepura to make this conference a success. Our grateful thanks to our numerous sponsors, and media partners for their generous contributions, without which this conference would not have been a reality. A very special 'Thank you' to the staff of the Information Resource Technology Centre (ITRC) and the Business Communication Unit of the Faculty of Management Studies and Commerce, University of Sri Jayewardenepura for their commitment, cooperation, assistance and services rendered at all times.

Last but not least a big 'Thank you' to all our presenters and participants for their active participation and valuable contributions in enriching the conference and making ICBM 2018 a success.

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Message from the Vice Chancellor



It is with great pleasure that I write this congratulatory message to the 15th International Conference on Business Management (ICBM 2018) organized by the Faculty of Management Studies and Commerce (FMSC) of the University of Sri Jayewardenepura.

The University is committed to the pursuit and transmission of knowledge through teaching, scholarship and research, and active service to the community in an environment which values creativity, freedom of intellectual thought and expression, equal opportunity, fairness and professional growth. The University's endeavor is to contribute to national development by providing a balanced education which blends the finest in theory and practice and by forging interactions between the University and the wider polity. In this scenario, I note the ICBM of FMSC as one of the greatest contributory attempts towards this honorable achievement. I have no doubt that ICBM 2018 will necessarily build a forum for the academics, researchers, practitioners and policy makers in management and allied disciplines for networking and share knowledge and expertise on the locally and globally pertinent theme, 'Sustainability through Going Green: Opportunities and Challenges for Business,' toward the realizing of aspirations of the wider society.

We are proud that ICBM has become a leading business conference in the Asian region. It offers the authors the best opportunities for publishing their work in the Journal of Contemporary Issues in Business and Government published by Swinburne University of Technology, Australia, which collaborates with this prestigious conference. Also, selected papers will be published in a special issue of Vidyodaya Journal of Management. The conference maintains the best standards with a superior panel of reviewers and a procedure.

I appreciate the tremendous amount of dedication and efforts made by the Dean of the Faculty, Conference Co- Chairs and the members of the Organizing Committee in making this event a reality. I also congratulate the local and foreign researchers and the business community for sharing their expertise.

Let us join hands to create a better tomorrow for us all.

Thank you

Senior Professor Sampath Amaratunge

Vice Chancellor

University of Sri Jayewardenepura

Message from the Dean of the Faculty



As the Center of Excellence in Management Education in Sri Lanka, the Faculty of Management Studies and Commerce (FMSC), is delighted to host the International Conference on Business Management (ICBM) for the 15th consecutive year. FMSC is committed to high quality teaching and learning in addition to impact research and development. It focuses on promoting an intellectually stimulating - multidisciplinary environment for its stakeholders through effective industry and community engagement as well as international orientation.

ICBM is the apex event in the academic calendar of the faculty, and the theme selected after careful consideration for this year is, 'Sustainability through Going Green: Opportunities and Challenges for Business'. This conference aims at promoting and publishing research thoughts to disseminate knowledge regarding this particular theme to a wider community. It also aims at enhancing links and strengthening the network between academics and practitioners.

I firmly believe that this enormous venture, ICBM 2018 will ensure a significant impact among the community and that it will indeed create a firm platform for the academia and the industry to meet and share perspectives. With this, I convey my very best wishes for the conference, the authors, paper presenters and other contributors while appreciating and admiring the commitment of the Organizing Committee for ICBM 2018.

Dr. U. Anura Kumara

Dean of the Faculty of Management Studies and Commerce
University of Sri Jayewardepura

Message from the Co-Chairs



Dr Sudath M. Amarasena
Co- Chair -15th ICBM 2018



Dr Dayananda Ambalangodage
Co- Chair -15th ICBM 2018



Dr (Ms) P A N S Anuradha
Co- Chair -15th ICBM 2018

It is with great pleasure we welcome authors, invitees and participants to the 15th International Conference on Business Management (ICBM 2018) which is being held on 6th December 2018 at the Galadari Hotel, Colombo, Sri Lanka, organized by the Faculty of Management Studies and Commerce, University of Sri Jayewardenepura.

The theme of the 15th ICBM is ‘Sustainability through Going Green: Opportunities and Challenges for Business’, which has been coined after considering the numerous viewpoints of the contemporary dynamic business world. This conference has three main parts viz. Doctoral Consortium, Research Conference and the Business Forum. We hope that this theme will provide an invaluable input to further enhance and broaden the knowledge of researchers and practitioners who would participate at the conference. ICBM 2018 aims to create a platform to publish and share the knowledge on Sustainability through Going Green: Opportunities and Challenges for Business’ which are vital and vibrant especially for corporate and public-sector organizations, which perform an important role in improving the quality of life of all stakeholders. Therefore, we are confident that you will be greatly benefited by the research presentations and the Business Forum.

Finally, on behalf of the Organizing Committee, we wish the conference participants all the very best and we hope that you will be greatly enriched and edified by the line-up of events that have been organized. In closing we are also highly grateful to all the presenters, participants, sponsors including the main sponsors, session chairs and other contributors for their immense support and good wishes.

Co-Chairs – 15th ICBM

Faculty of Management Studies and Commerce
University of Sri Jayewardenepura

Conference Tracks

Accounting, Finance & Banking

Economics, Public Policy, Law & Education

Entrepreneurship, Innovation & Managing Small Enterprises

Leadership, Organizational Behavior & Human Resources Management

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Technology & Operations and Service Management

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Keynote:
**Sustainability through Going Green:
Opportunities and Challenges for Business
Organisations**



Sustainability through Going Green: Opportunities and Challenges for Business Organisations

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Introduction

In this paper, I discuss the opportunities that sustainability presents to business organisations. I'll first provide an historical overview that identifies the changing social actors that have contributed to how sustainability has transformed from a problematic compliance issue into a strategic imperative for business organisations. I'll then discuss the key components of the contemporary business case – or the factors that are driving how business organisations are realizing strategic outcomes from their sustainability commitments. I'll then shift focus to outline some challenges that remain.

The challenges are important - not least of all because sustainability has moved from being an 'issue' to be managed 'locally' to a global challenge that requires co-ordinated inter-government and inter-sector co-operation. I'll round out my comments with an overview of the different trajectory underway in developing nations – and I'd like to make the point that the more economically developed countries don't have all the answers. The innovation and unique approaches being taken in all nations offer hope and inspiration for fulfilling the vision of sustainable development articulated a little over 30 years ago by Gro Harlem Brundtland. That vision is that we need to find a way to meet the needs of current generations without compromising the ability of future generations to do so also.

I hope that my comments – contextualized in terms of that vision – will set the scene for our discussions over the course of today as we all come together – in this place – to share our views, to challenge our assumptions, and to learn from each other.

¹ I gratefully acknowledge the research assistance of Greg McCallum, Dept of Management and Marketing, University of Melbourne

A brief historical snapshot

What we understand about sustainability today – including the challenges and opportunities it presents – has not always been this way. While a full and comprehensive historical overview – that captures all dynamics in all places – is not possible (and certainly beyond the points I'd like to make) – I would like to highlight seven milestones that point to the way multiple actors have interacted in dynamic fields to shape the modern sustainability discourse.

My point in highlighting these milestones is to illustrate that solutions are complex. It is very tempting to say we need better regulation. It is perhaps appealing to rely on articulating a business case – and believing that business organisations will follow. We might suggest that social movements needs to be created – or step up – or engage constructively. But, what I'll attempt to outline is that change does not occur through simple or isolated means. Regulatory instruments are blunt and fought. Social movements cannot always shift the pendulum of public debate – and there are limits to the leadership position likely to be taken by business organizations. More often than not we actually see business as the laggard – and a responder to shifts rather than being the agent of change.

Figure 1 below illustrates the basic historical transition that has occurred in how sustainability has been understood and considered over the past 40-50 years. I'll outline some of the triggers – or milestones – that have perhaps been somewhat serendipitous – but which have contributed to the changing shape of the sustainability journey.

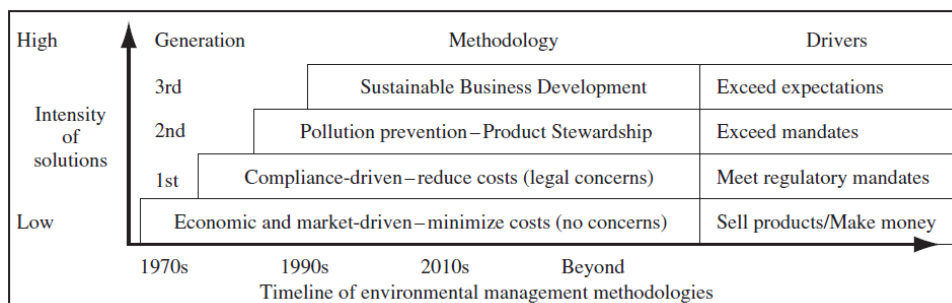


Figure 1. *Timeline of Environmental Management Methodologies and Drivers of Sustainable Development (Rainey, 2006, p. 23)*

Our understanding of sustainability today can be traced to what I'll outline as the first key milestone: the 1962 publication of Rachel Carson's 'Silent Spring'. This book put before the American public for the first time evidence that pesticide use was contributing to environmental degradation. Carson offered, additionally, insight in to the duplicity of the chemical companies and public officials – and revealed the extent of disinformation and misleading claims that were being made about the impact of chemical products on the environment.

As with most movements, however, the ultimate effect of Silent Spring wasn't isolated to this single publication. Its effects are owed as much to other latent factors occurring at about the same time. Specifically, while most economies were enjoying significant economic growth post-war, there was also increasing recognition of the costs associated with this development. Popular unrest was emerging about the social and environmental effects of industrialization, economic organization, and government policy.

Indeed, the second key milestone occurred a decade later – the 1972 UN Conference on the Human Environment. This meeting, held in Stockholm, was several years in the making – and represented the first serious look at the interconnections between economic, social, and environmental development. Significantly, it marked a turning point from viewing the environment as a 'local issue' to a significant global threat. Some regulatory developments also occurred during this time. The US Environmental Protection Agency was established in 1970, congress passed the 1970 Clean Air Act, and in 1972 and 1973 the Clean Water Act and the Endangered Species Act, respectively.

The regulatory developments were met by most US corporations with either resistance or compliance – and stimulated much effort to minimize their encroachment (rather than the minimization of environmental impact). The business case for sustainability was non-existent. Business did not show a leadership position at this time. Firms invested considerable time and money on legal advice and policy statements – rather than pollution prevention, waste minimization or new operational efficiencies. Despite regulatory intent – and the emerging global conversation about the need for action – firms rarely considered going beyond compliance.

Standing back and observing this period with the benefit of hindsight – the 1970s and through in to the 1980s represented a political and ideological struggle over how best to conceive of the environment and the best approaches to deliver outcomes. New political and social movements – including green politics – emerged during this time, but came up against strident and well-resourced counter pressures to roll back Government intervention, delegitimize calls for corporate social responsibility, and to shift public discourse toward economic imperatives.

Milton Friedman's 1970 New York Times article was published during this time – and exhorted that the only social responsibility of business was to maximize profits. This is still an influential view today. Later in the decade, Friedman's economic assertions found favor in the administration of Margaret Thatcher in the UK from 1979 and of Ronald Regan in the US from 1981. These three developments represented the third significant milestone – an intense popular and political counter to a growing movement to rethink the global economic order.

As the 1980s evolved, despite issues such as population growth, increasing price and volatility of oil, market liberalization, privatization, increased outsourcing, growing global competition and global energy security risks, business – in the guise of the Global Climate Coalition – emerged to campaign heavily for small government, voluntarism and market forces as the most appropriate way to address all development challenges. The GCC included over 230,000 businesses across aluminum, paper, transportation, power generation, petroleum, chemical and small business industries (Beder, 2000; Franz, 1998). (Levy & Rothenberg, 1999). Even in the context of major environmental disasters, the corporate mindset remained firmly on minimizing regulatory encroachment and cost – rather than minimizing impacts and accepting responsibility. Exxon Shipping Company, for example, appealed fines through several US courts to have damages to be paid as a result of the 1989 oil spill reduced from \$US5bn to US\$500m.

The fourth milestone comes by way of new disclosure initiatives such as US Emergency Planning and Community Right-to-Know Act (1986). This legislation forced companies to disclose information about their operations and waste streams – and stimulated some shift from resistance, to reduction and stewardship. As stakeholders' rights to information expanded, business objectives pertaining to social and environmental consequences became

two-dimensional: dealing with laws and regulations, and managing customer and stakeholder expectations. While awareness was changing – the corporate mindset was still slow to change from viewing environmental mandates as business threats.

By decades end, important shifts in global environmental discourse were underway. This was both push and pull in nature. Push came by way of continuing publicized environmental disasters – such as nuclear station accidents, chemical leaks, oil spills, oil supply crises, and environmental destruction from military war. Pull factors included the World Conservation Strategy, the Independent Commission on International Development, the Global 2000 report, The Global Strategy for Health by all by 2000, the United Nation's Convention on the Law of the Sea, the Canadian Chemical Producers Responsible Care initiative, the Montreal Protocol on Substances that Deplete the Ozone Layer and the world's first meeting on Climate Change.

The fifth major milestone was the 1987 publication of 'Our Common Future' or the 'Brundtland Report'. This report firmly place the environment as an economic development issue and set out a blueprint for change. It posed significant questions about economic development. It introduced a moral consideration. It challenged the right of developed countries to consume 80% of the world's resources. The 1987 Report of the World Commission on Environment and Development asked the hard questions.

By the advent of the 1990s, the sixth key milestone emerged: green consumer pressure and green and ethical investment screening of corporations (Elkington, 1994). The 1990s witnessed the beginning of a shift to *prevention* and *strategic action* from compliance and threat (Henriques & Sadorsky, 2007). The 1990s also marks discussions in the EU to implement climate policies in order to stabilize emissions (Kolk & Levy, 2001). Business attention shifted to proactive investments in systems and processes – not only to minimize impacts but also to understand them. Corporate culture started to shift due to the introduction of Environmental Management Systems, industry-level codes of environmental management, and international certification. Rather than industry bodies banding together to fight change – some developed EMS specifications. The European Commission developed the Eco-Management and Audit Scheme (EMAS), and the International Organization for Standardization (ISO) developed the ISO 14000 family of environmental management

standards to provide a framework and guidance for EMSs, environmental auditing, environmental labeling, and environmental reporting.

One further shift still needed to occur, however. A need to close the compliance and corporate strategy gap. Most corporates hired environmental specialists to help with ISO14001 EMS compliance in isolation from continuing business operations and activities. It wasn't perhaps until the Global Reporting Initiative (GRI) developed (1997) – the seventh milestone – that a new visibility of environmental issues developed. This initiative provided a context for long-term strategies concerning corporate responsibility and decision making (Young, 2014). GRI first published its "Sustainability Reporting Guidelines" in 2000 with the main aim of incorporating and monitoring environmental responsibility and measuring corporate performance. It was in this period we witnessed the first movers experimenting with environmental strategy (Elkington, 1994). BP and Shell publicly acknowledged the climate change problem and were supportive of the Kyoto Protocol in 1997. They withdrew from the GCC in 1996 and 1998 respectively and adopted more proactive strategies that diversified activities, including investments in renewable energies (Galharrat & Wang, 2011; Kolk & Levy, 2001). Dow Chemical broke new ground in 1992 when Frank Popoff, the firm's chairman, called on US business to adopt full cost accounting (Elkington, 1994). This idea represented that the price of a product would reflect its full environmental cost.

Today, corporates are familiar with ISO, EMSs and the GRI and actually seek public recognition of their performance through sustainability reporting. The rise of communication and training programs, internal environmental audits, product life-cycle analysis, green markets and mature ethical screening of corporations are now common place. But it would be a mistake to understand these developments in isolation of the political, philosophical and ideological struggle that sits behind them. The trajectory hasn't been straight forward. Encouraging shifts in economic, social and environmental consciousness is not simple. It is foolhardy to rely simply on a business-case. It is not possible to expect regulation to shift corporate behavior. We see change in what DiMaggio & Powell (1991) describe as 'fields' in which multiple actors jockey to shape public discourse and to cement norms of appropriateness and acceptability.

The business-case

Amongst most large businesses today, sustainability is perceived to offer significant strategic benefits, attributable to a number of internal and external factors. Figure two provides a 2014 snapshot of the drivers for green procurement.

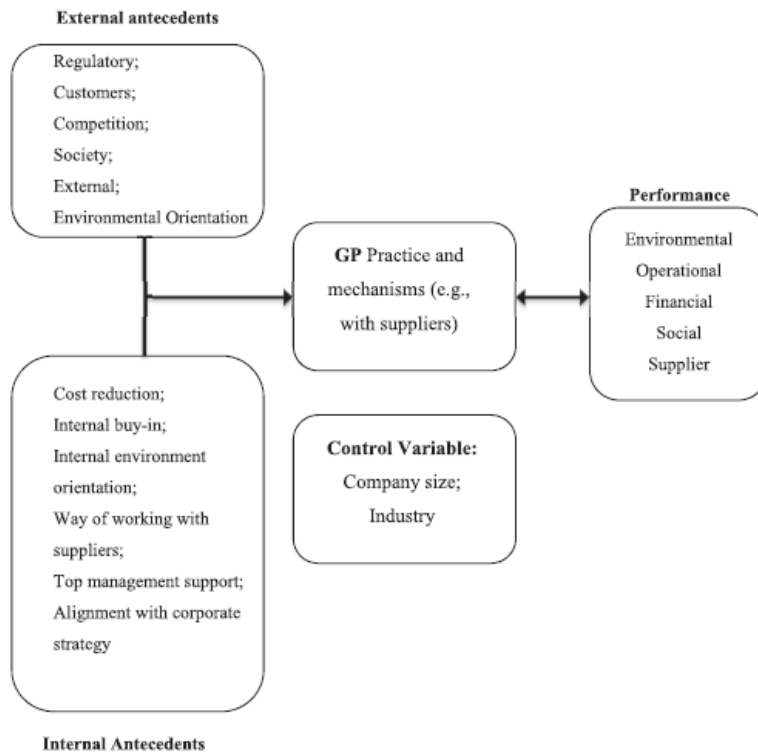


Figure 2. *Antecedents of Green Procurement (Appolloni, Sun, Jia, & Li, 2014, p. 129).*

A macro-focused review of 86 academic articles published between 1996-2013 from production, operations, and supply chain management; sustainability, environment and quality; general management and marketing reflect similar factors. In this review, the drivers were categorized in to one internal (organizational) and three external drivers (regulatory, customers, competition, and society) (Appolloni et al., 2014). Of these, Linnenluecke and Griffiths (2010) suggest the most critical drivers are those attributable to risk and reputation management, those that can deliver competitive advantage, and those that require compliance.

Risk

Most organisations are concerned with their legitimacy – both in terms of conforming to social norms and expectations as well as to specific stakeholder expectations. Firms are concerned to maintain a ‘social licence to operate’ (Henderson, 2015). This can be complex

– and represents a delicate mix of economic, social and market drivers. Figure three offers an example of this process at play (Oliver, 1997).

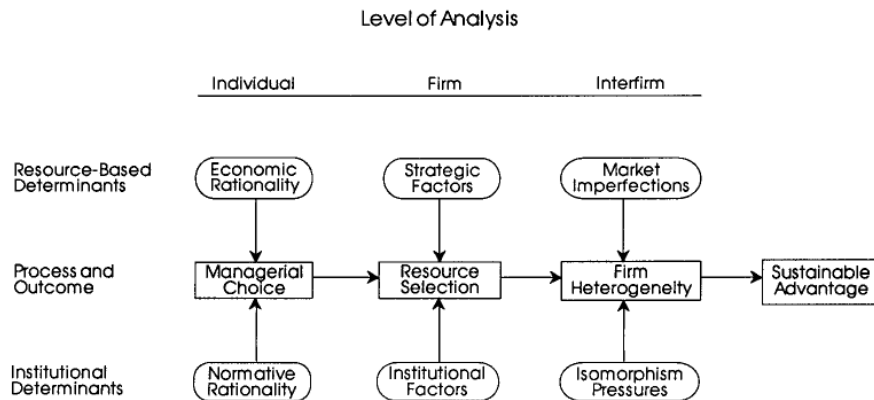


Figure 3. *Determinants of Sustainable Competitive Advantage (Oliver, 1997, p. 699)*

Specific practices enable firms to manage risk and reputation. Corporate reporting has come to be seen as an important driver of such legitimacy. Reporting to stakeholders, community and regulatory bodies provide insight in to how an organization is managing negative market externalities, actions of responsibility, and the value created to broader society. This type of accountability has driven performance improvements. An exemplary contemporary case is Coca-Cola’s commitment to become water-neutral by 2020, promising to replenish the amount of water equivalent to its sales volume after local villagers of Kaladera, Rajasthan, India expressed concern about the company’s use of scarce water supplies, further communicated by activists and global criticism in 2007 (Gentleman, 2008).

Globally, the GRI is consulted the most frequently as the main international standard – capturing economic, governance, social and environmental performance (GRI, 2010). The guidelines support the CSR agenda by providing governing principles of sustainable development and also the connection to business models for social and environmental performance.

More recently, the International Integrated Reporting Committee (IIRC) has formed to offer a new framework for integrating economic, social and environmental drivers of value-creation: Integrated Reporting. Similarly, International Organization for Standardization (ISO 26000) framework also promotes integrated CSR reporting. The goals of these

frameworks are internal and external interrelation of all stakeholders of business to enhance social responsibility. ISO 14001 requires the implementation of an EMS according with its standards; determining environmental aspects and impacts of products, activities and services; planning environmental objectives and measurable targets; implementation and operation of programs to meet objectives and targets; checking and corrective action; and management review.

Operational Efficiencies

Sustainability has also been found to offer cost savings. Sometimes referred to as the 'low hanging fruit', waste minimization and energy efficiency offer a win-win in terms of lowering impacts and reducing costs. At KKR, for example, a systematic process of energy and water reduction across their portfolio companies yielded returns of at least US\$150 Million per year from 1999 to 2014. Between 1990 to 2017 IBM reduced electricity consumption by 7.4 Billion kWh, avoided 4.4 Million metric tons of carbon dioxide emissions and saved US\$616 Million through its annual energy conservation actions (Henderson, 2015; IBM, 2018). In efforts to achieve a zero-waste supply chain through the deployment of waste reduction, Walmart diverted 82% of their materials from landfill and diverted an average of 71% in their international markets from business implementation to 2015 (Walmart, 2017).

Research from McKinsey & Company estimated that based on market prices in 2011, 70% of global resource productivity opportunities would have an internal rate of return above 10% (Dobbs, Oppenheim, & Thompson, 2012). By 2030, the annual market value of resources the globe could save would be US\$2.9 Trillion (2011 prices). Additionally, the estimates suggest nearly half of all available opportunities as at 2011 for reducing emissions of greenhouse gases are NPV positive or economically viable (Figure 4).

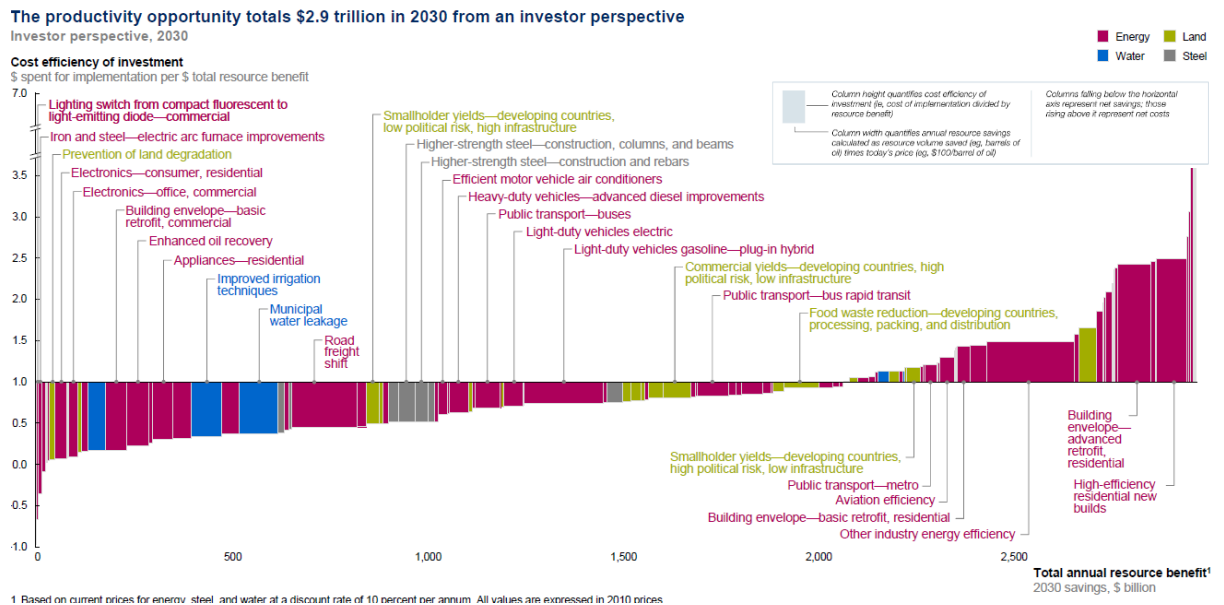


Figure 4. *Estimated Resource Productivity Cost Curve of Economic Activities (MGI, 2011, p. 13)*

Market Development

A key challenge change in the 1990s was the conversion of the ‘critical stakeholder’ into a new type of ‘green’ customer (Elkington, 1994) in order to open up market opportunities. Danish health care and enzymes company Novo Nordisk was a pioneer. Opening itself up to external challenges by environmentalists, regulators and others led to new commitments and outcomes, and also new products and services. Their commitment to powering all its global productions with 100% renewable energy by 2020 reduced emissions by nearly 60% between 2004 to 2017 (Nordisk, 2018) and their transparency helped create a new environment ripe for blue ocean strategies into unfamiliar markets.

Others developed new marketing strategies focused on fulfilling future environmental needs (Jones, Hill, & Comfort, 2008) – transforming sustainability in to an approach to maintain and earn consumer loyalty. Innovative early movers either successfully utilised regulations and requirements to command price premiums for green products and open new market segments or spotted these market developments earlier, providing a first-mover advantage. Examples include Patagonia that created strategic presence and communication that substantially assisted the organisation’s market positioning. Most will be familiar with Toyota’s first-mover Prius vehicle, which sold more than 230,000 cars in 2015 amounting to roughly US\$4.5 Billion of revenue. In 2012, Triodos Bank of the Netherlands had EUR€8

Billion of assets under management, much of it provided by retail investors committed to the Bank’s core missions given of lending to organisations deemed to be making a positive impact for the planet, people or culture (Triodos, 2018).

Research undertaken by McKinsey illustrate that significant corporate attention is often applied across all three strategic domains – in an increasingly integrated way: reducing waste from operations leads to new ways to consider and manage the product and service portfolio to capture trends in sustainability, and creates opportunities to leverage sustainability of existing products to reach new customers or markets. Their research echoes much of the contemporary business case that offers additional benefits from sustainability considerations: improving employee retention and/or motivation and achieving higher prices or greater market share from sustainable products (2011). The responses from McKinsey research is captured below in Figure 5.

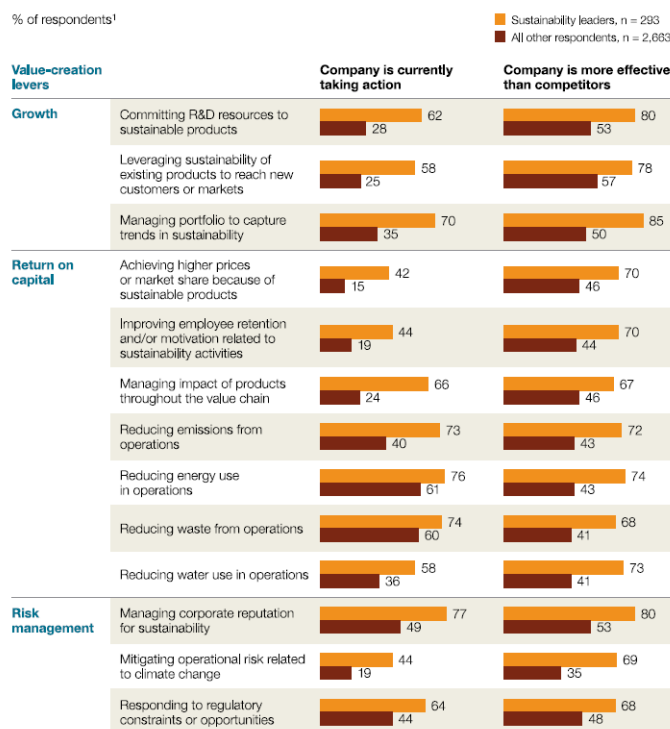


Figure 5. Respondents Leveraging Sustainable Business Activities for Value-Creation (Bonini & Gorner, 2011)

Does the business case stack up?

There is now an expanse of literature examining the connections between EMS adoption, TQM improvement and cost efficiency improvements (Pullman, Maloni, & Carter, 2009). The research on economic profit is less straight forward. A comprehensive meta-analysis of

31 journal articles published 2000 – 2011 with 77 independent effect sizes, accounting for a total sample size of 15,160, revealed a significant positive association between environmentally sustainable practices and market-based and operational-based performance (Golicic & Smith, 2013).

The win-win situation of sustainability adoption and corporate financial performance may be preventing a more honest conversation about the trade-offs and it could thus have far-reaching implications for understanding what corporate sustainability is (Margolis & Walsh, 2003; Orlitzky, Schmidt, & Rynes, 2003; Pogutz, Micale, & Winn, 2011). The win-win paradigm may exist under certain conditions but the underlying assumption it is built on that corporate contributions to sustainable development are achieved only at the intersection of the three principles of environmental integrity, social equity and economic prosperity may be rather simplistic (Bansal, 2005).

Challenges to Sustainability

The business case is frequently challenged as being partial – what if sustainability doesn't pay? It is important to recognize that there is still a long way to go. Notwithstanding the insights above – much about sustainability is still contested and subject to political and ideological challenge. Take the issue of climate change – and if you've been following political trends in Australia over the last decade you will know that a national response to climate change has ended the political careers of four Prime Ministers – and despite a decade of this instability still shows no sign of being resolved.

Internal obstacles to sustainability also abound, and include: poor organizational structure, perceived and actual costs, and lack of training and knowledge (Dyllick, 2015). A poorly-governed management system which is not committed to the EMS programs and ISO standards and regulations often leads to poor commitment, can cause demotivated and cynical staff, and reduced efficiency and performance (or at the very least lost opportunities). Some still perceive that the costs outweigh the benefits, and moral or business case arguments lack legitimacy, and regulations ought to be fought (Appolloni et al., 2014). Past studies have revealed that integrating sustainability into the production and supply chain is extraordinarily expensive for small and medium-sized companies (Dyllick, 2015).

Of particular concern for us today – and our challenge as academics and in industry – relates to a lack of sufficient knowledge and training among employees. This is an important challenge – not only does a lack of training and knowledge hinder innovation and an ability to realise strategic outcomes, it also at a very practical level, denies an organization well-equipped green specialists. For a sustainable production and supply chain it is imperative to have adequate and qualified green specialists that will assist the organization in enhancing its initiatives (Dyllick, 2015).

2011 research from McKinsey and Company demonstrate leadership, cultural, strategy involvement, operational and motivational barriers prevent companies from adopting more sustainable practices (Figure 6). This includes poor alignment of KPIs, low accountability, lack of structure and accountability amalgamation, insufficient data, leadership tone and isolation of the sustainability team from the core of the organisation.

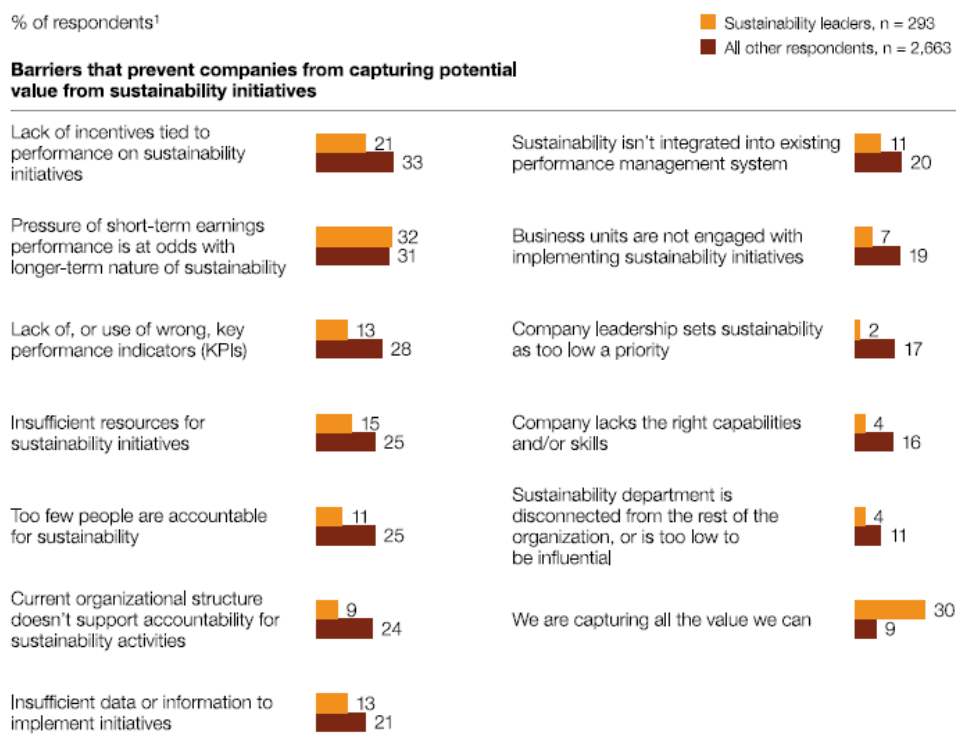


Figure 6. Barriers that prevent companies from capturing potential value from sustainability initiatives (Bonini & Gerner, 2011).

External barriers to sustainability include the touched-on above political instability – and how that discourages companies from investing in sustainability projects. There is also much challenge over the legitimacy and effectiveness of government regulation. As illustrated

above, regulation is not always effective as the best way to drive or incentivize sustainability behavior. Dyllick (2015), explains that environmental regulations may interfere with innovation and creativity by demanding specific techniques to be applied. Moreover, some government regulations create barriers when they do not encourage a sustainable environment for green practices (Dyllick, 2015).

Market benefits can be hindered by a consumer's lack of awareness of sustainable green practices.

Thiell, Zuluaga, Montanez and Hoof (2011) offer the following summary of political and legal systems, social factors, capital market, labour market, infrastructure & resource and logistics systems that can hinder or slow market implementation of environmental. See Table 1.

Dimension	Characteristics	Likely Impact on the Implementation of Green Logistics Systems
Political & Legal System	<ul style="list-style-type: none"> • Government's lack of maturity; planning horizon often limited by legislative period • Inefficient controlling systems • Low regulation • Lobbyism and Corruption 	<ul style="list-style-type: none"> • Incentives to introduce green logistics practices are low • Lack of environmental legislation as driver for green logistics • Lack of long-term sustainability plans
Social System	<ul style="list-style-type: none"> • Poverty and inequality • State of underdevelopment of rural areas • Low investment into education and health • High power distance culture • Lack of collaboration 	<ul style="list-style-type: none"> • Lack of environmental awareness as driver for green logistics • Consumer behavior in many customer segments focused on low product prices; limited options for companies to shift investment cost on consumer • Top management avoid participative decision making • Focus on dedicated instead of shared resources
Capital Markets	<ul style="list-style-type: none"> • High inflation rates • High interest rates 	<ul style="list-style-type: none"> • No tendency towards investment • Tendency towards materials, sub-product, and product inventories
Labor Markets	<ul style="list-style-type: none"> • Low labor costs • High costs of training 	<ul style="list-style-type: none"> • Limited tendency to increase labor productivity by implementing technologies • Limited training within companies
Infrastructure & Resources	<ul style="list-style-type: none"> • High cost of technology • High maintenance costs • Low public and private investments in public infrastructure (e.g. technology and transport systems) 	<ul style="list-style-type: none"> • Limited funds for implementation of technologies • Limited preventive maintenance • Underdeveloped transport systems (focus on trucks) and information systems
Logistics System	<ul style="list-style-type: none"> • Low logistics performance indexes (e.g. qualification gaps, tracking and tracing) • High cost of transportation and warehousing • Less use of third party logistics service providers 	<ul style="list-style-type: none"> • Lack of modern and integrative logistics concepts • Lack of standardization • Short-term cost-minimization dominating

Table 1. *Emerging Market Characteristics and their likely impact on the Implementation of Green Logistics Systems (Theill, Zuluaga, Montanez, & Hoof, 2011, p. 345).*

Examples of Market-Leading Sustainability in Developing Countries

Most insight we have about the opportunities present from sustainability – and the innovation and activities undertake – come from the more developed economies. It is important to recognize that these economies don't have all the answers – and the particular mix of regulatory, institutional and business drivers can differ. We have much to learn from developing countries.

These examples offer considerable hope, open up new opportunities for addressing challenges across the board, and also provide learnings from contexts in which a different trajectory has unfolded. I hope this will stimulate our discussions today.

The Zhangzidao Fishery Group of Dalian, China created a balanced ecosystem in which several species of sea life are cultivated together which reduces the total amount of fish food needed, avoids depleting sea beds and has lowered costs and increased yields dramatically (Haanaes, Michael, Jurgens, & Rangan, 2013). Referred to as integrated multitrophic aquaculture (IMTA), this approach focuses on efficiency of the system as a whole and not decreasing costs in silos. Some species provide food for the others, so fewer have to be fed from external sources. In this way Zhangzidao reduces waste by converting fish by-products into harvestable crops. With savings from low-tech conservation efforts, the company has funded investments in cutting-edge technology for artificial reefs that foster marine life, for seaweed propagation, and for seafloor algae farms. By focusing on increasing profitability per unit of cultivation, rather than species cultivated, Zhangzidao saw sustained compound annual growth of 40% from 2010 to 2015 in an industry where the average is 13%, as well as EBITDA margins of 31%.

Many large western organisations often try to mitigate environmental damage from their operations through costly retrofits or by underwriting the development of breakthrough technologies but companies have yielded benefits from starting small. *Florida Ice & Farm*, a beverage bottler in San Jose, Costa Rica met their goal of becoming water-neutral in only four years, by simply attending to water leaks quickly. This led to revenues of US\$571 Million in 2010, a compound annual growth rate of 25% from 2006 to 2010 and EBITDA margins of 30% in the same period. Through similar attention to detail, Manila Water Company of the Philippines focused on water lost to leaks or illegal taps of its pipes, amounting to the company recovering an amount of water from 1997 to 2010 equal to the supply of a medium-sized dam which would have cost US\$750 Million to build.

Shree Cement, a producer of cement and electricity in Bawar, India has reaped cost savings from low risk, high return efforts to conserve electricity and improve production efficiency through in-house engineering and investment in innovative business models from the cost savings it benefited from. In 1985, its diesel-generating plant was required to protect itself

from common electricity supply disruptions. Through a focus on decreasing the amount of electricity needed, Shree's engineers turned their attention to kiln-use reduction. In consuming large quantities of coal to generate high temperatures, the kilns produced clinker, which was cooled and mixed with a few stabilising ingredients to make cement. By replacing some of the clinker with waste coal and fly ash recycled from the kilns' operation, Shree's engineers created a new suitable cement for certain applications whilst saving energy. Later, Shree could afford to invest in sophisticated technology, such as equipment to recycle kiln-produced hot exhaust to power a separate electrical plant. Given its superior efficiency to local municipal power plant, a large, coal-fired plant was built whose production more than covered Shree's growing operations and the company sells its excess electricity to the open market, generating competitively low local energy prices.

Concluding Thoughts

It needs to be acknowledged that despite a sense of win-win being possible, we need to think critically about the bigger picture. Caution expressed 40 years ago that dire consequences to the natural environment will eventuate if world economic growth did not slow need to be recognized and taken seriously (Meadows, Meadows, Randers, Behrens, & William, 1972). We need to acknowledge population pressures and the associated resources. We need to take seriously the carrying capacity of the earth. The challenge going forward is simple: there are limits to growth and we must live within our means. Natural resources are non-renewable and if business as usual continues into the future the limits to growth will feel imminent with a very rapid and uncontrollable decline in both population and industrial capacity. Given ecological strain, economic organisation would require drastic restructuring.

How do we address these challenges?

Hahn, Figge, Pinkse and Preuss illustrate the limits to boundless economic growth by highlighting levels and dimensions of corporate trade-offs required in the pursuit of sustainability (2010). The trade-offs are individual - referring to individual decision-makers within companies; organisational - referring to conflicts between different sustainability aspects with regard to the role and impact of companies as single organisations; industry - conflicting sustainability issues within industries as organisational fields; and societal - conflicts concerning the contribution of companies to a more sustainable society at large.

Figure 7 below represents these likely trade-offs firms must face when adopting sustainability practices.

	Outcome dimension	Temporal dimension	Process dimension
Societal level	Trade-offs between different economic, environmental and social outcomes at the societal level	Trade-offs between intra- and intergenerational aspects of sustainable development	Trade-offs between a more resilient and a more efficient economic system
Trade-offs between societal and industry levels			
Industry level	Trade-offs between different economic, environmental and social outcomes at the industry level	Trade-offs between present and future industry structures and activity with regard to sustainable development	Trade-offs within structural and technological change processes for sustainable development
Trade-offs between industry and organisational levels			
Organisational level	Trade-offs between different economic, environmental and social organisational outcomes	Trade-offs between short-term and long-term sustainability orientation and effects of corporate activity	Trade-offs between different strategies and governance modes for corporate sustainability
Trade-offs between organisational and individual levels			
Individual level	Trade-offs between individual interests and preferences of different actors regarding economic, environmental and social outcomes	Trade-offs between short-term and long-term preferences and interests of different actors	Trade-offs between in the perceptions of different actors regarding corporate sustainability

Figure 7. Analytical framework for trade-offs in corporate sustainability (Hahn et al., 2010, p. 223).

We must also remember that sustainability is not a luxury – it is not a product feature to have only when it is fashionable. It is not simply a form of strategic differentiation for business. It is a practical, technical, philosophical and moral imperative. It is a challenge to our humanity first – and an economic and business challenge second.

This conference is important. There are many opportunities to be had from growing green – but we need to be conscious and thoughtful. I hope my analysis has demonstrated that while we currently have a business case which is accepted by business – and provides levers for driving activity – it has limits. Where do we go when it doesn't pay? What options do we have when there isn't a win-win? Is our evolutionary pace acceptable? As I have illustrated above multiple actors interacting in multiple ways and in multiple places bring about change. We do and I thank you for being here to take part in a small part of the conversation we must have.

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Accounting, Finance & Banking

An Analysis of Environmental Management Practices on Financial Performance of Rubber Industry in Sri Lanka

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Abstract

This study investigates the relationship between environmental management practices (EMPs) on financial performance (FP) using the dataset from 30 rubber manufacturing organizations by building panel models for the sample during the period of 2012-2016. The study has considered the three different EMPs of energy reduction (amount of furnace oil use per day), waste (amount of waste water generate), and recycle (amount of recycle waste water) in capturing the effect of EMPs on FP. In addition, to elucidate how financial performance is dealing with EMPs, the study used return on assets (ROA) as a determinant of financial performance. It is more difficult to identify the general relationship between EMPs and FP of firms due to its heterogeneity during growth of firms'. The estimation results suggested that the furnace oil consumption and recycling of waste water had significant positive driving forces on FP. However waste water treatment has no significant impact on FP. Therefore, it is critical to investigate the relationship between FP and EMPs which is yet to be resolved in order to build up a scope for companies to implement better environmental practices in the organizations.

Keywords: Environmental management practices, financial performances, Sri Lankan rubber industry, panel data, furnace oil, recycling, waste treatment

1. INTRODUCTION

Today's organizations are experiencing a very high level of pressure due to travails of competition generated from globalization, technological changes and many other forces in the environment. Agan, Acar and Borodin (2013) stressed that climate change and environmental pollution are universal challenges for the society and it will remain as hot topic of discussion at global level, due the reason that, climate scientists' gloomy prognostication that it emitted an amount of CO₂ enough for centuries to come. Montabon, Sroufe and Narasimhan (2007) stressed that the contradiction between EMPs and FP has been a great interest in the research literature, whether or not EMPs improve the FP. Rondinelli and Vastag (1996) claimed that, firms are reacting to an 'increasingly difficult regulatory environment or responding to market pressure in adapting EMPs and the responses of firms to exogenous pressures have led to EMPs that impact profitability' (p. 998). Montabon, Sroufe and Narasimhan (2007) elaborated on efficient utilization of resources

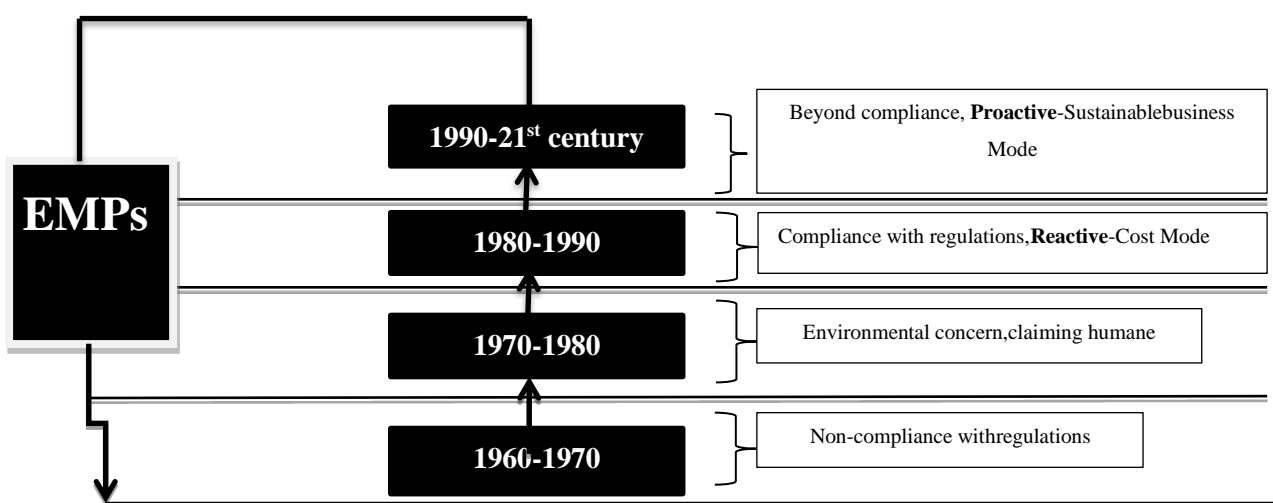
that may improve the corporate image through proactive environmental approach or anticipatory activities. A growing debate on how EMPs affect the FP of an organization is still contradictory ranging from positive to negative or statistically insignificant. A key question is still open for researchers to identify the relationship between both factors under the present circumstances. However, knowledge of the topic is still limited or scanty and has not got cumulated enough to allow a unified theory to emerge. To some extent, results are isolated and conflicting the findings are even positive, negative, mixed or no result. Klassen and Whybark (1999) discussed environmental performance as a matter of output in environmental management, which refers to the firm's activities and products on the natural environment. Burritt (2004) stressed that by adopting environmental protection measures it can have an effect to reduce costs and further Schaltegger and Wagner (2006a) stressed that eco efficiency is an improvement in the relationship between economic performance and environmental impacts. Firms get adapted to environmental management practices owing to stakeholder pressure, institutional pressure or by potential performance outcomes and under these circumstances it is still an open question for researchers.

Lawrence and Morell (1995) discussed about the findings of surveys in relation to the question at issue on firms, What motivated them to adopt environmental practices? For example, Lawrence and Morell (1995) found that environmentally proactive organizations motivated by regulations, reducing costs, avoiding being targeted by environmental non-governmental organizations, and critical events. Delmas (2003) mentioned that how these plants or workshops or factory pressure perceived that it depends upon plant- and parent company-specific factors, including their track record of environmental performance, the competitive position of the parent company and the organizational structure of the plant. Firms are adapting to environmental management practices to respond these institutional and stakeholder pressure by adopting different sets of environmental management practices. Institutional theory places particular emphasis on the legitimation process and tendency for institutionalized organizational structures and procedures to be taken for granted, regardless of their efficiency implications (Hoffman and Ventresca, 2002). DiMaggio and Powell (1983) argued that managerial decisions are strongly influenced by three institutional mechanisms coercive, mimetic, and normative isomorphism that create and diffuse a common set of values, norms, and rules to produce similar practices and structures across organizations that share a common organizational field. Jennings and Zandbergen (1995) were amongst the first to apply institutional theory to explain firms' adoption of environmental management practices. They argue that because coercive forces, primarily in the form of regulations and regulatory enforcement have been the main impetus of environmental management practices, firms throughout each industry

has implemented similar practices (Jennings and Zandbergen, 1995). Levy and Rothenberg (2002) described several mechanisms by which institutionalism can encourage heterogeneity.

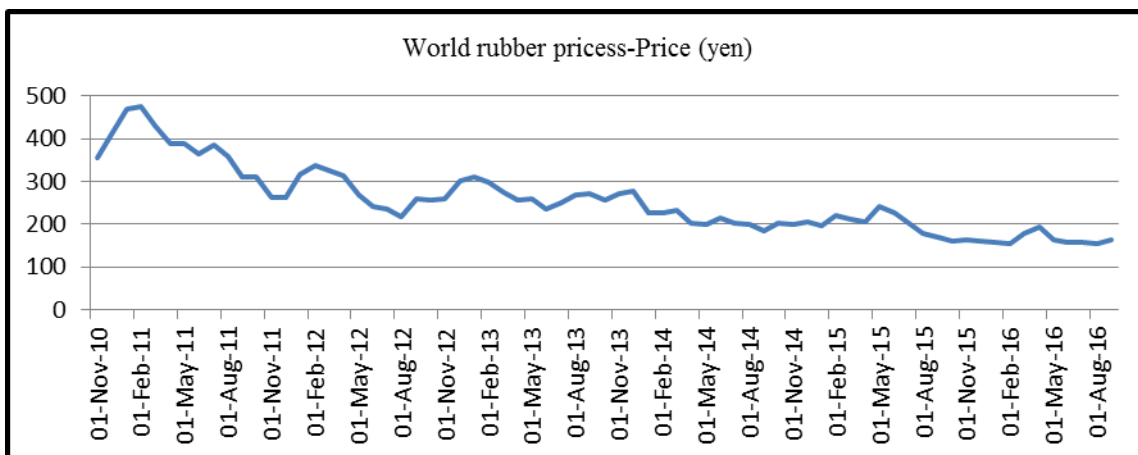
Colby (1991) stressed that an environmental concern was almost absent in the economic debates in the early 1970s and focused on the competitive markets and the dominant theoretical approach was Frontier Economics paradigm at the second stage, it was more concerns on reactive and cost mode which was characterized through environmental protection and deep ecology, and in this stage the main concern was compliance and regulations. Finally, the third stage was proactive and sustainable business mode which has gone beyond the compliance and found the way to resolve damage caused by industrial activity and the domain theoretical approach was resource management paradigm (see Figure 1). The last stage was eco-development paradigm which was managed to reveal the resource management's solutions which are not sufficient enough to find the solution through more environmentally sound measures. Amores-Salvadó (2012) emphasized that Natural Resource-Based View (NRBV) to achieve ecologically and socially more sound solution without renouncing the financial implication of the organization. Finally the third stage was proactive and sustainable business mode which has gone beyond the compliance and found the way to resolve damage caused by industrial activity and the domain theoretical approach was resource management paradigm. The last stage was eco-development paradigm which was managed to reveal the resource management's solutions which are not sufficient enough to find the solution through more environmentally sound measures

Figure 1: Berry and Rondinelli (1998) and Colby (1991) classification on compliance



Climate risk is one of the major risk components that have got adversely fastened to businesses. Physical changes in climate are expected risk in macro-circumstances which lead to extreme whether events and gradual modification of climate, which would affect the change equilibrium of businesses and already weather manifests itself in sensitive rubber manufacturing processes. Manufacturing has a role to play in both climate change mitigation and adaptation. Rubber is a very essential agricultural commodity in the economy of the country. The Central Bank Report (2014) highlighted that the foreign exchange earnings from rubber were Rupees 6 billion in 2014. At present, the country ranks among the world's top ten largest producers and the seventh largest exporter in natural rubber. Unpredictable weather conditions and irregular seasonal changes created due to physical changes in climate will adversely trigger off on irregular yield in raw rubber extraction. Rubber sector organizations are susceptible to weather sensitivity in the raw material stage. The carbon intensity risk is associated with the modification of the equilibrium of business, caused by reduction of raw rubber harvest and the price fluctuation of commodities in the market (Figure 2). The changes in weather patterns lately have had detrimental effect on rubber output such as uncertainty of supply and demand, black market price, price fluctuations due to surpluses and radical price variation in the process of raw material intake and risk in stocks. Excessive rain diminishes the tapping sequence, resulting in a short supply situation of latex causing an increase in rubber prices locally and also it compels manufacturers to resort to adhoc import of natural rubber. Generally, the export prices are decided well in advance and such deviations in raw material prices will result in loss of profits or even losses.

Figure 2: World rubber prices – 2010 November to 2016 August (yen)



Source: Author's own elaboration (prices adapted from TOCOM rubber market)

Rubber manufacturing process is heavily dependent on heating which is the main cause of climate change due to emissions. The insufficient hydroelectric power and low rainfall in relevance to weather changes what we are experiencing in the meantime will drive industries into the use of burning furnace oil. Burning fossil fuel is a governing factor in increasing emissions. Environmental pollution through the use of water in the industry is yet another major concern. Environmental authorities have given organizations very strict norms to follow and are much more vigilant as this issue has caused much uproar in the recent past in the society. Gunathilaka and Gunawardana (2015) found that a double in the emission of conventional rubber product compared to organic product while operating other process parameters under same conditions. The other danger associated with rubber cultivation highlighted by Houghton and Hackler (1999) attributing the reason of deforestation and burning of natural forest to convert land to rubber has reduced carbon stocks above- and below-ground by increasing the rate of carbon emissions.

1.1 Significance of the study

Rubber processing is categorised as one of the major polluting industries according to the published records by Central Environmental Authority (CEA) of Sri Lanka (Ranaweera, 1991 as cited in Edirisinghe, 2013). Edirisinghe (2013) stated that 40-50 litres of effluent are discharged on the average of one kilogram of rubber production. Further due to total production of 114, 700 metric tonnes in 2006 it recorded that 4.5 to 5.7 billion litres of effluent has been produced and discharged to the environment. There are three main grades of natural rubber produced such as ribbed smoked sheets (RSS), crepe rubber and centrifuge latex, effluent generate by such production processes contains 30-40 per cent of rubber and 60-70 per cent serum substances (Edirisinghe, 2013).

Table 1: Types of Energy use in Rubber Product Manufacturing

Industry Division	Rubber Products (more than 25 persons engaged factory)	Rubber & Plastic (less than 25 persons engaged factory)
Fuel & Electricity Total (Rs.)	4,813,983,284	353,138,433
Electricity (Rs.)	2,614,359,207	260,424,778
Furnace (Rs.)	896,085,259	15,619,075
Diesel (Rs.)	314,977,700	24,944,532
Kerosene (Rs.)	52,972,080	737,867

Petrol (Rs.)	47,850,814	4,534,100
L.P.G. (Rs.)	20,530,227	37,888,271
Charcoal (Rs.)	208,096,259	14,600
Firewood (Rs.)	452,702,089	3,661,274
Water (Rs.)	190,168,153	3,536,752
Other fuel (Rs.)	16,241,497	1,777,183

Source: Annual industry survey 2011 adapted by Dayaratne et al., (2015)

Rubber serum substances contain amino acids, carbohydrates and lactic acid with substances required for plant growth and some chemicals such as sodium sulphite, ammonia or formalin, formic acid, acetic acid, oxalic acid, sodium bisulphite, metabisulphite and xylyl mercaptan which are added in the processing of centrifuging. The most adverse effect could be created due to influents is pollution of groundwater and effluents cannot be used for other purposes (Kudaligama et al. 2004 as cited in Edirisinghe, 2013). Heavy usages of energy have been depicted in the above sub-sections (see Table 1) is another contrasting factor in industry to contribute more into energy consumption. Another concerning point is solid and liquid waste generated from manufacturing operations. Thus, it is worthwhile investigating into the real reasons for environmental transition from both the environmental management and the environmental performance in the rubber industry.

On the other hand one of the main targets of corrective action for climate change is to grow more rubber trees and in that context the drive to grow more rubber trees which is now categorized under secondary “forest cover” would certainly have better financial implications on the whole for the industry. Houghton and Hackler (1999) stress that burning of natural forest to convert land to rubber and Malhi et al. (2008) discuss that change in biomass carbon stocks. According to Central bank (2015) reports and department of cancers and statistics recorded that declined growth of rubber cultivation in last few year periods as recorded in total extent in 134 000 hectares in 2014 and 2015 it was 135 000 hectares, shown slight inclination 2014 to 2015, 0.7% growth compared to 2013/2014. The adverse weather conditions caused by climate change also results in caterestropic landslides. Growing of more rubber trees is considered a feasible solution that helps to reduce climate risks whilst helping to reduce atmospheric carbon. This can be viewed as leaving a good financial implication as more rubber means better prices and also less interruption to manufacturing.

1.2. Literature Review

The most interested part highlighted by Rabinowitz (2010) was ‘like those of the other institutional analysts, it is admirably effective in shedding light on the dynamics governing the interface between the local groups and their immediate common, (p.108). Bierbaum (2008) explained in her Polycentric approach for coping with climate change research paper that adaptation to climate change is lagging ‘which mean that’ not making progress in understanding vulnerability to climate change and its potential impacts on humans, conducting risk analysis, or understanding what stakeholders want from science to aid decision making’ (p. 2 as cited Ostrom 2015). The conventional theory of collective action is required as a support from a behavioural theory of human action, affecting the level of thrust and reciprocity of those who are involved into analysis of individual involvement in natural resource at different levels (Ostrom, 2009). Ostrom emphasized that in the future, many of the pressing problems faced are more on a global scale posing difficulty in establishing an effective governance arrangement in global base than on local scale while ignoring the protection of common heritage. Ostrom (2008) discussed in the Challenge of Common-Pool Resources in the magazine of ‘Environment Science and Policy for Sustainable development ‘and the tragedy with the human being the failure to halt the massive overfishing of oceans, major deforestation and excessive emission of carbon dioxide to the atmosphere from works and many activities. Rabinowitz (2010) discussed the lack of social context of the climate change crisis and how modernization going on prevailed upon humanity, and depredating the natural rendering of human vulnerability. Ostrom (2010) explained that solving global climate change problem is not by acting alone, if one country will solve that problem it will be a lack of the wealthier countries to reduce risk in climate change. ‘The complex and dynamic nature of environmental problems require flexible and transparent decision-making that embraces a diversity of knowledge and values. For this reason Daxis, Green and Reed (2009) suggested stakeholder participation in environmental decision-making which has been increasingly sought and embedded into national and international policy.

1. 3. Hypotheses and Their Correspondence to Research Design

DiMaggio and Powell (1991) argued that managerial decisions are strongly influenced by three institutional mechanisms-coercive, mimetic, and normative isomorphism that create and diffuse a common set of values, norms, and rules to produce similar practices and structures across organizations that share a common organizational field. Proliferation of the ‘best of’ rankings has created incentives to rank high in order to enhance corporate reputation.Meyer and Rowan (1977)

defined isomorphism as ‘organizations are driven to incorporate the practices and procedures defined by prevailing rationalized concepts of organizational work and institutionalized Organizations that do so increase their legitimacy and their survival prospects, independent of the immediate efficacy of the acquired practices and procedures’. The inclination towards homogeneity is called ‘isomorphism’ (Powell, 1991). The term Mimetic represents the pressures arising from the perspective to reduce uncertainty (Davidsson et al., 2006). These pressures show the mechanism by which the cultural pillar influences its power (Mignerat and Rivard, 2005). Levy and Rothenberg (2002) described several mechanisms by which institutionalism can encourage heterogeneity. First, they argued that institutional forces are transformed as they permeate organizational boundaries because they are filtered and interpreted by managers according to firms’ organizational unique history and culture. For example, ‘a firm’s history with environmental technology influenced the degree to which future technological options were viewed as an opportunity or a threat’ (Levy and Rothenberg, 2002). Second, they describe how an institutional field may contain conflicting institutional pressures that require prioritization by managers. Third, they describe how multinational and diversified organizations operate within several institutional fields both at the societal and organizational levels which expose them to different sets of institutionalized practices and norms.

Environmental management affects both the structural and the infrastructural components that means the product and the process technology and underlying management systems. Operations strategy is defined as the ‘pattern of structural (plant and equipment) and infrastructural choices (production planning, performance measurement, and product design) that guide decisions in the operations to support overall firm objectives’ (Hayes and Wheelwright 1984). Further, they described that Product technology involving the use of recycled raw materials or post-consumer recycling and process technology incorporate more efficient production systems, ‘end-of- pipe’ control technology and preventative barriers. Further, Environmental Management System (EMS) comprehends worker training and environmental audits and process discharge. Jorgensen (2000) defined Environmental Management System as a mode of providing a systematic approach to manage the environment, if giving at the top priority it reflects the company vision, mission, policy, strategies, and actions (Cited by Aggarwal, 2013). In 1992, the first EMS standard was applied in the UK. In 1996, the first EMS standard on the international scale, known as the ISO 14001 was introduced and further reviewed it in 2004 (Sakr et al., 2010 cited by Aggarwal, 2013). This certificate mandated five requirements such as Environmental policy, Planning, Implementation, Checking, and Management review (ISO, 2004). Aggarwal mentioned that environmental management is a holistic approach resolving the environmental issues companies face. Agan

defined it as ‘operating in a socially responsible, sustainable, and profitable way’ (Aggarwal, 2013, p. 25). Furthermore, Jorgensen (2000) defines “Environmental Management System as providing a systematic approach to manage the environmental protection of the company’ (as cited Aggarwal, 2013, p.25).

According to Sharma and Vredenburg (1998) and Correa et al. (2008) they discussed that SMEs perform both proactive as well as reactive environmental management practices towards elimination of environmental pollutants or waste (as cited Aggarwal, 2013). Further, they mentioned in the same paper that such activities from waste treatment to developing sophisticated environmental management practices (Aggarwal, 2013). Aggarwal (2013) clarified that in the past literature, these activities were labeled as actions, performance, behaviors, applications, practices or system. In this study researcher categorized and labeled the term ‘practices’. The practices discussed in this paper are waste treatment, recycling, and energy consumption (furnace oil reduction). In environmental practices reduction is referred to as conservation of energy, water, and raw materials (Aggarwal, 2013). Aggarwal (2013) mentioned that disposal of waste without any treatment for land filling and fresh marine water or air is merely bad environmental management practices that pollute the environment. Qian et al. (2011) mentioned that dumping practices are not sensible product, it could create serious issues such as ground water contamination, leakage of toxins, air pollution, and unintentional effect on the flora and the fauna (as cited in Aggarwal 2013). Recycling is defined as ‘the reuse of materials from returned products without conserving the product identity’ (Kapetanopoulou and Tagaras, 2011, as cited Agan, Acar and Borodin, 2013). Internal recycling of new raw material, scrap and water for usable material has directly affected financial performance. Agan, Acar and Borodin (2013) explained internal recycling as practices of collecting and reprocessing of material by using recycled raw materials. Fresner (1998) stressed that recycling as one of cleaner production mechanisms (as cited in Agan, Acar and Borodin, 2013). Therefore, researcher proposes:

- *H1: Fossil fuel consumption has a significant impact on financial performance in rubber industry*
- *H2: Waste water treatment has not a significant impact on financial performance in rubber companies.*
- *H3: A rubber industry’s internal recycling has a significant impact on financial performance.*

2. Method

This section introduces the methodological slant for the empirical analysis which tests to use the hypothesis of the research work and the quantum of the data, the research work study data properties from econometric perspectives, with the help of descriptive statistics and unit root test, this will help us applying multivariate regression analysis (fixed and random effects) panel models.

2.1 Data and data collection techniques

Four variables used are Furnace oil consumption, waste treatment and recycling of raw material. Secondary data was taken from the 30 rubber manufacturing organization from the time period 2012-2016, in Sri Lanka. Present study which placed financial performance a dependent variable while furnace oil consumption, waste water treatment and recycling of raw material as independent variables.

2.2 Instrument and measures

2.2.1 Independent variables (EMPs)

Quantitative measures of EMPs and financial performance are well matched for the study to measure relationship between environmental and financial performance. Quantitative measures of both EMPs and FP data are derived from secondary sources of data bases. Previous research has measured the environmental management practices of a firm as the firm may manage their wastes in a number of ways. King and Lenox (2001) have generated two measures waste generation and Onsite Treatment. González-Benito and González-Benito (2005) constructed a comprehensive review of environmental analysis based on environmental management practices into three categories. According to previous literature there were three—fold of environmental management practices in operations, such as operation functions related practices, planning and organizational practices and communicational practices. Operational practices are related to operations and the production systems, which classified as two categories: product-related practices and process related practices. The extent to which the company has defined an environmental policy was denoted by the Planning and Organizational Practices and communicational practices aimed at communicating of actions favour to the natural environment. This study uses the onsite treatment as one of the independent variable. King and Lenox (2001) defined onsite treatment as ‘ the degree to which waste is treated onsite as opposed to being released into the environment or transform for third party processing’ (p.247). This study used the amount of treated water (cubic meters) per day to generate onsite treatment of waste variable.

2.2.2 Dependent variable: Financial Performance (ROA)

Operating Performance is the performance of a company based on the profit recorded in the financial statements. It is measured by return on equity (ROE) and return on assets (ROA). ROE and ROA indicate how efficient the company generates profits or earnings based on shareholders' equity and company's total assets respectively. Market Valuation is the performance of the company based on its market value in the capital market, The Market valuation of the firm is commonly measured by Tobin's Q and market-to-book (MTB) ratio. For instance, Tobin's Q is popular amongst researchers such as Bhagat and Bolton (2008). This ratio measures company's assets in relation to the market value. A ratio less than 1 indicates it costs more to replace firm assets as compared to how much it is worth.

2.2.3 Control variable

This variable needs to be held constant during the process to test the relative impact of independent variables. Based on the resource dependence theory (Pfeffer and Salancik 1978), larger firms have more access to capital and more resources to add competency, skills and knowledge to its human capital. Moreover, this factor may contribute to the better performance of the company due to its size advantage. In addition, based on the political cost theory, larger firms also face greater public scrutiny. Due to this, they disclose more information in order to reduce agency costs and avoid being targeted by the regulator for regulatory non-compliance (Watson, Shrivies and Marston, 2002). Thus, large companies practice good governance not only for performance but also for other motives.

2.3 Research design

Researcher selects to conduct panel data to examine the driving effect of EMPs on FP. Prior studies employed event study, multivariate statistical techniques, structural equation techniques and other statistical techniques based on perception measures of respondents. Environmental measures should be better to consider in long period through different cross sections (time series cross sectional data). Therefore, researcher adapted the panel regression method to evaluate the impact of EMPs on FP from 30 rubber manufacturing companies from 2012 to 2016. Researcher decided to employ two different panel estimation methods: fixed effects (FE) and the random effects (RE) model.

2.3.1 Econometric specifications

The analysis of the empirical relationship of environmental and financial performance of organizations involves an estimation procedure based on panel data evaluation. Given the nature of the research work and the quantum of the data, the research work study data properties from econometric perspectives, with the help of descriptive statistics and unit root test, This will help us applying a random effect panel data model and a fixed effects panel data model is used. The theory of internalization of externality framework is adopted for this study. The model is derived in the traditional manner from the production function; the performance of a company is expressed as a function of environmental management practices such as furnace oil consumption, waste water treatment and waste water recycle. Consequently the Random effect model for specifying financial performance (ROA) is expressed as follows:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \dots + \mu_j + \varepsilon_{it}$$

$$y_{it} = \beta_0 + \beta_1 \text{Size}_{it} + \beta_2 \text{Furnace oil} + \beta_3 \text{Waste treatment} + \beta_4 \text{recycle} + \mu_j + \varepsilon_{it}$$

The equation of the model are grouped into two, equation one and equation two, equation one of the models signify that the data is non-stationary meaning it cannot be co-integrated, to convert the data to stationary, equation two was formed with log on each variable which show that the model is converted to first difference and the data has now become stationary.

$$\Delta y_{it} = \beta_0 + \beta_1 \Delta \text{size}_{it} + \beta_2 \Delta \text{furnace-oil} + \beta_3 \Delta \text{waste-treatment} + \beta_4 \Delta \text{recycling} + \mu_j + \varepsilon_{it}$$

Δ-First difference

Where i denote the firm ($i=1, \dots, n$ units under observation); j shows the industry; and t ($t=1, \dots, t$ time period of data collected) is the time period. μ is the industry related fixed effects; ε is the standard error term. Where y_{it} denotes the observation of the dependent variable (financial performance is return on sales -ROA) of a firm I in a period of t , ROS reflect market valuation by consumers and trading bodies (Iwata and Okada, 2011). X_{it} represents the set of time-variant independent variables (repressors), and μ_j is the time –invariant explanatory variables. Then the explanatory variable, size represents the firm size, and as the proxies for environmental management practices, researcher takes furnace oil consumption, waste treatment and recycling, respectively. Δy_{it} is the Δ of financial performance (ROA); Δ (furnace-oil) is the Δ of furnace oil consumption; Δ (waste treatment) is the Δ of waste water treatment and Δ recycle is logarithm of recycle of material. Johnston and DiNardo (1997) emphasizes two reasons do not ignore panel structure of data, first due to the pooled model yields estimates by consistent estimates of

regression. In analysis, two models random and fixed effects were used, where fixed effects model have the same issue of correlated time-invariant effects in repressors, but it does not appears in random effect model. For the specification of random effects panel data model is as fallows,

$$\mathcal{E}_{it} = \zeta_i + \eta_{it}$$

Where η_{it} is composed of the disturbance ζ_i reflecting left-out variables that are remaining broadly over each firm over the time period and idiosyncratic error (considered as time-persistence). The main assumption in fixed effects model is individual effect ζ_i is correlated with time-variant independent variables X_{it} . In here ζ_i is a constant or dummy variable for each unit in analysis. Kohler and Kreuter (2001) and Johnston and DiNardo (1996) stressed that constant of each observation of one specific firm. The estimation method for random effects regression individual effect. In this model ζ_i is assumed to be time-variant independent variables (Johnston and DiNardo, 1996). To finalize which model is the appropriate Wu Hausman test will decide it (StataCorp, 1997).

3. RESULTS

3.1 The correlation matrix

In the econometric analysis, researcher built up a panel data based on 30 rubber manufacturing companies in Sri Lanka from 2012 to 2016.

Table 2: Descriptive statistics of variables

	Mean	Median	Standard deviation	ROS	FOIL	WASTE	RECY	SIZE
ROA	31.21273	31.50000	9.116657	1.0000				
FOIL	2636.647	2800.000	1211.456	0.466247*	1.0000			
WASTE	274.9600	120.0000	391.5977	-0.018896	-0.261320*	1.0000		
RECY	8.740000	4.500000	10.67986	0.049943	0.018896	0.012535	1.0000	
SIZE	6.143933	5.000000	4.876484	0.150624*	0.012602	-0.116083*	0.193792*	1.0000

Source: Author's own elaboration

Table 2 shows the mean, standard deviation and correlation coefficients between the dependent, independent, and control variables along with correlation matrix. Table 1 depicts the correlation

between FOIL and ROA is positive, providing evidence to justify H1. The correlation between WASTE and ROA is negative and the correlation between RECY and ROA is positive, providing evidence to support to H2 and H3 respectively.

3.2 Regression result

3.2.1 Stationary test (Unit root analysis)

In order to avoid spurious regressions, researcher conducted unit root test for panel data to assess stability before estimating panel regression. There are different estimation methods for unit root test in panel data. In this study two types are preferred, that is unit root test for the same root and different roots. Levin et al. (2002) explained that the Levin-Lin-Chu test (LLC test) can be applied for measuring the same root, further Pesaran et al (2003) emphasized the method of Im-Pesaran-Shin test (IPS test) when different roots are considered. By performing unit root taking all the data into a common platform to precede the analysis. Here the researcher intended to check whether all the variables are in the same order of interpretation. As per literature, Levin, Lin and Chu (2002) stressed that (H₀- Panel data has unit root (assuming common unit root process; H_a- Panel data has not unit root). Breitung (2000) also stressed that, H₀- Panel data has unit root (assuming common unit root process); H_a -Panel data has not unit root. Im, Pesaran and Shin (2003) mentioned that, H₀- Panel data has unit root (assuming individual unit root process) (Non-stationary); H_a- Panel data has not unit root (Stationary). Fisher Type Test using ADF and PP test implies that ((Maddala and Wu (1999) and Choi (2001)) (Assume individual unit root process, H₀- Panel data has unit root (assume individual unit root process) (Non-stationary); H_a- Panel data has not unit root (Stationary). Different approach was suggested by Hadri (1999), H₀- Panel data has not unit root (assuming individual unit root process) (Stationary); H_a- Panel data has unit root (Non-stationary).

Table 3: Results of unit root tests for panel data

Variable	LLC test probability (level)	LLC test probability (Lag 1)	IPS test probability (level)	IPS test probability (Lag 1)	Hadri test probability (Lag 1)
ROS	0.0000***	0.0000***	0.0115**	0.0000***	0.0000***
FOIL	0.0000***	0.0003***	0.0579*	0.0000***	0.0000***
WASTE	0.8745	0.0000***	0.4761	0.0000***	0.0000***
RCEY	0.0553	0.0007***	0.1606	0.0001***	0.0000***
SIZE	0.8675	0.0000***	0.7834	0.0000***	0.0000***

Source: Author's own elaboration

*** indicates a significant level of 1%, ** indicates a significant level of 5%, * indicates a significant level of 10%

The LLC and IPS test revealed that all of the variables were statistically significant (see Table 3) at the 1percent level (Lag 1). Data were not stationary at level but when it as converted into first difference then they became stationary and it means that data has not unit root in the first difference. Therefore, researcher selected these five variables to perform panel estimation.

Definitions and descriptive statistics of five variables are presented in Table 4 respectively. Regression results are presented in table 6. Researcher shows the result of static panel data estimates for model in table 5. This section records the results that originated when empirically estimating the relationship between environmental management practices and financial performance of rubber industry in Sri Lanka based on statistical techniques and explained in section 2 {random effect (RE) and fixed effect (FE)}. Hypothesis derived in section 1 of the paper were tested based on two regressions methods ex. Table y presents the static panel data analysis for of regression model. For each three independent variables and control variable with depended variable, researcher analyses the fixed and random effect model. After the estimation of LSDV and Random effect model, the researcher had to decide which model was appropriate. With the purpose of having robust results, the researcher used Housman Test which checks the suitable model for interpretation.

3.2.2 Empirical result and model specification

Table 4: variable definition and measurement

Key variables	Measurement and definitions
ROA	Return on Sales (Firm profit/total sales)
FOIL	Furnace oil consumption (liters) per day
WASTE	Waste water treated (cubic meters) per day
RCYCL	Recycle raw material (as a % from total output) per day
SIXE	Average firm total assets (rupees million '00')

The Hausman test is used to select the appropriate regression model for the analysis. According to the table x, the Hausman test revealed that the p value is less than 0.05, so the null hypothesis of the appropriateness of the cross-section random effect model can be rejected.

Table 5: The impact of environmental management practices (determinant of financial performance) on financial performance using static panel data analysis

Dependent(financial performance-ROS)	Fixed	Random
Constant	-13.46877(48.04649)	-13.58707 (43.25268)
D(Furnace oil consumption)	162.3028*** (48.55810)	106.2565** (35.98340)
D(waste treatment)	0.133710 (0.478173)	0.245399 (0.343990)
D(recycle)	0.223063** (0.082518)	0.106706 (0.076016)
D(Size)	-1.03E-06 (0.000410)	0.004549 (0.006373)
Hausman		22.760072**
R-squared	0.688178	0.102158
F-statistic	0.498078	1.390668
Breusch-Pagan test	0.0957	
Prob(F-statistic)	0.098983	0.200948
Durbin-Watson stat	3.477638	3.303583
Serial correlation (Breusch -Godfry serial correlation)	1.310	
Number of observation	120	120

Note: (i) Figures in parentheses are slandered errors robust to heteroscedasticity. (ii) Hausman is the Hausman test for fixed effects over random effects. (iii) Serial correlation is the test for first order serial correlation in fixed effects models presented by Baltagi (1995). + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

D-First difference values

The model related to fixed effect and random effect, fixed effect is the best specification, since the Wu-Hausman test is significant. Hence, the researcher decided to proceed with the Fixed Effect Model for the analysis. Moreover, a CUSUM test was conducted to decide on the stability of the model. The findings revealed that the financial performance (ROA) is a stable variable, since the blue line is located between two red lines in the same test. Table 5 depicts the summary results of the fixed effect panel least squares test and the random effect model. Since the significant value of the F-statistic is less than 0.1 at the 10 percent level of significance, the regression model is significant in explaining the financial performance. The adjusted R-squared value implies that 69 percent of the financial performance variation can be explained through the model.

Table 6: Hausman Test Result: independent variables and ROA

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	12.767587	1	0.0447	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
DIV1	0.071064	0.379937	0.018500	0.0232
DIV2	-0.148812	-0.155242	0.004010	0.9191

*Significant at 5% level of significance

The Durbin–Watson (DW) statistic is not a suitable explanation for non-correlation of errors in panel data. Hence, it is recommended to proceed with the serial correlation LM test, since the DW value is much higher than 2 which reflect a negative serial autocorrelation (see Table 6).

The next step of the data analysis involves the relevant diagnostics tests to check on the regression assumptions. If there are any violations, the researcher could proceed with corrective actions to produce a robust model. The correlations were estimated among the independent variables to check on multicollinearity. The correlation between the variables, and there is no multicollinearity between the variables. This confirms the high discriminant validity of the current study. A Breusch-Godfrey serial correlation test was performed to test whether there is a serial autocorrelation (H0: There is no serial correlation in the residual, H1: There is serial correlation in the residual). Since the p value is greater than the 0.05, the researcher could not reject null hypothesis and the results revealed that there is no serial correlation among the residuals which is desirable. Since the researcher considered the lagged variables, theoretically there is no room for a serial correlation. One of the major issues arising in panel data is the problem of heteroskedasticity. The results of the Breusch-Pagan test revealed that the p value (0.0957) is greater than 0.05. Hence the researcher could not reject the null hypothesis, implying that the residuals are homoscedastic (same scatter), which is desirable.

The Ramsey RESET Test for Model Specification revealed that the p value of F–statistics is higher than 0.05, so the researcher could not reject the null hypothesis that the model has no omitted variables. This result emphasizes that there is no significant evidence for model mis-specification. The Fixed Effect Model summary stated in table x implied that lagged furnace oil consumption and lagged recycling are proxy for environmental management practices and implies a significant determinants of financial performance. According to the table 6, the coefficient value of the Lagged Furnace oil consumption (162.3028) shows the highest positive impact on dividend yield while waste water treatment (0.133710) and recycle of raw material (0.223063) also showing positive relationships with the financial performance (ROA).

3.2.3 Impact of furnace oil consumption and recycle of waste water on ROA

An important question to be answered in this section is to identify whether the significant EMPs may have an impact on ROA. Here, the dependent variable is taken as the lagged ROA whereas the independent is taken as the lagged furnace oil and lagged recycle. Since the independent variables are time and cross sectional variant binary variable. It is suggested to proceed with a sample panel least square (PLS) regression model. The probability to estimate lagged furnace oil and lagged recycle are estimated using the fixed effects specification on panel data. Since the independent variables X1 (lagged waste water), and X2 (lagged recycle) are in dichotomous scale, it can have only two possible outcomes which the researcher denotes as 1 and 0. Moreover, whether to proceed with fixed effect or random effect model is to be determined by performing the Hausman test.

According to the table 6, the Hausman test revealed that p value is less than 0.05, so the null hypothesis of the appropriateness of the cross-section random effect model could be rejected and proposed to proceed with the fixed effect model.

Table 7: Impact of furnace oil consumption and recycle of waste water on ROA: Fixed effect test results

Variable	Coefficient	Std. Error	Probability
C	-27.48022	44.50137	0.5385
DIV1	0.071064	0.488349	0.8846
DIV2	-0.148812	0.073346	0.0991 ⁺
R-squared	0.325010	Prob(F-statistic)	0.091585
Adjusted R- squared	0.066003	Durbin-Watson stat	2.023045

*Significant at 5% level of significant,

⁺Significant at 10% level of significant

The significant value of the F-statistic is less than 10 percent level of significant (see Table 7), and the regression model is significant in explaining the lagged ROA. The adjusted R-squared value implies that 6.6 percent of the lagged ROA variation could be explained through the model. The Durbin-Watson (DW) statistic is closer to 2, it implies that errors are uncorrelated. The p-value of lagged furnace oil (IV1) reveals that, it is not significant to explaining the lagged ROA movements. Moreover, lagged recycle is significant in explain the lagged ROA movements at significant level of 5 percent. The coefficient value reveals that there is a negative influence of lagged recycle of waste water on the lagged ROA and it is significant to explain at 5 percent level of significant.

Table 8: Multiple Regression outcomes with ROA

Hypothesis	Outcome
H ₀	There is no significant relationship between furnace oil consumption and ROA
H _a	There is a negative significant relationship between recycle waste water and ROA

4. DISCUSSION

In the fixed effect specification, the coefficient on lagged furnace oil consumption is significant (at the 1% level) and has a positive coefficient (positive effect on ROA), the coefficient value of the Lagged Furnace oil consumption (162.3028) shows the highest positive impact on ROA while waste water treatment (0.133710) and recycle of raw material (0.223063) also shows positive relationships with the financial performance (ROA). In addition to that, the amount of recycle raw material also shows a significant relationship (0.0438 percent is almost significant at the 5 percent level) and has a positive effect on ROA, and the effect is economically relevant. Moreover, it could be implored that, if the firms increase furnace oil consumption by 1 percent, there will be 162.3028 percent increment in the financial performance (ROA). Likewise, if the firms increase the recycle of raw material by 1percent, there will be a 0.223063 percent increment in the financial performance (ROA). Similarly, if the firms increase waste water treatment by 1 percent, there will be a 0.133710 percent increase in the financial performance, but it is not significant with financial performance.

Although, due to the short time-horizon of the analysis it cannot fully rule out some longer-term positive effects that are not accounted for and hence the negativity is somewhat less severe than the one revealed here. Waste water treatment and firm size have no significant effect on ROA. For the random effects specification, the furnace oil coefficient is significant; the Hausman test is significant at 5 percent, suggesting that the random effects estimates may be inconsistent. Thus, the static model provides some evidence that furnace oil consumption significantly affects financial performance.

Table9: Summary of the result

Research aspect	Findings
Hypothesis H1	Confirmed: There is a significant effect, positive relationship for financial performance
Hypothesis H2	Confirmed no significant relationship but positive relationship with ROA
Hypothesis H3	Confirmed: There is a significant effect, positive relationship for financial performance
Firm size effects	No significant firm size effects on financial performance

Source: Author's own elaboration

Further, waste water treatment, recycle and size of firm have no significant effect on ROS to establish evidence from Random effect model. The salient results of the empirical analysis is summarize below to endure analysis of the study, There are three hypotheses described above; H1, H2 and H3 particular by with regard to their meaning. Attached managerial implications of the results are developed which bridge the meaningful conclusion.

This study concentrates on the relationship between environmental management practices and financial performance using a panel database of Sri- Lankan rubber manufacturing firms. The ultimate objective of this study is that to find out environmental management practices has a positive statistically significant relationship with respect to financial performance (ROA). There are a number of limitations have to be surmounted in the research period such as environmental performance since it is a novel concept and it lacks research in the Sri Lankan context. An existing feature of present empirical studies on the relationship between environmental management practices and financial performance is the very limited evidence particularly in the context of panel data analysis. In this study, researcher has assessed static panel data estimates of relationship between EMPs and financial performance by considering 30 rubber companies in Sri Lanka between 2012 and 2016. While static panel data estimates suggested absence of significant impact of lagged waste water treatment on financial performance, whereas, lagged furnace oil consumption and lagged recycle of raw material revealed significant evidence revealing that these practices affect financial performance. Further result revealed that firm size has not significant effect of financial performance. The preponderance of research evidence is that furnace oil consumption has strongly impacted on financial performance. Furnace oil burning is directly proportional to energy consumption of a firm that has a significant impact on environment due to greenhouse gas emission. In particular, reductions of finance oil consumption have reduced significant impact of environmental challenges and improved financial performance. Similarly,

recycle of raw material also has the significant evidence on financial performance. Moreover, recycle has eliminated land filling and also has a significant impact on financial performance. Waste water treatment is a cost for the company; it has a significant effect on greenhouse gas. The above model has not suggested that a significant relationship exists between waste water treatment and financial performance. The clear weight of our evidence is that financial performance was impacted by environmental management practices. Research findings are in line with theoretical work of environmental management have a positive impact on financial performance.

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Assessing the Validity of CEV Model in Measuring Ethical Organizational Culture in Banking Sector in Sri Lanka

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Cadbury (1992) refers corporate governance, as systems, structures and processes by which business corporations are directed, controlled and monitored. The success or failure of the corporate governance will depend not only on legal requirements but also on other ethical behavioural aspects and internal governance culture in the organization. There should be an environment within the organization to have a culture and behaviour that will strengthen the implementation of good corporate governance practices. A company should have specific principles and values related to their stakeholder commitment. These values are more important than a rule based approach. Kaptein (2008) has developed the CEV model which consists of eight virtues, namely; clarity, congruency of supervisor, congruency of management, feasibility, supportability, transparency, discussability and sanctionability.

The purpose of this study is to assess the validity of CEV model of Kaptein in measuring ethical organizational culture in a banking sector environment in Sri Lanka. A questionnaire was prepared based on the 58 scales of the CEV model and distributed among 50 employees of a leading private bank in Sri Lanka and out of them 40 were responded. This analysis is based on the data collected from those 40 participants. A five point Likert Scale ranging from (1) strongly disagree to (5) strongly Agree was used. Cronbach's Alpha coefficient Analysis was used in measuring the reliability, and KMO and Bartlett's tests were used to assess the convergent validity. CEV model has been found valid in measuring ethical organization culture with few modifications to the scales in Sri Lankan banking environment. Since this study has been made as a pilot study using only 40 participants of a particular organization in the banking sector there are certain limitations in this study. There is an opportunity for future researchers to use more data from different type of organizations and compare them to generalize the findings.

Key Words: Corporate Governance, Ethical Organization Culture, CEV model

INTRODUCTION

Cadbury (1992) refers Corporate Governance, as the systems, structures and processes by which business corporations are directed, controlled and monitored. Main body of knowledge of corporate governance is based on Agency relationship, (Jensen and Meckling 1976; Shleifer and Vishny, 1997) Stewardship and stake holder relationship (Williamson, 1975; Freeman, 1984), etc. Although numerous laws and regulations are imposed by relevant authorities to strengthen the Corporate Governance, still we are experienced with corporate scandals. In order to find the answer for a robust corporate governance mechanism we have to think ahead of traditional economist view and find out some ways and means beyond that thinking. It is evident that legal frame work imposing the corporations to comply with certain requirements, alone will not be a successful measure unless the corporations itself behave ethically from the top to the bottom of its organization. There should be a proper implementation mechanism and environment within the organization to have a culture and behaviour that will strengthen the implementation of good corporate governance practice.

Ethical aspect of corporate governance has been emphasized by several academics and researchers in this field. Cadbury suggests that corporate governance is a concept with implications for an organization's approach to corporate social responsibility and business ethics in addition to ensuring that regulatory responsibilities are fulfilled. Hermalin (2005) stated that corporate governance can be considered as a process that involves an environment of trust, ethics, and moral values of all the stakeholders. According to Collier and Roberts (2001) corporate governance is not just a function of finance or accounting. The success or failure of the corporate governance will depend not only on legal requirements but also on other ethical behavioural aspects and internal governance culture in the organization.

Ethical Organizational Culture (EOC)

Ethical organizational context, is represented by two constructs, i.e: ethical climate and ethical culture (Trevino and Weaver, 2003; Kaptein, 2008). Ethical climate is perceptions and aspects that determine what constitutes ethical conduct (Victor and Cullen, 1988), whereas ethical culture is those aspects that stimulate ethical conduct (Trevino and Weaver, 2003; Kaptein, 2008). As Rentsch (1990) described ethical culture is more concern about the organization and ethical climate pays more attention to individual's perceptions and feelings. In general, ethical culture encompasses the experiences, presumptions, and expectations of how the organization is preventing unethical behaviour and promoting ethicality (Trevino and Weaver, 2003). It is therefore

a subset of organizational culture, with formal (e.g. codes of ethics, reward systems) and informal (e.g. peer behaviour, ethical norms) systems that can promote either ethical or unethical behaviour (Trevino et al 1990) Ethical culture of an organization stimulates the positive behaviour and well-being of its members (e.g. Trevino et al., 1998; Kaptein, 2010; Huhtala et al., 2011) The logic behind the idea of focusing on ethical values as a means to impact employee ethical behaviour is that individuals can be expected to act in a manner consistent with the values in the organization (Hunt et al., 1989).

Trevino defined EOC as those aspects and conventions of organizational behaviour that either encourage the organization to operate in a sustainable way or deter it from doing so. He has defined EOC as “a subset of organizational culture, representing a multidimensional interplay among various “formal” and “informal” systems of behavioural control” (Trevino et al., 1998). When employees believe that policies and procedures regarding ethics are followed by managers and other individuals in the organization then higher ethical values exist. Managers might display these values by acting ethically themselves and by rewarding ethical behaviour and punishing unethical behaviour (Hunt et al., 1989; Jones, 1991). Working to create an enhanced level of ethical values can significantly impact the behaviour of individuals within the organization

Paine (1994) stated that the integrity approach to a firm’s thinking about business ethics and corporate responsibility to be deeper and broader than that guided by compliance. A code of ethics can be thought of as a set of moral principles or guidelines which govern behaviour and which enshrine a set of values and beliefs. If employees observe that management are behaving in an unethical manner, then staff ultimately end up following their lead. (Huhtala et, al (2013)

Ethical business cultures are "based on alignment between formal structures, processes, and policies, consistent ethical behaviour of top leadership, and informal recognition of heroes, stories, rituals, and language that inspire organizational members to behave in a manner consistent with high ethical standards that have been set by executive leadership" (Ardichvili et al.(2009) Corporate Ethical Values can also be displayed through more formal systems such as reward systems, policies, and codes. When employees believe that policies and procedures regarding ethics are followed by managers and other individuals in the organization then higher CEV exist. For example, managers might display these values by being concerned with the issues of ethics in their organization and by acting ethically themselves including rewarding ethical behaviour and punishing unethical behaviour (Hunt et al., 1989; Jones, 1991)

Ardichvili and Jondle (2009) defined Ethical Organization Culture (EOC) as a subset of organizational culture, signifying a multidimensional interplay among several formal and informal systems of behavior control that are capable of promoting ethical or unethical behaviour. There is evidence to suggest that leaders' ethical development is connected to organizational culture and socialization processes (Brown and Trevino, 2006). A strong ethical culture promotes structures and decision-making processes, which can support ethical choices in difficult leadership situations. Corporate ethical values have been shown to have a positive impact on person-organization fit, where, "individuals can feel more compatible with organizations that share their values when these values are ethical"(Andrews et al., 2011)

Existence of an ethically-oriented organizational culture could influence on the ethical behaviour of the members of the organization (Brien, 1998; Seligson and Choi, 2006; Sinclair, 1993; Smith and Drudy, 2008).According to Trevino et al. (1998) there is a positive relationship between ethical culture and ethical behaviour as well as ethical culture and organizational commitment. Kaptein (2011) stated that the influence of the ethical culture of organizations on employee responses to observed wrongdoing.

Huhtala et al. (2013) stated that ethical culture has a direct effect on the occupational well-being of managers and different dimensions of the ethical culture influence different forms of occupational well-being differently. There is an association between ethical leadership and ethical organizational culture. Ethical leadership has been shown to predict many positive outcomes Leadership is often mentioned as one of the most important elements of an organization's ethical culture (Trevino, 1990; Brown & Trevino, 2006). Leaders who are perceived as being able to create and support an ethical culture in their organizations are those who represent, communicate, and role model high ethical standards (Brown et al., 2005).

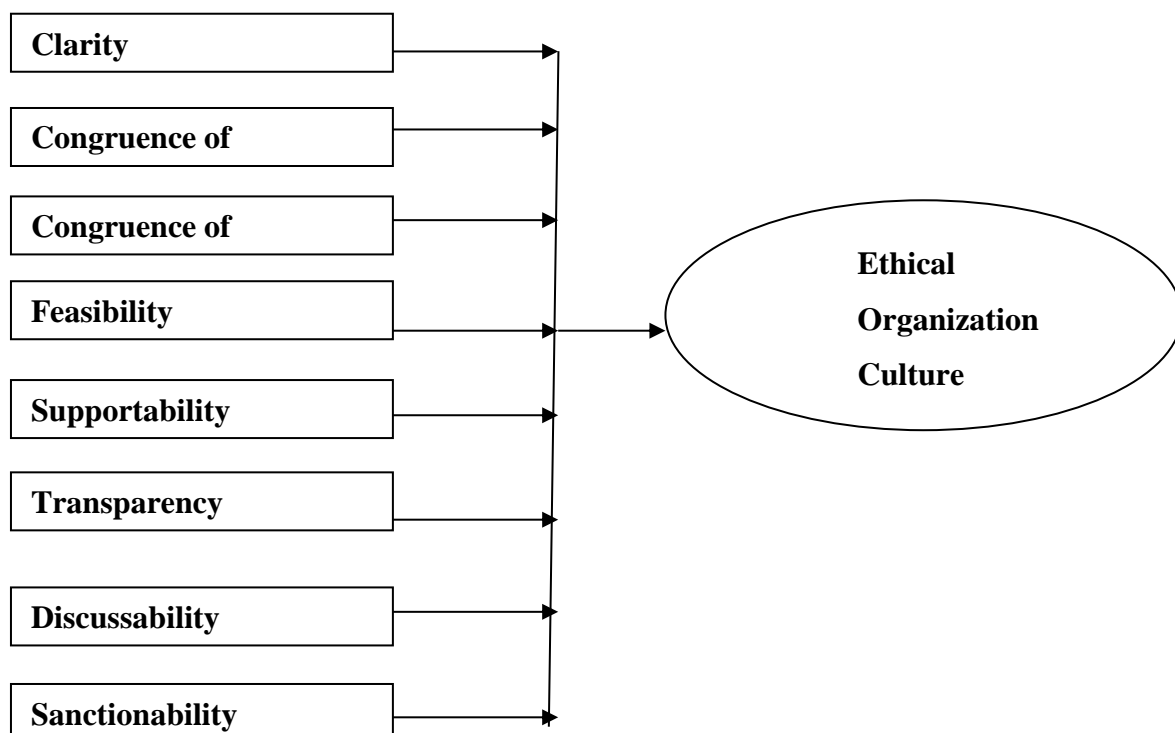
It is important to develop an ethical culture in an organization as it benefits individuals as well as the organization. This can be done by establishing ethical codes, providing training, informing clearly what kind of behaviour is acceptable, and establishing reward and punishment procedure etc. (Huhtala et.al (2013) Managers can develop their organizations' ethical culture by creating reward systems, ethical codes and norms (Weaver et al., 1999; Trevino and Weaver, 2003). A strong leader with a high level of cognitive moral development and who can influence employees is, therefore, able to act towards promoting an ethical organizational culture (Trevino and Weaver, 2003)

According to Brown (1992) organizational culture can be a powerful tool for improving performance and the key to organizational development and effective leadership. It is therefore important to assess the state of the organization's ethical culture and its effect on the organization.

The informal elements of a cultural system include norms for behaviour that are consistent with the ethical standards or the code of conduct, mission, and decision-making processes (Trevino & Brown, 2004). Leadership is often mentioned as one of the most important elements of an organization's ethical culture. Leaders who are perceived as being able to create and support an ethical culture in their organizations are those who represent, communicate, and role model high ethical standards (Brown et al., 2005). According to Hausman and McPherson (1993) ethical attitudes and behaviour play an important role in overcoming the potential market failure problems. Hunt and Vasquez-Parraga (1993) discuss the role of ethical culture in aiding ethical behaviour within the organization.

Kaptein (2008) approaches the ethical organizational culture through ethical virtues. He stated that both individuals and organizations should have certain features, virtues, which enable morally right behaviour for an organization to become ethical. Virtue ethics provides a theory for organizational culture by defining what kind of behaviour is morally right and worth pursuing. The Corporate Ethical Virtue (CEV) model developed by Kaptein (2008) described eight normative virtues which would promote the ethical culture of an organization.

Conceptual Framework



Dimensions of the Construct

A research made by Trevino and others (Trevino et al 1998) has found that there is a positive relationship with ethical action and employee behaviour. These findings indicate the necessity to measure the ethical dimension of an organization culture. Although there were constructs developed for ethical climate, Trevino is the first one who developed and tested a construct for ethical culture (Trevino 1998). They used fourteen items; six for sanction for ethical and unethical conduct, three for role modelling of top management, three for implementation ethics code and one for whether ethical behaviour is the norm.

According to Kaptein (2008), the ethicality or virtuousness of an organization can be determined by the extent to which organizational culture stimulates them to act ethically and prevents them from unethical behaviour. Kaptein developed the corporate ethical virtue model (CEV model) which consists of eight virtues,

De Bode et al (2013) made an effort by developing a shortened version of the CEV model for use in ethics-related studies. By examining the shortened scale's validity and generalizability across multiple organizations in a different culture in United States. One goal of his study was to administer the CEV model to employees from multiple organizations to understand which facets of ethical behaviour were common across organizations and to assess the consistency of employees' perceptions across numerous organizations using a shortened version of the CEV model.

He demonstrated that an acceptable ethical organizational culture questionnaire comprised of 58 items could be shortened to 32 items. The shorter scale will allow diagnosticians to combine it with other questionnaires to facilitate a more comprehensive diagnosis (i.e., including ethical culture). Thus, the shorter length will likely make the instrument more attractive to practitioners and researchers who might shy away from longer diagnostic scales requiring more of their resources

Methodology

In our study we identify eight dimensions of ethical corporate culture based on the CEV model of Kaptein(2008) and developed our hypothesis. I prefer Kaptein's model rather than DeBode's model(2013) or Trevino's model (1998) as Kaptein's model covers a wider range compared to the other two. Eight dimensions identified in an ethical corporate culture are (i) clarity (ii) congruence

of Supervisor (iii) congruence of top management (iv) Feasibility (v) Supportability (vi) Transparency (vii) Discussability (viii) Sanctionability

- (i) Clarity refers to the extent to which an organization's expectations are clear to its employees that they behave in an ethical manner. When employees are left to their own discretion and moral intuition without a clear guidance or proper organizational frame of reference, the risk of unethical conduct is high.
- (ii) Congruency of Supervisors reflects the extent to which employees' immediate supervisor models appropriate ethical behaviour. Behaviour of immediate supervisor has a greater influence on ethical behaviour of subordinates.
- (iii) Congruency of Management refers to the extent to which the Board of Directors and senior management influence ethical workplace behaviour. Unethical conduct of employees is motivated by the example set by manager or board member engaging in unethical and prohibited conduct. This organizational virtue amounts to the moral requirement that managers should visibly act in accordance with ethical expectations.
- (iv) Feasibility refers to whether an organization creates working conditions that facilitate enabling employees to comply with accepted norms. If employees have little or no scope to realize their tasks and responsibilities, the risk of unethical conduct increases. Unethical conduct occurs when employees are lack of sufficient time, resources, information, and authority to fulfil their responsibilities.
- (v) Supportability denotes the extent to which employees are motivated to behave in accordance with their organization's ethical standards. Demotivated and dissatisfied staff is more likely to behave unethically. Employees who feel that they are not taken seriously or are not treated fairly might try to balance the scales of justice by deliberately causing damage to the organization.
- (vi) Transparency focuses on whether employees know the consequences of unethical behaviour and rewards for ethical behaviour. Employees can only be held responsible if they know the consequences of their actions. Employees who are hardly aware of the nature or seriousness of the consequences of their conduct are deprived of the opportunity to account for, modify or alter their conduct. This can lead to a situation where employees only focus on the action without regard for its consequences.
- (vii) Discussability concerns opportunities for employees to raise, discuss, and correct ethical issues and moral dilemmas at work. Unethical conducts by employees are caused by an organizational culture with a low level of discussability or debatability. In

such a closed culture, criticism is neither encouraged nor accepted. People close their ears and eyes to what they do not want to hear or see. If employees are expected to report, their work environment should be a secure place where moral issues can be raised without fear of being victimized.

- (viii) Sanctionability refers to the likelihood of employees being punished for behaving unethically and rewarded for behaving ethically. When managers fail to punish employees for engaging in unethical behaviour, the employees will think that unethical behaviour is acceptable or tolerable. Sanctions should be imposed not just for the sake of the perpetrator and victim, but also for the benefit of onlookers.

Scales

Based on Kaptein's model we used 58 scales and coded as follows:

Coding

Clarity (CL)

CL1: Clear instructions on conduct towards others in the organization

CL2: Clear instructions on obtaining proper authorization

CL3: Clear instructions on usage of company equipment.

CL4: Clear instructions on utilizing working hours.

CL5: Clear instruction on handling money and other financial assets.

CL6: Clear instructions on dealing with conflict of interest and side line activities.

CL7: Clear instructions on dealing with confidential information

CL8: Clear instructions on dealing with external persons and organizations

CL9: Clear instructions on dealing with environmental issues

CL10: Immediate environment provide clear instructions on conduct themselves

Congruence of Supervisor (CS)

CS1: Supervisor should set good example for ethical behaviour

CS2: Clear communication of importance of ethics should be given by supervisor

CS3: Supervisor should never authorize unethical or illegal conduct to meet business goals

CS4: Supervisor should do what he says

CS5: Supervisor should fulfil his responsibilities

CS6: Supervisor should be honest and reliable

Congruence of Board and Management (CM)

CM1: Conduct of board and top management should reflect shared set of norms and values

CM2: Board and top management should set a good example on ethical behaviour

CM3: Board and top management should communicate importance of ethics clearly.

CM4: Board and top management should never authorize unethical or illegal conduct to meet business goals

Feasibility

FC1: Employees should never be asked to do things that conflict with their conscience.

FC2: Employees should never be asked to sacrifice personal norms and values for the success of the organization

FC3: Employees should be given sufficient time to carry out their task responsibly.

FC4: Employees should be given sufficient information to carry out their task responsibly

FC5: Employees should be given adequate resources to carry out their task responsibly

FC6: Employees should never be put under pressure to break the rules.

Supportability

SP1: Everyone in the immediate working environment should be totally committed to the norms and value of the organization

SP2: There should be an atmosphere of mutual trust in the immediate working environment

SP3: Everyone in the immediate working environment should have the best interest of the organization in their heart.

SP4: There should be a mutual relationship of trust between employees and management in the immediate working environment.

SP5: Everyone in the immediate working environment should take the norms and standards seriously

SP6: Everyone in the immediate working environment should treat one another with respect.

Transparency (TR)

TR1: Manager should be able to find out if something not permitted is done by someone

TR2: Colleague should be able to find out if something not permitted is done by someone.

TR3: Someone should be able to find out if something not permitted is done by Manager.

TR4: If someone criticizes the others' action, there should be a response for that criticism

TR5: In the immediate working environment, there should be an awareness of potential violations and incidents

TR6: In the immediate working environment, there should be adequate checks to detect violations and unethical conduct

TR7: There should be a way to be aware by the management of the type of incidents and unethical conduct occurred in the immediate working environment

Discussability (DS)

DS1: Reports of unethical conduct should be handled with caution in the immediate working environment

DS2: Employees should be given an opportunity to express their opinion in the immediate working environment

DS3: There should be an adequate scope for the employees to discuss unethical conduct in the immediate working environment.

DS4: Reports of unethical conduct should be taken seriously in the immediate working environment

DS5: There should be an adequate scope for the employees to discuss moral dilemmas in the immediate working environment

DS6: There should be an adequate scope for the employees to report unethical conduct in the immediate working environment

DS7: There should be an ample opportunity for the employees to discuss moral dilemmas in the immediate working environment

DS8: There should be a respectful manner in calling to account for the conduct of employees

DS9: There should be an adequate scope to correct unethical conduct in the immediate working environment

DS10: There should be an opportunity to raise the matter elsewhere in the organization, if unethical matter reported does not receive adequate attention by the immediate working environment

Sanctionability (SA)

SA1: Employees should be accountable for their action in their immediate working environment

SA2: Ethical conduct should be valued highly in the immediate working environment

SA3: Only people with integrity should be considered for promotion in the immediate working environment

SA4: Managers should be disciplined if he behaves unethically, if necessary

SA5: The people that are successful should stick to the norms and standards of the organization.

SA6: Ethical conduct is rewarded in the immediate working environment

SA7: Employees should be disciplined if they behave unethically in the immediate working environment

SA8: Those involved in unethical conduct should be disciplined regardless of their position , if it is reported to the management.

SA9: Employees with integrity should be given a greater chance to receive positive performance appraisal than employees without integrity

Analysis and Results

A questionnaire was prepared based on the above scales and distributed among 50 employees of a leading private bank and out of them 40 were responded. This analysis is done based on the data collected from those 40 participants. A five point Lickert Scale ranging from (1) strongly disagree to (5) strongly Agree was used. Churchill (1979) and Parasuraman (1988) suggest that the validation of an instrument begins with Cronbach's Alpha coefficient Analysis. Therefore I have used the Cronbach's Alpha coefficient Analysis in measuring the Reliability As given in the table 1 The Cronbach's Alpha Value for the 58 items was .953. As the correlation of all the items are above.3, there was no item to be deleted.

Table1 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.946	.953	58

As the next step we used the Varimax rotation method to identify whether there are any item highly correlated to each other. The following table 2 depict that certain items are highly correlated to each other as highlighted.

Table 2 : Rotated Component Matrix^a

	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CL4	.843													
CL3	.832													
CL9	.798													
CL7	.710													
SA1	.686													
TR6	.641				.471									
CM4	.512													
CL5	.508													
SA6	.500													
CS4		.843												
CS5		.798												
CS1		.777												
CS6		.740												
CS2		.729												
DS3			.834											
TR7			.817											
DS2			.773											
DS1			.642		.463									
DS6			.640											
DS8			.574											
SP2				.782										
SP3				.738										
SP1				.723										
SP5				.709										
SP6				.701										
SP4				.700										
CM2					.716									
DS4					.684									
CM3					.653									
SA8					.582									

CM1				.564								
TR2					.933							
TR1					.933							
TR3					.908							
DS9			.538		.642							
FC3					.500							
FC2						.819						
SA3	.478					.587						
SA5	.469					.585						
SA9		.539				.566						
SA4						.496						
FC4							.797					
FC1							.757					
FC6							.643					
FC5		.461					.535					
CL6							.871					
CL10							.840					
CL1							.764					
CL8							.525	.478				
CS3							.736					
CL2							.558					
SA2							.510	.489				
DS5			.487					.602				
DS7			.496					.592				
TR4									.862			
TR5									.606			
DS10										.833		
SA7	.594											.635

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 22 iterations.

Using the Varimax rotation method 12 items as highlighted in the table 2, have been identified as highly correlated to each other and these items have been deleted. They are CL8,FS5,TR6,DS1,DS5,DS7,DS9,SA2,SA3,SA5,SA7,SA9. Although 12 indicators are deleted there is no necessity to reduce the number of dimensions at this stage, as factor analysis itself has given 14 components which is far more than 8 dimensions given in our construct. After eliminating above 12 items reliability and validity were tested for eight factors. The reliability statistics of the data set was ensured with a Cronbach's Alpha value of more than .7, the reliability of the instrument was ensured in terms of consistency. Next step was to examine whether the deletion of any items could improve the Cronbach's Alpha value.

When ensuring construct validity Exploratory Factor Analysis with Principal Component Analysis should be carried out. To examine whether items in the scale measures the theoretical construct (Ethical Organization Culture) convergent and discriminant validity have to be ensured. If an item loads significantly $<.7$ on the factor, it is measuring the convergent validity is prevalent and if it ensures that no other items are measured by the concept discriminant validity could be established.

Reliability and validity of each factor is as follows

Factor 1: Clarity

Table 3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.845	.840	9

Table 4: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CL1	35.80	13.856	.494	.550	.836
CL2	35.45	15.228	.397	.344	.844
CL3	35.75	12.397	.770	.681	.805
CL4	35.85	11.721	.804	.706	.799
CL5	35.58	13.071	.630	.541	.822
CL6	35.65	14.746	.407	.427	.843
CL7	35.50	14.513	.410	.435	.844
CL9	36.45	11.279	.689	.652	.818
CL10	35.58	14.815	.457	.384	.840

The Cronbach's Alpha value for the 9 items included in factor 1 was .840. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity.

Factor 2: Supervisor Congruence

Table 5: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.885	6

Table 6: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CS1	22.17	7.122	.817	.814	.855
CS2	22.23	7.051	.727	.768	.867
CS3	21.75	9.064	.360	.334	.912
CS4	22.38	6.087	.808	.702	.856
CS5	22.28	6.666	.765	.737	.861
CS6	22.08	6.789	.789	.767	.857

The Cronbach's Alpha value for the 6 items included in factor 2 was .885. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity

Factor 3: Manager Congruence

Table 7: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.819	4

Table 8: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CM1	13.35	2.233	.720	.573	.731
CM2	13.13	2.420	.690	.548	.749
CM3	13.20	2.318	.709	.512	.738
CM4	12.98	2.692	.456	.223	.853

The Cronbach's Alpha value for 4 items included in factor 3 was .819. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity

Factor 4: Feasibility

Table 9: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.763	.783	5

Table 10: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
FC1	14.70	11.497	.774	.621	.642
FC2	15.60	11.221	.434	.269	.780
FC3	15.28	13.384	.470	.307	.740
FC4	15.00	12.308	.630	.523	.690
FC6	14.63	13.163	.454	.389	.745

The Cronbach's Alpha value for 5 items included in factor 4 was .783. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity

Factor 5: Supportability

Table 11: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.912	.913	6

Table 12: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SP1	19.48	13.640	.766	.633	.895
SP2	19.30	14.677	.747	.606	.897
SP3	19.70	13.856	.775	.749	.893
SP4	19.45	14.767	.736	.703	.899
SP5	19.48	14.307	.739	.592	.898
SP6	19.35	14.541	.770	.618	.894

The Cronbach's Alpha value for 6 items included in factor 5 was .913. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity

Factor 6: Discussability**Table 13: Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.765	.838	6

Table 14: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DS2	20.68	8.276	.586	.710	.717
DS3	20.80	7.651	.721	.834	.682
DS4	20.48	8.512	.554	.499	.726
DS6	20.78	7.615	.720	.645	.682
DS8	20.75	8.192	.693	.584	.700
DS10	21.78	7.615	.722	.637	.884

The Cronbach's Alpha value for 6 items included in factor 6 was .838. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity

Factor 7: Sanctionability**Table 15: Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.742	.762	4

Table 16: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SA1	11.77	5.307	.607	.406	.665
SA4	11.93	5.558	.514	.322	.704
SA6	12.60	4.041	.528	.347	.707
SA8	12.30	4.164	.585	.418	.656

The Cronbach's Alpha value for 4 items included in factor 7 was .762. There was no item to be deleted and the values in the column labelled corrected item correlation are above .3. All items had strong loading on the construct, they were supposed to measure indicating unidimensionality and construct validity.

Factor 8: Transparency

Table 17: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.600	.638	6

Table 18: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TR1	18.90	7.015	.478	.828	.502
TR2	18.90	6.554	.572	.830	.459
TR3	19.02	6.589	.599	.756	.453
TR4	20.07	7.610	.211	.213	.610
TR5	19.40	8.041	.081	.181	.677
TR7	18.95	7.792	.234	.096	.595

Out of the 8 dimensions Cronbach Alpha of 7 dimensions are higher than .7 except in the case of "Transparency" which gives a value of .6. Therefore we have to look at the factor values given in the following table to eliminate the highest value. But in this case eliminating one value will not

give Cronbach value above .7, because the highest value given in the table is .677 (TR5.) Therefore we have to eliminate two items to get a Cronbach value higher than .7. So we have to eliminate the next higher loaded value also, that is .610 (TR4)

Table 19: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TR1	18.90	7.015	.478	.828	.502
TR2	18.90	6.554	.572	.830	.459
TR3	19.02	6.589	.599	.756	.453
TR4	20.07	7.610	.211	.213	.610
TR5	19.40	8.041	.081	.181	.677
TR7	18.95	7.792	.234	.096	.595

After eliminating those two values we get a Cronbach Alpha higher than .7 as given in the following table

Transparency

Table 20: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.794	.802	4

Since new Cronbach alpha is above .7 reliability (internal consistency) of all the dimensions are assured.

Convergent Validity

This can be tested by using KMO and Bartlett's Tests. If KMO is $> .5$ and Bartlett's is $< .05$ we can accept the validity. Let us look at the following table which gives test results.

Table 21: Convergent validity of each dimension

Dimension	Kaiser-Meyer-Olkin Measure	Bartlett's Test of Sphericity
Calrity	.775	.000
Suoervisor Congruence	.679	.000
Manager Congruence	.775	.000
Feasibility	.745	.000
Supportability	.850	.000
Transparency	.751	.000
Discussability	.751	.000
Sanctionability	.687	.000

As KMO of all dimensions are above .5 and Bartlett's are less than .05 the validity is assured

Composite Reliability (CR)

The Composite Reliability indicates the reliability and internal consistency of a latent construct. A value of $CR > 0.6$ (Fornell & Larker, 1981) is required in order to achieve composite reliability for a construct. Now we can calculate the composite reliability for each dimension based on the factor loading using the following formula

$$CR = \frac{(\sum fl)^2}{(\sum fl)^2 + \sum me}$$

Table 22: Composite Reliability of each dimension

Dimension	$(\sum fl)^2$	$\sum me$	$(\sum fl)^2 + \sum me$	CR
Clarity	35.2955	4.904	40.200	0.878
Supervisor Congruence	22.6766	2.089	24.765	0.916
Manager Congruence	10.3234	1.383	11.706	0.882
Feasibility	13.3079	2.279	15.586	0.854
Supportability	25.0801	1.819	26.899	0.932
Transparency	9.523	1.255	10.778	0.884
Discussability	19.4834	2.509	21.993	0.886
Sanctionability	9.3330	1.662	10.995	0.849

As CR of all the dimensions are greater than .7, Composite Reliability is assured.

Average Variance

The Average Variance Extracted indicates the average percentage of variation explained by the measuring items for a latent construct. AVE >0.5 (Fornell & Larker, 1981) is required for every construct.

$$\text{Average Variance Extraction (AVE)} = \frac{\sum(f^2)}{\sum(f^2) + \sum me}$$

Table 23 : Average Variance of each dimension

	Clarity	Supervisor Congruence	Management Congruence	Feasibility	Support -ability	Transparency	Discuss -ability	Sanction -ability
$\sum(f^2)$	4.0956	3.9114	2.6174	2.7215	4.1809	2.7449	3.4909	2.3379
$\sum(f^2) + \sum me$	9.000	6.000	4.000	5.000	6.000	4.000	6.000	4.000
AVE	0.455	0.651	0.654	0.544	0.696	0.686	0.581	0.584

.674 .806 .808 .737 .834 .828 .762 .764

AVEs of all are greater than .5 except for clarity, therefore reliability could be assured.

Assessing Discriminant Validity

Table 24: Pearson Correlations

		Clarity	Supervis Congrue	Manage Congrue	Feasi bility	Suppor tability	Transpa rency	Discuss ability	Sanction ability
Clarity	Pearson Correlation	1	.196	.391 [*]	.243	.464 ^{**}	-.011	.230	.543 ^{**}
supeCongrue	Pearson Correlation	.196	1	.548 ^{**}	.464 ^{**}	.451 ^{**}	.206	.500 ^{**}	.418 ^{**}
ManageCongr u	Pearson Correlation	.391 [*]	.548 ^{**}	1	.402 [*]	.440 ^{**}	.199	.596 ^{**}	.769 ^{**}
Feasibility	Pearson Correlation	.243	.464 ^{**}	.402 [*]	1	.394 [*]	.119	.359 [*]	.335 [*]
Supportability	Pearson Correlation	.464 ^{**}	.451 ^{**}	.440 ^{**}	.394 [*]	1	.228	.525 ^{**}	.435 ^{**}
Transparency	Pearson Correlation	-.011	.206	.199	.119	.228	1	.462 ^{**}	.235
Discussability	Pearson Correlation	.230	.500 ^{**}	.596 ^{**}	.359 [*]	.525 ^{**}	.462 ^{**}	1	.570 ^{**}
Sanctionabilit y	Pearson Correlation	.543 ^{**}	.418 ^{**}	.769 ^{**}	.335 [*]	.435 ^{**}	.235	.570 ^{**}	1

To assess discriminant validity, Pearson Correlation has been calculated for each dimension as given in the above table and compare with the square root of AVE. As Pearson correlation values for dimensions are lower than the square root of AVE of each dimension, Discriminant Validity is assured

DISCUSSION AND CONCLUSION

The purpose of this study is to assess the validity of CEV model of Kaptein in measuring ethical organization culture in banking sector in Sri Lanka. The CEV model is used to measure eight virtues, namely; clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability and sanctionability. Eight factors were tested using data gathered in a leading bank in Sri Lanka. The result of the factorial analysis of the scales made in this study was in line with the previous findings of Kaptein. The results of this study support the validity and reliability of the eight factor CEV model of Kaptein, with some modifications to the scales. In the tested environment the number of items has been reduced by 12 items as they are highly correlated as highlighted in the table 2 and thereafter reduced by another 2 items as indicated in table 19.

In analyzing the data in a banking environment in Sri Lanka, based on the factor loading in table 2, it has been identified congruence of supervisors, congruence of managers, discussability and supportability as clearly separable and consistent constructs as given in Kaptein's model. However, in Feasibility construct two items have been grouped with transparency (FC3) and sanctionability(FC2). Clarity has been split into two groups forming a new one (CL1, CL6, CL8, CL10) separated from others. In analyzing the items in this new group, it can be seen that they are mainly concerned with human behavior in interacting with people rather than dealing with physical or monitoring aspects of a bank. While two items of Transparency have been scattered between clarity (TR6) and discussability, (TR7) another two items (TR4, TR5) have been formed into a new grouping. Three items of Sanctionability (SA1, SA6, and SA7) have been grouped with the construct of Clarity. In considering the factors mentioned above, it is worthwhile to see the possibility of having 10 factors instead of 8 factors as given in Kaptein's model.

Since this study has been made as a pilot study using only 40 participants of a particular organization in the banking sector there are certain limitations in this study. It may be worthwhile to study a larger sample of data including data from state banks to obtain a more comprehensive analysis in the entire banking sector. Further, there is an opportunity for future researchers to use more data from different type of organizations from different industries and compare them to generalize the findings

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Audit Committee Attributes and Share Price: Evidence from Banking and Finance Companies Listed on the Colombo Stock Exchange.

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Abstract

Past corporate collapses such as Enron, WorldCom, Xerox and similar others put a spotlight on the attention of corporate governance mechanism. The corporate governance mechanism is the system governing and controlling the activities of the companies. The importance of audit committees in ensuring the quality of corporate financial reporting has come under considerable scrutiny by both the academia and corporate governance regulatory bodies. The purpose of this paper is to examine the impact of Audit Committee (AC) attributes on the share price of Banking and finance sector in Sri Lanka.

The population of the study comprises firms listed under banking and finance companies listed in Colombo Stock Exchange. The number of firms listed under banking and finance sector on Colombo Stock Exchange as at the time of data collection (31st March 2018) was 72, out of which 26 firms were selected using simple random sampling method for this study. The data was collected for the period from 2011 to 2017 and obtained from the web site of Colombo Stock Exchange.

Size of the Audit Committee, Audit committee independence and Audit committee meetings are considered as independent variables of the study. The dependent variable was share price of the firm which was measured through share price. In addition to this, firm size, company age, board size was considered as control variables in this study. To test the hypothesis of this study, simple least square regression was utilized by using EViews 8 version.

The findings suggest a significant negative relationship between Size of the audit committee members, audit committee meeting and share price of banking and finance companies, while board size and company age is significant and positively related with share price. The audit committee independence is non-significant and negatively related with share price. Further the study revealed that there is negative and non-significant relationship between firm size and share price.

In this paper, the audit committee attributes that influence the share price most efficiently are identified. Due to lack of researches covering this area in Sri Lankan Banking and finance sector, this study would provide additional knowledge to future researchers and academicians.

Key words: corporate governance, audit committee, share price, banking and finance, Colombo Stock Exchange

BACKGROUND OF THE STUDY

Past corporate collapses at Enron, WorldCom, Arthur Andersen, Xerox and similar others put a spotlight on the attention of corporate governance mechanism. Following the Asian financial crisis, many emerging economies attempted to improve corporate governance to protect shareholder wealth, as poor governance was regarded as one of the main reasons for the massive decline in shareholder value during the crisis (Johnson, Boone, Breach & Friedman 2000; Mitton 2002; Lemmon and Lins 2003). Therefore many countries developed several mechanisms in order to govern the companies in an appropriate manner. The audit committee is one of the tools of such mechanisms to ensure the firm performance. Chartered Accountants in Sri Lanka (CA) has been at the forefront of issuing corporate governance principles in Sri Lanka.

The audit committee plays a key role in assisting the board to fulfill its oversight responsibilities in areas such as entity's financial reporting, internal control systems, risk management systems and the internal and external audit functions on behalf of the shareholders in order to ensure that the internal control activities are incorporating to the wealth maximization of shareholders. Therefore institute of chartered accountants of Sri Lanka, in their guidelines stated that the board of directors should require the audit committee to ensure carrying out the reviews of the process and effectiveness of risk management and internal controls, and document to the board and board takes the responsibility for the disclosures on risk management and internal controls. Under institute of chartered accountants of Sri Lanka, the board should establish an audit committee exclusively of non-executive directors with the minimum of three non-executive directors of whom at least two should be independent. If there is more non-executive directors, the majority should be independent. The committee should be chaired by an independent non-executive director. The board should satisfy itself that at least one member of the audit committee has recent and relevant experience in financial reporting and control.

Although it has been investigated by many researchers, contradictory findings are reported. At one hand, audit has significant relationship with stock prices (Al-Attar 2017), while on the other hand

it has no relationship with the stock prices of companies (Al-Thuneibat, et al., 2007). Due to such contradictory findings, it becomes the gap that whether audit exerts share prices, especially in listed banks of Colombo Stock Exchange. Therefore, there is a need to explore such influence. In this context, this study aims to find out the relationship between audit committee attributes, and its impact on the share price banking and finance companies listed on the CSE.

Through exploring such impact, this study will contribute academically in the research about Colombo stock market as well as practically for investors by highlighting the impact of the presence of audit committee, so that they would be confident about their investment decisions in Colombo stock market.

Given the above scenario, the major problem of this study is to determine whether audit committee attributes can significantly influence share price of listed banking and finance companies in Sri Lanka.

PROBLEM STATEMENT

The effect of the presence of an audit committee is a salient feature in the best practices of corporate governance. Most of the studies are concentrated on impact of audit committee attributes on firm performance (Gabriela 2016; Al-Matari, et al., 2012; Alqatamin 2018 and Amer et al., 2014). But there are a significant amount of researches conducted on impact of audit committee attributes on share price. Further different authors concluded different findings regarding the relationship between audit committee attributes and share price. For example, Yermack (1996) found that a small board size enhances firm value. Also Jensen (1993) asserted that having a small number of board members improves the efficiency of audit committee monitoring and control. On the other hand, there are some authors concluded that there is no significant relationship between board size and share price Anderson et al. (2004). Therefore by considering the different arguments found by different authors, the researcher has developed the statement, as follows, “To what extent audit committee attributes impact on share price”.

OBJECTIVES OF THE STUDY

The following can be mentioned as the objective of this study.

- To find out the impact of audit committee attributes on the share price of the banking and finance companies in Sri Lanka.

SIGNIFICANCE OF THE STUDY

For companies, in order to comply with governance rule of the companies, well establishment and appropriate operations of audit committee is important. In such way, the importance of this study stems from the following points:

- Stakeholders can be able to know whether the selected companies are adopting an effective internal control mechanisms.
- This study provides an evidence of whether or not the audit committee attributes affects the share price of the Listed Banking and Finance companies in Sri Lanka.

LITERATURE REVIEW

Empirical Study on Audit Committee Attributes on Share Price.

Using 105 New Zealand listed companies over a three year period, Rani (2011) conducted a research to find out the effects of audit committee characteristics on the value relevance of accounting information. In that study researcher found that there is no positive effect of audit committee expertise on the value relevance of accounting earnings. The study used primary variables as audit committee financial literacy and audit committee independence to answer the research question - what is the effect of audit committee expertise on the value relevance of accounting earnings. Value relevance is measured by regressing stock prices on earning and book values.

Focusing on a sample of 30 listed firms in Nigeria over a three year period, Uwuigbe & Olubukunola (2013) carried out a research to find out the association between corporate governance and share price. They revealed that ownership structure have a negative association with share price, whereas the audit committee is positively related to share price. And also the researchers recommended that board members' shareholding should be regulated to ensure an optimal share price disposition. Researchers focusing on global financial crisis also examine the relationship between Audit committee characteristics and firm performance during the global financial crisis. Example of this is Aldamen, et al. (2012) who, focusing on a total of 150 firms listed on the S&P300 during the period of the global financial crisis 2008-2009, show that smaller audit committees with more experience and financial expertise are more likely to be associated with positive firm performance in the market. They also find that longer serving chairs of audit committees negatively impacts accounting performance. The researchers used share price as the proxy for firm performances.

Ida & Asunka (2016), using a sample of 36 trading stocks on the Ghana Stock Exchange for the financial year of 2015, conducted a research to examine the effect of audit committees on the performance of firms listed on the Ghana stock exchange. They revealed that there is a relationship between the characteristics of the audit committees and the performance of the firms. Meanwhile, the number of independent members on the audit committee had no influence on the performance of the firms. However, the number of independent members of the audit committee with finance or accounting degrees impacted negatively on the firm's performance. And also they recommended that the corporate governance discussions should be re-focused from independence to more experienced and financial literate members on the audit committees and also a relatively longer tenure should be accorded the chairman of the audit committee of firms to enhance firm performance. Researchers measured firm performance using share price.

Okolie, & Izedonmi (2014), use a sample of 57 companies quoted on the Nigerian Stock Exchange over a period of six years carried out a study to find out the Impact of Audit Quality on the Share Prices of Quoted Companies in Nigeria and revealed that Audit Quality exerts significant influence on the Market Price per Share (MPS) of quoted companies in Nigeria.

Prior studies (Burgstahler & Dichev, 1997) focus directly on income smoothing, and find that firms manage earnings to meet analyst expectations and avoid losses and earnings decreases. Benefits from smoothed earnings include a perception of lower risk and a consequent reduced cost of capital, and by extension a high market price perception. Evidently, a variety of earnings management definitions exist but in the context of this study, earnings management defines the planning and execution of certain activities aimed at manipulating and smoothening income and achieving high earnings with a view to influencing the company's stock price (Revsine, 1991).

Based on a sample of 342 companies over a six year period from the Nigerian Stock Exchange, Okolie (2014) conducted a research to examine the association between Audit Firm Size and Market Price Per Share of Quoted Companies in Nigeria and stated that audit firm size exerts significant relationship and significantly influences market price per share of the companies in the sample. Further the researcher suggested that companies in Nigeria should improve their earnings quality only through sales growth and cost control strategies and present distinct reports on earnings quality. Furthermore, company auditors should issue Integrated Audit Quality Assurance Reports based on earnings quality assessment, statutorily backed by earnings monitoring of

companies in Nigeria while regulatory agencies should issue authoritative codes of best practice in Nigeria.

The evidence for audit committee attributes impact on share price is very rare. Researchers focused more on topics related the audit committee attributes and firm performance, and audit committee attributes and earnings management. For example Kankanamge (2016) examine the impact of audit committee characteristics on earnings management in Sri Lanka during the period from 2013-2015 using sample of 150 listed firms in Sri Lanka from 2012-2015. Audit committee size, audit committee independence, audit committee meetings and audit committee financial expertise used in this study as audit committee characteristics. Regression results showed a strong negative relationship between audit committee characteristics and earnings management in Sri Lankan listed firms.

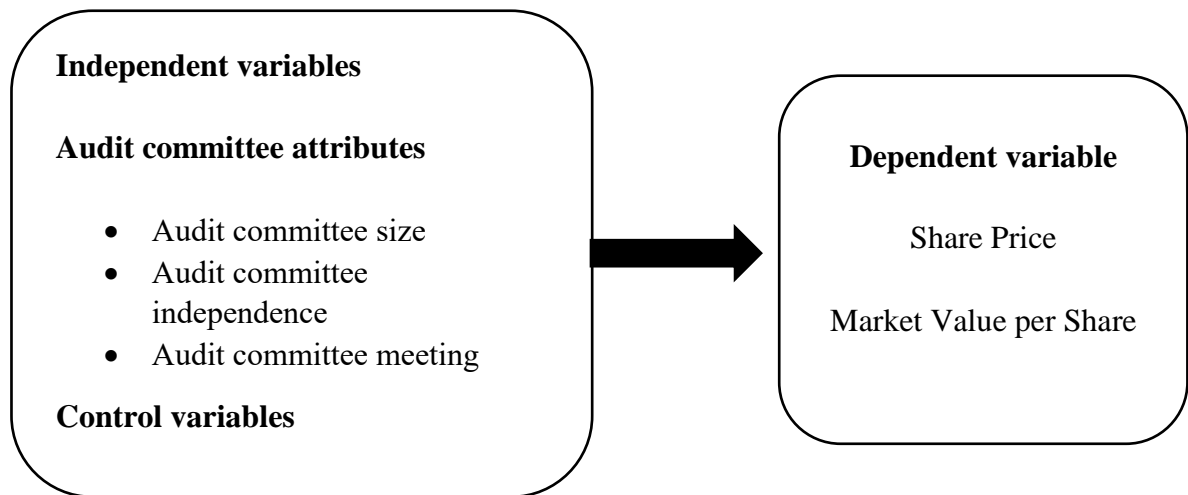
Balagobei (2018) examine the impact of audit committee on value relevance of accounting information of listed hotels and travels in Sri Lanka using the sample consists of 15 hotels and travels listed in Colombo Stock Exchange. Value relevance of accounting information is measured by earning per share (EPS) and book value per share (BVPS) while Audit committee consists of audit committee size, audit committee independence, audit committee experts and audit committee meetings. The results reveal that audit committee attributes such as audit committee size, audit committee experts and audit committee meetings have a significant impact on book value per share of listed hotels and travels in Sri Lanka. Further only audit committee experts influence earnings per share. Audit committee independence is not found to have a significant impact on the value relevance of accounting information.

Although the benefits of auditing are uncontroversial in developed markets, there is scant evidence about its effect in emerging economies. Auditing derives its value by increasing the credibility of financial statements, which in turn increases investors' reliance on them in developed markets. Chen, Srinidhi, & Su(2014) carried out a research to find out the effect of evidence using the evidence from variability of stock returns and trading volume and he suggested that investors rely more on audited financial information. The opinions from auditors of financial statements published by the companies, is significant on the volatility of the company's share prices. Hoti et al. (2012) conducted a research using Slovenian and Croatian public interest entities, with the aim to determine the effects of stock prices following the announcement of audited financial reports. The results show that the audit quality, the auditor's opinion have an impact on the evolution of

stock prices. In contrast, overall, this analysis shows that the audit reports investigated have information content for investment decisions. In particular, the qualifications expressed in the audit report have a negative effect on stock prices. It is also shown that an unqualified opinion with an emphasis of matter paragraph regarding going concern uncertainty or financial distress has a positive effect on stock prices.

CONCEPTUAL FRAME WORK.

After the careful study of review of literature the following conceptual model is developed by the researcher.



Source: developed by researcher

In the above model variables audit committee attributes are considered as independent variable and share price is considered as dependent variable.

Definitions of variables

Table 1: Variable Definitions.

Variables	Acronyms	Measures
Dependent variable		
Share price	SP	Obtained directly from CSE at www.cse.lk
Independent Variable		

Audit committee size	AUSIZ	This was measured through number of members of audit committee elected by board of directors.
Audit committee independence	AIND	Measured by using number of independent directors in the audit committee
Audit meetings	AMEE	This variable measured through the number of annual meetings the committee holds.
Control variables		
Board size	BSIZ	This was measured through number of members held the position of board elected by shareholders.
Company age	CAGE	Measured using company's established year.
Firm size	FSIZ	Natural Logarithm of total assets was used to measure the firm size.

HYPOTHESIS OF THE STUDY

Based on theory, previous studies and the research model outlined, this study has formulated the following hypotheses to examine the relationship between variables.

Hypothesis 1: Audit committee attributes significantly impact on share price.

The above hypothesis is further sub divided as follows:

Hypothesis 1a: Audit committee size significantly impact on share price.

Hypothesis 1b: Audit committee independence significantly impact on share price.

Hypothesis 1c: Audit committee meetings significantly impact on share price.

RESEARCH DESIGN

Data Collection and Sampling

This study utilizes the listed companies in Sri Lanka as its population. As the sampling methods differ in the type of study to be conducted, the research technique applied to get the sample of this study is the simple random sampling. This is where the selected 26 firms are the subset of the total 72 firms in the industry in which each firm of the subset has an equal probability of being chosen. A simple random sample is meant to be an unbiased representation of a group. Banking & finance sector was chosen because it is one of the largest sectors of Sri Lanka in term of number of companies. The sample size of the study is 26 companies out of 72 randomly selected from Banking & Finance companies listed in Colombo Stock Exchange. After computing variables as defined in Table 1 and screening, the paper end up with a panel of 181 firm year observations on 26 companies over the period 2011-2017 for this empirical study. The panel has an unbalanced structure. The research is based on secondary data. Audit committee attributes and share price were collected from annual reports, Handbook of Listed Companies and CSE official website. Data analysis is done with the help of software packages E views.

METHODOLOGY

To examine the extent to which audit committee attributes affects share price, we estimate following panel data regression model that links audit committee attributes with share price:

$$SP_{it} = \beta_0 + \beta_1 \text{AUSIZ}_{it} + \beta_2 \text{AIND}_{it} + \beta_3 \text{AMEE}_{it} + \beta_4 \text{BSIZ}_{it} + \beta_5 \text{CAGE}_{it} + \beta_6 \text{FSIZ}_{it} + \varepsilon_{it} \quad (1)$$

Where SP- Share price

AUSIZ- Audit committee size

AIND- Audit committee independence

AMEE- Audit meetings

BSIZ- Board size

CAGE- Company age

FSIZ- Firm size

ε – Error

i - Firms

t - Years

EMPIRICAL RESULTS

Descriptive Statistics

Descriptive statistics are useful to make general observations about the data collected. They report on the trends and patterns of data and provide the basis for comparisons between variables.

Table 2 presents descriptive statistics for the variables used in the analysis for our pooled sample. The pooled mean (median) Share Price is 170.4543 (63.20000), respectively. The average of Audit committee is 3.807692 (the median is 3.000000). The average of auditor independence is 2.747253 (the median is 2.000000). The average of audit meeting is 8.558011 (the median 8.000000). With respect to the control variables included in our model, the average board size of the firms is given by 9.285714 (9.000000). The average (median) company age is 29.34615 years (29 years). Finally the average size of the sample firms measured by total assets is about 1.25E+11 (3.04E+10) billion LKR.

These summary statistics indicate that the sample used in this study is comparable to those used in prior research in the context of Sri Lanka.

Table 2. Summary statistics

Variables	Obs	Mean	Median	Std.Dev	Min	Max
SP	182	170.4543	63.20000	293.0469	0.000000	1597.000
AUSIZ	182	3.807692	3.000000	1.391111	2.000000	8.000000
AIND	182	2.747253	2.000000	1.137929	0.000000	6.000000
AMEE	181	8.558011	8.000000	4.946739	1.000000	33.00000
BSIZ	182	9.285714	9.000000	2.758355	5.000000	16.00000
CAGE	182	29.34615	29.00000	16.51438	2.000000	66.00000
FSIZ	182	1.25E+11	3.04E+10	2.16E+11	3.79E+08	1.14E+12

Notes: This table reports summary statistics of the variables used in the study.

Correlation analysis

Table 3 reports the Pearson correlation coefficients between variables. To find out the relationship among variables correlation analysis was carried out. Audit committee size (AUSIZ) and audit committee meetings (AMEET) show a negative and statistically significant correlation with value of the firm measured by share price of the companies. This result is consistent with our hypothesis 1. Audit committee independence (AIND) shows a negative and insignificant correlation with value of the firm. This result is inconsistent with our hypothesis 2. However, confounding factors may be behind such opposite association; as we discussed in the methodology, we address this issue in the regression analysis that follows in the next section.

Turning to control variables, board size (BSIZ), company age (CAGE) have a significant impact on share price. But firm size (FSIZ) is insignificantly related to the share price.

Furthermore, Table 3 suggests that given that the observed correlation coefficients between independent variables are relatively low, multicollinearity should not be a serious problem in our study.

Table 3: correlation analysis

	AUSIZ	AIND	AMEET	BSIZ	CAGE	FSIZ	SP
AUSIZ	1.000000						
AIND	0.431481	1.000000					
AMEET	0.120854	0.200481	1.000000				
BSIZ	0.436275	0.398128	0.176499	1.000000			
CAGE	-0.156699	0.075603	0.000229	-0.170388	1.000000		
FSIZ	0.408621	0.420187	0.184959	0.298327	0.260352	1.000000	
SP	-0.245286	-0.145311	-0.151579	0.203644	0.246423	0.007045	1.000000

Regression Analysis

Table 4 demonstrates the findings of the regression analysis. The model expresses the effect of independent variable (audit committee size, audit committee independence and audit meetings) on share price.

Table 4: relationship between audit committee attributes and share price

Dependent Variable: Share price

Method: Least Squares

Sample: 1 182

Included observations: 181

Variable	coefficient	Std error	t-statistic	prob
AUSIZ	-67.69197	21.99727	-3.077289	0.0024
AIND	-19.16792	26.05431	-0.735691	0.4629
AMEET	-10.51004	3.965450	-2.650403	0.0088
BSIZ	48.36143	7.959221	6.076151	0.0000
CAGE	4.999493	1.310680	3.814428	0.0002
FSIZ	-8.75E-12	1.06E-10	-0.082670	0.9342
R-squared	0.278071	Mean dependent var	170.4569	
Adjusted R-squared	0.253176	S.D. dependent var	293.8598	
S.E. of regression	253.9506	Akaike info criterion	13.95006	
Sum squared resid	11221414	Schwarz criterion	14.07376	
Log likelihood	-1255.481	Hannan-Quinn criter.	14.00021	
F-statistic	11.17013	Durbin-Watson stat	0.812545	
Prob(F-statistic)	0.000000			

The above Table shows the estimated result of the model. R square shows that the model explained 27.8071 % of total variations of the dependent variable. It means that 27.8071 % of the changes in dependent variable are described by both independent and control variables. As a point of focus, the hypotheses of this study states that the audit committee attributes significantly impact on share price of banking and finance companies listed on CSE.

As observed, the results show that audit committee size has a coefficient of -67.69197 with t statistics of -3.077289 and with a p value of 0.0024. Thus, from the results, it can be stated that there is significant impact of audit committee size on share price. Audit meeting has a coefficient of -10.51004, with t-statistics of -2.650403 and a p value of 0.0088. Audit meeting has significant impact on share price. Auditor independent has a coefficient of -19.16792 with t statistics of -0.735691 and with a p value of 0.4629. Auditor independence has not significant impact on share price. Board size and company age also significantly impact on the share price. The firm size shows that there is no significant impact on share price, thus has the p value of 0.9342. The results show that the F-statistics indicates the value of 0.000000. Which indicates that the model perfectly fits the study. Durbin Watson test is a test used to detect auto correlation. From the Table 4 Durbin Watson stat value is 0.812545. This value less than 3 indicating that there is no auto correlation issues.

CONCLUSIONS

The audit committee specially provides the control mechanism for the companies in order to ensure that the share holders' funds are appropriately utilized with in the firm. Control in the sense the published financial statements are free from material errors. Investors therefore value the audit report as a means of improving financial information reported by companies. This study provides evidence of the relationship among audit committee size, audit committee independence, audit committee meetings and the impact on share price for Sri Lankan banking and finance companies listed in CSE. The relationship between audit committee attributes and share price of Sri Lankan banking and finance sector companies, using least squares method. The study uses 181 firm year observations over the period 2011-2017.

The study documents a negative relationship between audit committee size and share price. This implies that the increase in audit committee members will cause a reduction in the share price. In some cases, if the members in a committee is large, this also can lead to conflicts within the committee. The different perspectives of the members can lead to inefficiency of the work carried out by the auditors. This result has supported previous research carried out by yermack (1996) and Jensen (1993)

Further auditor independent does not have a significant impact on the share price. This result has supported previous research carried out by Balagobei (2018), Rani (2011), Uwuigbe & Olubukunola (2013), which is not an expected result. Conversely, when entered into the regression with interaction of share price, it has negative coefficients, which are contradicting the value

relevance concept by implying that independence does not affect value relevance of accounting information.

Also audit meeting has negative relationship with share price. If the audit meetings get increase then, it will negatively affect the share price, which means the share price will get reduce. According to the corporate governance requirements, audit committee should meet four times in a year. But increase in the number of meetings can increase the work load of preparation for meeting and inefficiency of meetings can lead to a negative impact on share price. This result has supported previous research carried out by Elijah and Ayemere (2015).

In general, one of the important governance mechanisms, namely audit committee attributes, in particular, our study also provides new insights into the future directions of corporate governance reforms in Sri Lanka. Finally, in this study, we rely on quantitative and secondary data to test our hypothesis; but future research, using qualitative research methods such as questionnaire based survey or interview, could be conducted in order to complement our study.

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Corporate governance and Financing Decisions: Evidence from listed Manufacturing Companies in Sri Lanka

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Abstract

The financing decision of the organization is one of the most debated arenas of the corporate finance theory. According to the agency theory, the financing decision will contribute to solving interest conflicts between shareholders and managers. The financing decision is the way of choosing a firm's financing resources, namely choosing both the available resources and their mix in order to achieve the objective of maximization of shareholders' wealth. The aim of this study is to examine the impact of corporate governance mechanisms on financing decisions of listed manufacturing companies in Sri Lanka during the period of 2012 to 2016. The sample consists of 26 listed manufacturing companies in Sri Lanka. In this study, data was collected from secondary data sources and hypotheses are examined by using multiple regression analysis. The results reveal that board size has a significant impact on financing decisions of listed manufacturing companies in Sri Lanka. Other corporate governance variables are not found to have a significant impact on financing decisions. The firms should increase their board size for accessing more debt capital as large board size puts pressure on managers through stringent monitoring and regulatory mechanism to increase the value of the firm. However beyond a certain level, further increase in board size could lead to adverse effects.

Keywords: Corporate governance, financing decisions, Agency theory, Board size

INTRODUCTION

Corporate Governance and financing decision plays a vital role in the maximization of shareholders' wealth. Good corporate governance is an important in increasing the market value of a firm while higher financial leverage decreases a firm value by increasing bankruptcy risk (Sheifer and Vishny, 1997). Corporate governance (CG) has been mostly applicable in developed markets and essentially to large and listed firms. In recent times, however, the term is on the development agenda of many developing countries, the reason being the realization that corporate governance is important for the promotion of sustained growth as it boosts the bottom line (Anthony and Nicholas (2006). The corporate governance has two meanings. It refers to the relationship between a firm and its stakeholders including shareholders, employees, creditors, competitors, consumers etc. In the second definition, corporate governance is seen as signifying

the mechanism for checking on and monitoring the behaviour of top management, due to the separation of ownership and control. Thus, corporate governance refers to the clear establishment of how an organization ought to be run and controlled and ensure accountability on the part of management towards owners. Studies have shown that corporate governance enhances performance (Gompers et al., 2003; Claessens et al., 2003).

An important financing decision facing firms is the choice between debt and equity capital (Glen and Pinto, 1994). The capital structure of a firm is a mix of debt and equity the firm uses to finance its operations. Capital structure decisions are crucial for any business organisation. The decision is important because of the need to maximise returns to various organisational constituencies and also because of the impact such a decision has on an organisation's ability to deal with its competitive environment (Abor and Biekpe, 2005). The key of the firm is to choose a portfolio of capital structure that will maintain sustainability and generate more wealth. In general, a firm can choose among many alternative capital structures. It can issue a large amount of debt or very little debt. It can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. In an attempt to set a capital structure that maximises overall market value, firms do differ in the way they deal with the issue of optimising capital structure requirements. Corporate governance refers to how companies ought to be run, directed and controlled. It is about supervising and holding to account those who direct and control the management. It is believed that, good governance generates investor goodwill and confidence. Gompers et al. (2003) assert that, good corporate governance increases valuations and boosts the bottom line. Claessens et al. (2002) also maintain that better corporate frameworks benefit firms through greater access to financing, lower cost of capital, better performance and more favourable treatment of all stakeholders.

Corporate governance has been identified in previous studies to influence firms' financing or capital structure decisions which also affect performance (Berger et al., 1997; Friend and Lang, 1988). These empirical studies tended to focus mainly on developed economies with inconclusive results. Very little, however, has been done on corporate governance in Sri Lanka, especially with respect to firms' financing decisions. It is crucial to determine how current issues in corporate governance affect the financing decisions of Sri Lankan firms. This paper specifically examines the impact of various variables of corporate governance on the financing decisions of firms listed manufacturing companies on the Sri Lanka during the five-year period (2012-2016).

Research problem

With sound governance structure (CS), it is much easier for organizations to obtain loans from investors as a functional corporate structure protects the interest of shareholders, increases transparency and reduces the agency conflicts. Firms with poor governance practices face more agency problems as managers of those firm's can easily obtain private benefits due to poor CG structure.

Weak corporate governance does not only lead to poor firm performance and risky financing patterns, but is also conducive to macroeconomic crises (Claessens et al., 2002). Becht et al. (2002) identify a number of reasons for the growing importance of corporate governance; including, the world-wide wave of privatization of the past two decades, the pension fund reform and the growth of private savings, the takeover wave of the 1980s, the deregulation and integration of capital markets, the 1997 East Asia Crisis, and the series of recent corporate scandals in the USA and elsewhere. Developing countries are now increasingly embracing the concept of good corporate governance, because of its ability to impact positively on sustainable growth. The dominance of large shareholders may therefore affect the financing decisions of firms. Businesses are therefore, being compelled to apply the most scientific methods to enable them compete on the global market. The will of investors to strive for excellence and the refusal to accept mediocrity have created stiff competition in the business environment. This drive for excellence and competition has led to the demand for information by stakeholders. Corporate bodies are continually being compelled to disclose relevant information to stakeholders and the communities in which they operate. They are required to be more transparent in their dealings and to justify their investments and financing decisions. A study of the characteristics of corporate governance and the financing decisions of Sri Lankan listed firms is therefore very crucial. This present study provides empirical evidence on corporate governance and firms' financing decisions from the context of a developing economy. Therefore this study consists of research question "To what extent corporate governance impacts on financing decision. The objective is to examine the impact of corporate governance on financing decisions of Sri Lankan listed manufacturing firms.

This paper is organized as follows: the next section provides an overview of empirical literature on the subject matter. The following section describes the research methodology. The penultimate section discusses the results of the analysis. Finally, the last section summarizes the study results and concludes the discussion.

LITERATURE REVIEW

Theoretical Literature

Corporate governance has been given various definitions by various authors. Metrick and Ishii (2002) define corporate governance from the perspective of the investor as “both the promise to repay a fair return on capital invested and the commitment to operate a firm efficiently given (that) investment”. This definition simply suggests that the nature of the governance structure of a firm has an impact on its ability to access capital markets.

The theoretical framework upon which CG and CS is based includes the agency theory free cash flow theory. Evidence from previous empirical studies has sought to confirm the effect of CG on firm performance and reviewed the theories.

Agency Theory: CG has traditionally been associated with the “principal-agent” or “agency” paradox. A “principal-agent” relationship arises when the person who owns a firm is not the same as the person who manages or controls it. Agency theory has its roots in economic theory and was developed by Jensen and Meckling (1976) and it states that shareholders who are the owners or principals of the company delegate the running of business to the managers or agents. The shareholders expect the agents to act and make decisions in the principal’s interest but the agents may make contrary decisions. Jensen and Meckling (1976) argued that the separation of ownership and control has resulted in an agency problem as the managers who act as agents might not always act in the best interests of the shareholders or owners, who are the principals of the firm. This might be due to the interests of both parties which are not aligned. Agency problem results in agency costs, which are the costs of the separation of ownership and control. Agency costs have been defined as the sum of the monitoring expenditures by the principal, the bonding expenditures by the agent and the residual costs.

Free Cash Flow Theory: According to free cash flow theory (Jensen, 1986), leverage itself can also act as a monitoring mechanism and thereby reduces the agency problem hence increasing firm value by reducing the agency costs of free cash flow. There are some consequences derived if a firm is employing higher leverage level in that managers of such firm will not be able to invest in non-profitable new projects, as doing so the new projects might not be able to generate cash flows to the firm, hence managers might fail in paying the fixed amount of interest on the debt or the principal when it’s due. It also might cause the inability to generate profit in a certain financial year that may result in failing to pay dividends to firm shareholders. Leverage might not only be able to reduce the agency costs of free cash flow, but also can increase the efficiency of the

managers. This is due to the debt market that might function as a more effective capital market monitoring. In addition, in order to obtain the debt financing, managers must show their abilities and efficiencies in managing the firm. Empirically, it has been proven that leverage proxied by bank lenders, can be substitute monitoring mechanism especially in weak CG firms, but not in the more active merger environments.

Empirical Literature

There have been some studies that link corporate governance and financing decisions of firms. For instance Berger et al. (1997), Friend & Lang (1988), Wen et al. (2002), and Abor (2006), show that the nature of corporate governance in a firm has an influence on its financing decisions. The main corporate governance characteristics that have been identified to impact on financing decisions of firms include board size, board composition, CEO duality, tenure of the CEO, and the CEO's compensation. The empirical literature on governance and capital structure so far, though scanty, show varied results and appear largely inconclusive.

The board of any corporate entity is the highest decision making body entrusted with the responsibility of ensuring that the firm operates efficiently and competitively. The board size measured by the number of people that constitutes the board has a significant relationship with the financing decision of a firm according to Pfeffer & Selancick (1978), and Lipton & Lorsch (1992). Berger et al. (1997) show that firms with larger board sizes tend to have low leverage or concentrate rather on equity financing. The underlying principle is that a large board size inevitably translates into coercion from the board on managers to rather depend on less debt to enhance firm performance. A critical issue raised by Jensen (1986), however, is that firms with high leverage or a high debt ratio have larger boards. This twist introduces an issue of causality. The question is, do firms resort to high leverage because they have larger board sizes or do firms increase board sizes because they are highly leveraged? Studies on this issue are largely non-existent. However, empirical results in China by Wen et al. (2002) and by Abor in Ghana (2006) point to a positive relationship between board size and leverage. These findings presuppose that large board sizes, that exist largely due to monitoring by regulatory bodies, target higher leverage to enhance corporate value. It could also be due to the difficulty of arriving at consensus in decision-making. Such a scenario has the tendency of weakening corporate governance leading to dependence on high leverage primarily as a disciplining mechanism for firm value maximization. Furthermore, Anderson et al. (2004) point out that the cost of debt is lower for larger boards probably due to the fact that creditors view these firms as essentially having effective monitoring on their operations.

Studies have also shown that the nature of board structure typology (CEO duality) also has a relationship with the financing decisions of a firm. In this case, studies have centered on 1-tier and 2-tier board structure typologies. A firm is said to have a 1-tier board structure if the CEO combines as the board chairperson. On the other hand, in a situation where the CEO and board chair positions are occupied by separate personalities, the firm is said to be operating a 2-tier board structure. In the one-tier board structure typology, it is deemed that the two critical issues of decision making and control are vested in the same personality, which is however thought to be inappropriate (Fama & Jensen, 1983). Again, Fama and Jensen (1983) define “decision management” as the right vested in a CEO to initiate and implement new proposals warranting expenditure of the firm’s resources, while “decision control” is the right to ratify and monitor these proposals. Hence, there exists a conflict of interest and higher agency cost if these are done by the same personality signaling the lack of separation of “decision management and decision control”. Fosberg (2004) shows that a 2-tier board structure typology is characterized by higher leverage or debt: equity ratios as compared to a 1-tier leadership scenario. Abor (2006) in a Ghanaian study however found a negative relationship between 2-tier board structure typology and leverage.

The other related characteristic of corporate governance is compensation of the CEO. CEOs with attractive fixed compensation might pursue lower leverage to reduce the financial risk and keep their job for the attractive remuneration (Stulz, 1988; Harris and Raviv, 1988). However, empirical evidence has shown contradictory findings. Jensen and Meckling (1976), and Berger et al. (1997) show positive association between CEO’s compensation and capital structure of the firm. Wen et al. (2002), Friend and Hasbrouck (1988) also find a negative relationship between fixed compensation and financial leverage.

In Sri Lankan context, Nirosha and Stuart (2012) find that Sri Lankan listed companies pursue a policy of high debt with high insider ownership and CEO duality. Non-executive directors tend to have less external financing than boards with more executive directors. In general, this study finds the issue of corporate governance has important implications on the financing decisions of Sri Lankan listed firms. Nishani and Athula (2015) investigate the influence of capital structure on firm value measured in Tobin’s Q. The study has both theoretical and practical implications. While it finds evidence to generalize the notions of the three theories employed in the study, it also reveals empirically that how corporate governance variables influence capital structure decisions and firm value in the manufacturing companies in Sri Lanka.

Siromi and Chandrapala (2017) identify that there is no significant effect of corporate governance attributes except board composition & board committee on capital structure. The variable of board

composition has a significant positive effect and board committee has a negative effect on capital structure.

Based on the literature review, the following hypotheses are developed,

H₁: Board size has a significant impact on financing decision.

H₂: Board independence has a significant impact on financing decision.

H₃: CEO duality has a significant impact on financing decision.

H₄: Board meeting has a significant impact on financing decision.

METHODOLOGY

Data and variable description

Data for the study is obtained from twenty six (26) manufacturing companies listed on the Colombo Stock Exchange (CSE) covering the five (5) year period 2012-2016. For the dependent variable, the firm's debt ratio is measured as the ratio of total debt to total assets (i.e. LEV = Leverage). For a deeper understanding of further relationships, leverage is divided into short-term leverage (STL) and long-term leverage (LTL) which are measured as the ratio of short-term debts and long-term debts to total assets respectively. Regarding the independent variables, Board size (BDS) measured by the number of board members, Board independence (BDI) measured by the ratio of independent board members to board size, CEO duality (CEO) indicates whether the company's CEO is also chairman of the board, Dummy variable equal to 0 if the two variables are separate.

Research Model

The study follows the panel model specification for the purpose of estimating the impact of corporate governance on financing decision of listed manufacturing companies in Sri Lanka. The panel data model is as follows:

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it}$$

Where Y_{it} is leverage of firm i at time t , α_i is a constant term, β_1 , β_2 , β_3 and β_4 are the beta coefficients, X_1 , X_2 , X_3 and X_4 are the explanatory variables used in the study, and ϵ_{it} is the error term. The specific models are as follows:

$$STL_{it} = \alpha_i + \beta_1 BS + \beta_2 BI + \beta_3 CEO + \beta_4 BM + \epsilon_{it} \dots \dots \dots (1)$$

$$LTL_{it} = \alpha_i + \beta_1 BS + \beta_2 BI + \beta_3 CEO + \beta_4 BM + \epsilon_{it} \dots \dots \dots (2)$$

$$LEV_{it} = \alpha_i + \beta_1 BS + \beta_2 BI + \beta_3 CEO + \beta_4 BM + \epsilon_{it} \dots \dots \dots (3)$$

Where,

STL_{it} – Short-term leverage of firm i at time t .

LTL_{it} – Long-term leverage of firm i at time t .

LEV_{it} – Total leverage of firm i at time t .

BS_{it} – Board size of firm i at time t .

BI_{it} – Board independence of firm i at time t .

CEO_{it} – CEO duality of firm i at time t .

BM_{it} – Board meeting of firm i at time t .

Choosing between random and fixed effects

The most basic estimator of panel data sets is the pooled Ordinary Least Squares (OLS). In the simplest case in which there are no firms specific and time specific effects the ordinary least square is the most appropriate. Johnston and Dinardo (1997) recall that the pooled OLS estimators ignore the panel structure of the data, treating observations as being serially uncorrelated for a given firm with homoscedastic errors across individuals and time periods. A more appropriate approach is therefore to estimate the model using other panel data techniques.

Hausman (1978) suggested a test to check whether the individual effects are correlated with the regressors. Under the null hypothesis no correlation between individual effects and explanatory variables, both random effects and fixed effects estimators are consistent but the random effect estimator is efficient while fixed effects are not. Under the alternative hypothesis individual effects are correlated with the regressors, the random effects estimator is inconsistent while the fixed effects estimator is consistent and efficient. The following hypotheses were tested while applying Hausman test.

H_0 : There is no significant difference between co-efficient estimates.

H_1 : There is a significant difference between co-efficient estimates.

If the chi.sq value is significant, H_1 will be supported. It implies that there is a significant difference between co-efficient estimates. Hence, this will lead to the rejection of random effects estimator.

DISCUSSION AND FINDINGS

Descriptive Analysis

Table 1: Descriptive Statistics

	Board size	Board independence	CEO Duality	Board Meetings	Short term Leverage	Long term Leverage	Total Leverage
Mean	7.692	0.379	0.061	3.984	0.728	0.271	0.383
Median	8.000	0.333	0.000	4.000	0.807	0.193	0.384
Maximum	12.000	0.667	1.000	8.000	1.196	2.920	0.815
Minimum	3.000	0.125	0.000	0.000	-1.920	-0.196	-0.224
Std. Dev.	1.928	0.127	0.241	1.317	0.317	0.317	0.174
Skewness	-0.320	0.345	3.649	-0.767	-5.025	5.025	0.004
Kurtosis	2.853	2.423	14.315	5.675	39.655	39.655	3.381
Jarque-Bera	2.343	4.396	982.066	51.528	7825.251	7825.251	0.789
Probability	0.309	0.111	0.000	0.000	0.000	0.000	0.673
Sum	1000	49.395	8.000	518.000	94.692	35.308	49.851
Sum Sq. Dev.	479.692	2.090	7.507	223.969	12.996	12.996	3.936
Observations	130	130	130	130	130	130	130

Table 1 shows the summary statistics of both dependent and independent variables. The mean board size is about eight with the minimum and maximum being three and twelve respectively.

The standard deviation for board size is 1.928. With board independence, the mean ratio of 37.9% suggests that more insiders serve on these boards as against outsiders. This also suggests that these boards are relatively less independent (John and Senbet, 1998). However, the minimum and maximum of 12.5% and 66.7 % is an indication that some of the boards are largely independent. On the average, 6.1% of the boards operate a 2-tier board structure. The standard deviation for CEO duality is of 0.241. Most of the firms depend on short-term debt as against long-term debt. The mean of short-term leverage is 72.8% with the standard deviation of 0.317.

Regression Analysis

Table 2 represents the results of multiple regression analysis to examine the impact of corporate governance on financing decision of listed manufacturing companies in Sri Lanka.

Table 2: Regression for corporate governance and Financing decision

Variables	Short-term leverage (Random Effect Estimation)	Long-term leverage (Random Effect Estimation)	Leverage (Total) (Random Effect Estimation)
Constant	0.641337 (0.0003)	0.358663 (0.0379)	0.214175 (0.0263)
Board size	0.075018** (0.0023)	0.073444** (0.019)	0.037437** (0.0061)
Board independence	-0.051394 (0.8221)	-0.080593 (0.1893)	0.018584 (0.884)
CEO Duality	0.03297 (0.7802)	-0.045729 (0.2383)	0.068645 (0.2983)
Board meetings	-0.025267 (0.119)	-0.025584 (0.8582)	0.00115 (0.8982)
R-squared	0.1349	0.0777	0.1127
No of observation	130	130	130
Hausman test -Chi-Sq	4 (0.1185)	7.34997 (0.1278)	4 (0.8274)
F-statistic	2.360245	1.346875	1.922302
Prob(F-statistic)	0.021431	0.03236	0.042542

Notes: All regressions include a constant. Probability values in brackets. ** indicate significance at 5 per cent level.

In Table 2, the results of the Hausman specification test do not allow to reject the null hypothesis that the difference in coefficients is not systematic. Given such results, the preferred model is the Random-effects GLS because it is consistent and efficient under the circumstances. The study shows that short-term leverage, long term leverage and total leverage have a significant positive correlation with board size, thus contradicting the findings of Berger *et al.* (1997) who showed that firms with large board sizes employ less leverage. The positive relationship between the board size and leverage suggests that larger boards employ a high debt policy to raise corporate value. This may be due to an apparent lack of consensus building due to board size resulting in weaker corporate governance. This finding is consistent with other studies (Jensen, 1986; Wen *et al.*, 2002; Abor, 2006). Again, this could be due to the fact that large board sizes, which are relatively more entrenched due to monitoring by regulatory bodies, make it a deliberate policy to target higher leverage for the purpose of enhancing corporate value. Therefore, as board size has a significant impact on financing decisions such as short-term leverage ($\beta=0.075018^{**}$, $P < 0.05$), long term leverage ($\beta=0.073444^{**}$, $P < 0.05$) and liability ($\beta=0.037437^{**}$, $P < 0.05$), hypothesis one (H_1) is supported.

The results of the study show that board independence is insignificant in explaining short-term leverage, long-term leverage and total leverage. So, H_2 is not supported. Further CEO duality and board meeting have insignificant impact on short-term leverage, long-term leverage and total leverage ($P > 0.05$). Therefore, H_3 and H_4 are not supported. The F-statistics values are 2.360245 ($P < 0.05$) for short-term leverage, 1.346875 ($P < 0.05$) for long-term leverage and 1.922302 ($P < 0.05$) for total leverage which show that the corporate governance variables jointly significantly explain the variations in short-term leverage, long-term leverage and total leverage. The R-square value of 0.1349, 0.0777 and 0.1127 represent that variation of 13.49%, 7.77%, and 11.27% in short-term leverage, long-term leverage and total leverage are explained by corporate governance variables respectively.

CONCLUSION

The objective of this research study was to examine the impact of corporate governance on financing decision of listed manufacturing companies in Sri Lanka. Corporate governance refers to how corporate entities ought to be run, directed and controlled. It is indeed believed that better corporate governance enhances a firm's profile through better access to finance, lower cost of capital, better performance and preferential treatment on the part of all stakeholders. Of critical

importance is the fact that the concept of corporate governance is now dominating the policy agenda of most developing nations.

This study looked at corporate governance and its impact with financing decisions of listed manufacturing firms by using data from 26 listed firms on the Colombo stock exchange covering the period 2012 to 2016. A random-effects GLS panel data regression model was employed and results show that board size influences significantly on financing decisions of firms and other corporate governance variables don't have any impact on financing decision such as short-term leverage, long-term leverage and total leverage. In conclusion therefore, it is recommended that firms should position themselves by strengthening governance structures in order to promote their attractiveness and therefore their capacity to access financial markets.

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Determinants of Usage of ATM of Private Banks in Puttalam District

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Abstract

Automated Teller Machines are expensive technological advancements that implemented by bankers. Bankers should clearly understand what features should be improved within the context of Automated Teller Machines to get it more familiar among customers. Those features simply decide the success or failure of Automated Teller Machines. The purpose of this paper is to investigate those factors that determine the Automated Teller Machine usage of Private Banks in Puttalam District. The conceptual model focuses factors affecting on Automated Teller Machine usage and it was developed based on reviewing existing literature. The model was employed by independent variables of ease of use, usefulness, behavioral control, risk, social influence and dependent variable of Automated Teller Machine usage. Data were randomly collected from two hundred (200) Automated Teller Machine users from Puttalam District to test this model. The data were analysed through descriptive and regression analyses with the help of a powerful statistical software SPSS 22.0. The mean and standard deviation result reveals that ease of use, usefulness, behavioral control, social influence and Automated Teller Machine usage are in high level while risk is in low level. Also, the simple regression analyses results show that all independent variables have significant impact on Automated Teller Machine usage while multiple regression results showing that ease of use is the most influencing factor towards the Automated Teller Machine usage. Finally, it is identified that there is no any variation of variables with personal factors according to ANOVA and independent sample t-test results. The results of this study provide a good evidence for banks to identify the present status of Automated Teller Machine usage among Private Bank Automated Teller Machine users of Puttalam District and further enhancements of work practices regarding Automated Teller Machines within the area of Puttalam District.

Keywords: Ease of use, usefulness, Behavioral control, Risk, Social influence, Automated Teller Machine

Introduction

While delivering banking services to customers, most banking sectors try to reduce pressure within the banking hall and because of that they have introduced the use of Automated teller machines (ATMs) and various E-banking applications. Nowadays in business environment, the need for ATM cannot be overemphasized and ATM is a computerized telecommunications device that provides access to financial transactions of a financial institution with in a public space without the need for a cashier, human clerk or bank teller (Wikipedia,2018).

Banks have continued to increase the number of ATMs across Sri Lanka as bank branch and non- bank branch locations with many of enhanced service delivery characteristics. ATMs have greatly reduced the queues in the banking halls and it save customer's valuable time, provides anytime access with 24X7 service, provide

withdrawing facilities when overseas etc. Therefore, the usage of ATM has been increasing day by day. And also, in some cases customers face problems while using ATMs as accounts are debited with not receiving money, insufficient funds in ATMs, not accepting the card by machine, issuing poor quality of money and balances are declined without money transferring. Beside of above factors there are more factors that determining the usage of ATM services. Thus, this is very important to have an in-depth analysis for identifying factors that determining ATM usage among customers.

Puttalam is a district which is situated in North Western Province in Sri Lanka and it is considered as one of rural area in Sri Lanka. By now, with the improved literacy rate of Puttalam District bank customers, they engaged with lot of financial activities with their banks. Currently, almost all of the banks operate ATMs in Puttalam District to provide best services to their customers. Accordingly, Commercial Bank of Ceylon, Hatton National Bank, Sampath Bank and Seylan Bank are providing ATM services to their customers in Puttalam District as Private Banks.

The empirical literature provides that there are many of researches regarding the ATM usage [Omari & Richard , (2012), Wole & Louisa, (2009), Khan (2010) etc.] But most of them go beyond very past and they have revealed certain amount of ATM service delivery characteristics. Because the concept of ATM is very old and it is going nearly fifty (50) years back. Therefore, this is the time for recall an empirical study which is suitable for enhanced ATM services. And also, when considering the availability of sufficient regional context, it shows none of the relevant literature in Puttalam District. Hence, there is a gap in the understanding of how Sri Lankan Putalam District banking customers affected by factors that determining their ATM usage. Therefore, this is the time for recall an empirical investigation on the preceding topic and make the needful.

To the best of researchers' knowledge, there is no previous research work concerning above matter in particular area. Therefore, this is the time to fill this empirical gap comprehensively. All the above reasons call for the need to assess factors that determining ATM usage. From the above arguments, the problem statement can be stated as;

“What are the factors determining the usage of ATM of Private Banks in Puttalam District?”

Based on the problem statement, following objectives are set;

- i. To identify the level of ATM usage of Private Banks in Puttalam District.
- ii. To identify the level of factors that determining the usage of ATM of Private Banks in Puttalam District.
- iii. To examine the impact of factors on usage of ATM of Private Banks in Puttalam District.
- iv. To identify the most influencing factor that determining the usage of ATM of Private Banks in Puttalam District.

- v. To explore whether factors determining ATM usage varies with demographic factors of Private Bank customers in Puttalam District.

Literature Review

The existing literature shows that perceived usefulness, perceived ease of use, perceived self- efficacy, social influence, relative advantage, perceived complexity, behavioral control and perceived risk are major factors influencing the usage of technology-based activities. Ease of use, usefulness, behavioral control, risk and social influence have selected to assess the determinants of ATM usage in this study.

Ease of use refers to "The degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). When customers perceive on ease of use while ATM transactions, then they tend to use ATM in repeatedly. Wole & Louisa, (2009) says when ATMs be easy to handle, it means their use would be more widely used in the future. Usefulness refers to "The degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). When customers perceive that ATM is very useful then they tend to use it again and again. It was revealed by Wole & Louisa (2009) and they have stated that ATM's use is widespread today because of its usefulness. The behavioral control means that customers can direct their own activities. Many self-service options could be built around the consumers' perception of control over transactions (Xin, et al., 2007). Risk refers to "The potential for loss in the pursuit of a desired outcome of using electronic services" (Featherman & Pavlou, 2002). Risk, has been found out as an important determinant of overall satisfaction and desire to use ATM (Goode, et al., 1996). Social Influence refers "The level to which a person perceives that essential others believe he/she should exercise the technology" (Venkatesh, et al., 2003). Wole & Louisa, (2009) said that "Influence was apparently a factor for using ATM probably because users are likely to encourage by others".

Researchers have identified "Technology Acceptance Model", "Theory of Planned Behaviour" and "Unified Theory of Acceptance and Use Theory" for their research construction.

Hypothesis Formulation

Based on previous research arguments [Sindhu & R. (2018), Salva & Sevgi (2014), James & Matthew (2005) etc.]

Researchers have formulated and tested following hypotheses within this research;

- Hypothesis1a: Ease of use has a positive impact on customer's use of ATM.
 Hypothesis2b: Usefulness has a positive impact on customer's use of ATM.
 Hypothesis3c: Behavioral control has a positive impact on customer's use of ATM.
 Hypothesis4d: Risk has a negative impact on customer's use of ATM. Hypothesis5e: Social influence has a positive impact on customer's use of ATM.

Researchers have tested whether there are any significant differences between personal factors with variables (ease of use, usefulness, behavioral control, risk, social influence and ATM usage). Following hypothesis have formulated based on that;

- Hypothesis6f: Ease of use varies with personal factors.
 Hypothesis7g: Usefulness varies with personal factors.
 Hypothesis8h: Behavioral control varies with personal factors.
 Hypothesis9i: Risk varies with personal factors.
 Hypothesis10j: Social influence varies with personal factors.
 Hypothesis11k: ATM usage varies with personal factors.

Methodology

Study population is ATM users of Private Banks in Puttalam District while sample is selected as two hundred (200) customers who are ATM users of Private Banks in Puttalam District. Although there is lot of techniques that can be used for data collection, convenient sampling technique has been applied by researchers. They could not be able to collect the exact population of ATM usage though they got their possible efforts to complete that task. Because such information is being banks' internal confidential information and hence they did not comply to issue such information to the outside.

Data were collected by primary and secondary methods. The main instrument used to collect necessary data and information from users for this research is questionnaire. Questionnaires were issued to Private Banks' ATM users who are from Puttalam District. Questionnaire used in this research were developed with the help of relevant literature. All variables were measured by the five-point Likert scale. The five-point Likert scales for the variables have ranged from "Strongly Disagree" to "Strongly Agree" with the points of 1 to 5 and 5 to 1 for

the positive and negative statements order respectively. As well as, secondary data were collected from the various books, journal articles web sites and interviews with people.

Univariate Analysis - Mean, Standard Deviation

Univariate analysis has used to measures the mean, standard deviation for each variable for assessing levels of each and every indicator and variable. The below decision rule (Table 01) is applicable for those variables.

Table 1: Decision Rule

Variable	Decision rule	
Ease of use, usefulness, behavioral control, social influence, and ATM usage	$1 < X_i \leq 2.5$	Low level
	$2.5 < X_i \leq 3.5$	Moderate level
	$3.5 < X_i \leq 5.0$	High level
Risk	$1 < X_i \leq 2.5$	High level
	$2.5 < X_i \leq 3.5$	Moderate level
	$3.5 < X_i \leq 5.0$	Low level

Where;

X_i = Mean values of variables $i =$

1, 2,3,4,5,6

X_1 = Mean value of ease of use X_2

= Mean value of usefulness

X_3 = Mean value of behavioral control $X_4 =$

Mean value of risk

X_5 = Mean value of social influence X_6

= Mean value of ATMusage

Bivariate Analysis - Simple Regression Analysis

The bivariate analysis is a method of analyzing data on two variables. Here, it was made to determine whether there is any impact of variables on the ATM usage. According to that, the simple regression analysis was made to determine the functional relationship between the

dependent variable (ATM usage) and independent variables (ease of use, usefulness, behavioral control, risk and social influence).

Multivariate Analysis - Multiple Regression Analysis

Multivariate data analysis is a data analyzing method that arises from more than one variable. Here, researchers have tested the impact of five determinants on ATM usage at simultaneously. For that, researchers have used multiple regression analysis and based on results they have identified the most influencing factor on ATM usage.

ANOVA and Independent Sample T-Test

One-way ANOVA analysis of variance (ANOVA) and the independent sample t-test examines the significant differences between samples. Here, ANOVA test was used to analyze whether there are any significant differences between personal information (account holders bank, age, income and education) of ATM users with variables. The independent sample t-test was used to analyze whether there are any significant differences between personal information (gender and status) of ATM users with variables.

Data Analysis and Findings

Cronbach's alpha test is the most common measure of internal consistency. Results of this test are given in the Table 2, suggest that the internal reliability of each research instrument is satisfactory.

Table 2: Cronbach's Alpha Test

Variable	Reliability
Ease of use	0.804
Usefulness	0.876
Behavioral control	0.783
Risk	0.718
Social influence	0.782
ATM usage	0.809

Source: Survey Data

According to the research objective one and two, researchers have tested means and standard deviations of each and every variable and indicator to formulate their levels respectively. All indicators and variables except risk present high level while risk presents low level. Usefulness has highest mean value comparatively to other variables while behavioral control has lower mean value among other variables. Further, behavioral control and social influence has lowered high level than ease of use and usefulness. Results were formulated according to the decision rule which was presented in Table 1 and it is shown in the below Table 3.

Table 3: Mean / Standard Deviation for Variables / Indicators

Variable/ Indicator	Mean	Standard Deviation
Conduct every transaction activity through ATM	4.04	0.55
Frequently usage	4.07	0.58
Consuming all facilities	4.10	0.58
ATM usage	4.07	0.48
Information availability and content	4.11	0.59
Lesser steps	4.17	0.69
Flexible use	4.19	0.65
Extent of service offerings	4.21	0.66
Easy to learn	4.06	0.65
Ease of use	4.15	0.49
Extent of fast service	4.16	0.70
Convenient access time	4.11	0.68
Small quantity of money transactions	4.24	0.61
Reduction in paper/card-based services	4.17	0.64
Quality of service	4.17	0.66
Usefulness	4.17	0.54
Self-confidence	4.07	0.65
Self-controllability	3.94	0.71
Self-manageability	3.98	0.64
Patient	3.90	0.72
Behavioral control	3.97	0.53

Security risk	4.22	0.68
Legal risk	4.19	0.64
Privacy risk	4.23	0.65
Financial risk	3.98	0.66
Risk	4.15	0.48
Influence of family	3.98	0.70
Bank pressure	3.96	0.69
Influence of society	3.88	0.67
Influence of peer groups	3.78	0.63
Social influence	3.90	0.52

Source: Survey Data

Third objective attempts to find the impact of each variable on the usage of ATM. All “R” values show that there is strong relationship of variables with ATM usage while “R square” values show that all variables are significant / good predictors of the ATM usage since “p values” are less than 0.05. And also, all results show that p values are less than 0.05 ($p < 0.050$) and it indicates that first five alternative hypothesizes (from Hypothesis 1a to Hypothesis 5e) are not rejected. Results are shown in the below Table4.

Table 4: Statistics of Regression between Variables

Method	Ease of use	usefulness	Behavioral control	Risk	Social influence
R	0.507	0.394	0.191	0.321	0.436
R Square	0.257	0.156	0.037	0.103	0.190
a- Constant	1.976	2.595	3.378	2.735	2.497
b- value	0.505	0.354	0.175	0.321	0.403
Sig t	0.000	0.000	0.007	0.000	0.000

Source: Survey Data

Fourth objective of this research is identifying the most influencing factor that determining the usage of ATM. For that, multiple regression analysis has used by researchers. According to results of Table 5, “R” represents 0.727 correlational value. This value express that there is a strong positive correlation between determinants and ATM usage. 52.8% of ATM usage explained by determinants of ATM usage and remaining value represents by other determinants which creating ATM usage. In other words, 52.8% of variation in ATM usage is explained by ease of use, usefulness, behavioral control, risk and socialinfluence.

Table 5: Model Summary

Model	R	R Square	Adjusted R. Square	Std. Error of the Estimate
1	0.727	0.528	0.516	0.33688

Source: Survey Data

According to Table 6, “p” value ($0.000 < 0.050$) states that there is a significant impact of variables on ATM usage.

Table 6: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.623	5	4.925	43.393	0.000
Residual	22.017	194	0.113		
Total	46.639	199			

Source: Survey Data

The unstandardized constant statistic 0.750 units show that model would predict if all five- independent variables were zero. The B coefficient for ease of use is 1.219. This means if the ease of use goes up by 1 point, the customer usage of ATM will improve by 1.219. The B coefficient for usefulness is 0.132. This means if usefulness goes up by 1 point, customer usage of ATM will improve by 0.132. The B coefficient for behavioral control is 0.149. This means if behavioral control goes up by 1 point, ATM usage will improve by 0.149. The B coefficient for risk is -0.914. This means if risk go up by 1 point, ATM usage will reduce by

0.914. The B coefficient for social influence is 0.235. This means if social influence goes up by 1 point, usage of ATM will improve by 0.235.

According to Table 7 results, ease of use (B = 1.219) has significantly most influence on the ATM usage of Private Banks in Puttalam District. Because it has the highest beta value than others.

Table 7: Coefficients

Model	Unstandardized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	0.750	0.318		2.360	0.019
Ease of use	1.219	0.132	1.224	9.248	0.000
Usefulness	0.132	0.048	0.147	2.716	0.007
Behavioral control	0.149	0.045	0.164	3.305	0.001
Risk	-0.914	0.129	-0.912	-7.059	0.000
Social influence	0.235	0.050	0.254	4.732	0.000

Source: Survey Data

Last objective of this research is finding whether there is any variation of selected variables with personal factors. According to the below Table 8, account holders' bank, age level, monthly income level and educational qualification level were analyzed by using ANOVA test while gender and status were analyzed by using independent sample t-test. All results show that p values are greater than 0.05 ($p > 0.050$) and it indicates that all next five alternative hypotheses (from Hypothesis 6f to Hypothesis 11k) are rejected.

Table 8: Results of ANOVA and T- Test for Personal Factors of Respondents

Personal Factors	Account holders' bank	Gender	Status	Age Level	Monthly Income level	Educational qualification Level
Variable						
P values						
Ease of use	0.422	0.425	0.218	0.707	0.628	0.579
Usefulness	0.094	0.559	0.195	0.933	0.840	0.073
Behavioral control	0.508	0.189	0.723	0.484	0.738	0.805
Risk	0.085	0.651	0.443	0.869	0.553	0.674
Social influence	0.873	0.298	0.533	0.912	0.114	0.927
ATM usage	0.547	0.292	0.174	0.627	0.361	0.227

Source: Survey Data

Discussion

Personal information is any data which identifies relation to an individual such as age, gender, educational level etc. Here, results show the majority of respondents were males, most of ATM users were married, most of customers' age ranged from 41 to 60 years, level of education was high with majority of the respondents having up to G.C.E.(A/L) and most of respondents' monthly income ranges from Rs 40,001/= to Rs60,000/=.

“ATMs seemed to be easy to use, it means their use would be more widely adopted in the nearest future” (Wole & Louisa, 2009). This suggests that easy to use should be at high level for the enhancements of ATM usage. Here, researchers also have able to find that the ease of use is in the high level. Customer should be want to feel that using ATM is easier for them. According to Davis, Bagozzi & Warshaw (1989) and Salva & Sevgi (2014) ease of use has a significant positive impact on actual usage of technology. Here, results are consistent with that finding and this implies that if customers perceive ATM is easy to use, then they would adopt and use it. It can be concluded that ease of use is a good predictor of customer usage. Also, ATM users more rely on its perceived ease of use of Private Banks in Puttalam District. Therefore, ease of use should be more considered by bankers.

According to results of Wole & Louisa, (2009) they have revealed that ATM's use is widespread today because of its usefulness. Here, results are consistent with it. Same to those results researchers have able to find that there is a high level of usefulness. Actually, ATMs have more benefits on its users. Customers are more likely to adopt ATM if they believe using ATM will give more benefits as compared to other traditional banking channels. Researchers have able to identify that usefulness is a good predictor of ATM usage.

Clearly, the ATM environment does not allow for human interaction and it leads to control customer's performances in his own way. Reason for high level could be freedom of conducting transactions in own way. Also, the nature of the people is to get the work through others. That may be cause for the reduction of level comparatively other variables. Alinda & David, (2015) has stated that "However, unlike previous studies, the variable of control was not found to be significant" relating to SSTs usage. But here researchers have able to identify significant influence of behavioral control on ATM usage.

Normally customers do not like to get risk when they deal with the bank. They want to minimize the risk. When they engage with ATMs they have to face some risks such as loses of money, unauthorized usage etc. Banks are trying to reduce the risk to give better services to their customers. According to the results researchers have found that there is a low level of risk. ChauShen, (2013) demonstrate that risk is negatively and significantly affects attitudes towards adopting on technology and usage. Salva & Sevgi, (2014) have stated that their research has not provided any significant impact on the technology usage. Anyway, based on findings, risk has a negative relationship with ATM usage and it leads to risk becoming a good predictor of ATM usage.

"Influence was apparently a factor for using ATM probably because users are likely to encourage by others" (Wole & Louisa, 2009). According to that, social influence also should be in a high level. Researchers have able to find that there is a high level of social influence but it gets a slightly lowered amount comparatively to other variables. Sindhu & R (2018) shows social influence is not statistically significant within their tested technology. But here, researchers have able to find the significant influence of social influence on ATM usage. It shows that the social influence is a good predictor of ATM usage.

Conclusions and Recommendations

Descriptive statistics provides that ease of use, usefulness, behavioral control, social influence and ATM usage having high level while risk having low level. Bivariate analyses suggested that each and every variable has a significant impact on the ATM usage while ease of use being the most influencing factor on ATM usage. ANOVA and independent sample t- tests suggested that any variable does not vary according to customers' personal information within the area of Puttalam District.

Whereas the study was focused on limited number of Private Banks' ATMs, findings should be applicable to all banks that offering ATM services. According to findings and discussion, banks must take much consideration about those variables to maximize the ATM usage among bank accountholders even they are ATM users or non-users. The following recommendations were given on banks by researchers in order to enhance their ATM services among account holders.

- Install many service outlets within the area.
- System developers can minimize the number of steps in the transaction process.
- Employ an immediate problem-solving assistant on the service outlets.
- Management should get quick solutions to customer complaints.
- Advertise new ATM facilities.
- Use the opinion leaders of the society.

Findings of this research will be important on the practical level. In order to increase usage rate, banks should focus on ATM non-users also. Improving ease of use, usefulness, social influence and behavioral control of ATM transaction may bring value to the service and customers may choose ATM banking rather than one of other available options. And also, bankers should try to further reductions of the risk of ATM usage.

Researchers have identified some limitations of this study. The study was limited to investigate factors determining the usage of ATM in four (04) Private Banks which are operating in Puttalam District. Further investigation of Private Banks' ATM usage in other Districts may provide additional scope into findings of the study. Also, this research focuses on Private Banks only. Therefore, this research results are specific into Private Banks.

But all Sri Lankan Public Banks also provide ATM services to their customers. To increase the value and accuracy of results, future research can explore Public Banks also. Because of limited time scale researchers have used only two hundred (200) sample. And, researchers have used convenient sampling method because they could not obtain exact population in numbers because banks not providing their internal confidential information to the outside. This provides a further insight for researchers to conduct their research with cross sectional data with an increased number of sample size.

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Earnings Quality and Value Relevance of Earnings: A Comparison between Pre and Post IFRS Periods in Sri Lankan Context

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Abstract

The introduction of IFRS as a response to the extensive necessity of a common language for financial reporting has opened up new paths for a major line of research area, as the extent of the achievement of the objectives attached with the implementation of IFRS is open to debate all over the world despite its widespread adoption. Accordingly, this study aims to examine the impact on earnings quality and value relevance of earnings on the convergence with IFRS by Sri Lanka by following the global trend of harmonisation of financial reporting practices. The study assesses whether the earnings management practices are significantly low resulting in a higher earnings quality with the adoption of IFRS and whether the value relevance of earnings is significantly higher in the post IFRS period than pre IFRS period with respect to the companies listed in the Colombo Stock Exchange (CSE). The study covers two time periods; three years' period before (pre) and three years' period after (post) the adoption of IFRS. The study employs Dechow et al. (1995) and Kasznik (1999) models to measure the abnormal accruals in order to evaluate the quality of the earnings through earnings management practices. The study then follows the theoretical frameworks of price earnings model and return earnings model as proposed by Ohlson (1995) and Easton and Harris (1991) respectively to assess the value relevance of earnings. The results of the study indicate that the level of earnings management is increased in the post IFRS period indicating a lower level of earnings quality with the adoption of high quality standards of IFRS. Further it finds that the value relevance of earnings is reduced in the post IFRS period than pre IFRS period. The results of the study contribute to fill the existing gap in the literature with respect to the adoption of IFRS by developing countries and frontier markets on the earnings quality and value relevance. The results of the study provide additional evidence to the debate among the researchers on the existence of other significant variables which help to improve the quality of the financial information at individual country level.

Keywords: IFRS, Value Relevance, Earnings Quality, Frontier Market, Sri Lanka

INTRODUCTION

The extensive interest among the researchers on the relationship between accounting information and market data (Holthausen & Watts 2001; Chandrapala 2013; Ball & Brown 1968) has tended to enrich the accounting and finance literature on the earnings quality and value relevance or explanatory power of earnings (Holthausenand & Watts 2001; Kargin 2013; Stunda 2013).

The deterioration of the information contents of accounting information in terms of market data over the past two to three decades (Lev & Zarowin 1999) which was factored with the globalization (Thompson 2016; Shehu & Masunda 2015), technological changes (Shil et al. 2009), worldwide deregulations (Lev & Zarowin 1999) and international financial markets (Callao et al. 2007) has necessitated the need for a common language and motivated the worldwide regulators to formulate a global framework (Macedo et al. 2013; Beuren et al. 2008) to overcome the information asymmetry prevailing with different accounting standards (Beuren et al. 2008) to meet the demand of the users on high quality and value relevant financial information. Accordingly, International Accounting Standards Committee (IASC) and its successor International Accounting Standard Board (IASB) have introduced International Financial Reporting Standards (IFRS/IAS) to spell out the boundaries for preparing and interpreting financial statements (IFRS foundation & IASB 2017) and its use was widespread among both developed and developing countries as their financial reporting framework (PricewaterhouseCoopers 2013).

The completed analysis by IFRS Foundation (2017) in April 2018 on 166 jurisdiction profiles on the use of IFRS around the world, clearly indicates that the IFRS are being used by all parts of the world as shown in the table I;

Table I Analysis of the IFRS jurisdiction profiles

Region	Number of Jurisdictions	Requires IFRS for all or most domestic publicly accountable entities
Europe	44	43
Africa	38	36

Middle East	13	13
Asia and Oceania	34	25
Americas	37	27
Total	166	144

Source: IFRS foundation (2017)

According to IFRS foundation (2017) around 144 jurisdictions out of 166 require and 12 jurisdictions permit IFRS for all or most domestic publicly accountable entities in their capital market.

This widespread adoption of IFRS has resulted in creating another major line of research (Lourenco & Branco 2015) and importantly, there is a considerable interest among the researchers in assessing the impact on the earnings quality and value relevance following the adoption of high quality standards of IFRS and resulted in mixed findings. However, most of those studies focus on developed countries creating a gap in the literature with respect to the impact of IFRS adoption on the quality of financial information on developing countries (Ismali et al. 2013). Many developing countries have less efficient and immature capital markets (Gibson, 2003 cited in Ismail et al. 2013; Mobarek & Keasay 2000; Black & Nakao 2017), concentrated ownership (Chebaane & Othman 2014; Black & Nakao 2017) and weak institutional and regulatory enforcements (Outa 2011; Mobarek & Keasay 2000; Ding et al. 2007) making the countries more vulnerable to high levels of corruption, insecurity, and conflicts compared to the developed countries (Hartungi 2006). Therefore, existence of significant difference between developing and developed countries in terms of economical, legal and political aspects (Hartungi 2006) emphasises the importance of analyzing the impact of IFRS adoption on the developing countries stating high quality standards would help those countries to improve the quality of financial statements (Ismail et al. 2013).

Creating a remarkable milestone in the area of corporate financial reporting, the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) has issued Sri Lanka Financial Reporting Standards (SLFRS) and Sri Lanka Accounting Standards (LKAS) for annual financial periods beginning on or after 1 January 2012 in line with International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS) by following the global trend in enabling

a common language for financial reporting process (The Institute of Chartered Accountants of Sri Lanka 2017 & The Island 2011).

The movement towards the convergence with IFRS is driven with the objectives of more relevant timely and more transparent financial information.

Levitt (1997) states ‘...Good standards, like good cameras produce sharper, more accurate pictures...’ and it is in line with the previous studies which show different levels of earnings quality with different accounting standards (Shil et al. 2009; Soderstom & Sun 2017; Ewert & Wagenhofer 2005). Therefore, it is expected that the adoption of this high quality standard of IFRS would provide a favourable impact on the quality of the earnings reported by the listed companies in Sri Lanka leading to improve the value relevance of earnings.

Therefore, the research question of the study is;

What is the impact of convergence with IFRS by Sri Lanka on earnings quality and value relevance of earnings, being a developing country?

Therefore, this study aims to understand the impact of convergence with IFRS by Sri Lanka as a developing country on the earnings quality and value relevance, by studying three years before the convergence and three years after the convergence.

Accordingly, the following specific research objectives are formulated;

1. To assess the improvement in earnings quality with the adoption of IFRS
2. To assess the improvement in value relevance of earnings in explaining share prices in the post IFRS period
3. To assess the improvement in value relevance of earnings in explaining stock returns in the post IFRS period

The present study examines a different aspect of this important event of global convergence of financial reporting practices since it addresses the peculiarities attached with adopting this high quality global standards by a frontier market like Sri Lanka located in South Asia Region with the characteristics of relatively illiquid and less developed capital market, lower economic development along with the social and political uncertainty. Therefore, this study clearly departs from the previous studies which address the earnings quality and value relevance of earnings in the light of IFRS adoption and complements the literature by filling the existing gap on developing countries by studying the consequences of more direct effect on mandatory

adoption. Further this study would be a useful reference to standard setters, regulators and users of the financial statements to identify the need for further developments with the process and would help in crafting future strategies to improve the effectiveness in the process. Similarly, the result would provide some guidance to the rest of the developing countries with similar institutional characteristics which are interested in switching to IFRS.

LITERATURE REVIEW

The ability of earnings to represent the actual earnings (Bellovary et al. 2005) while having a minor indication of earnings management practices (Lang et al. 2005) is defined as the quality of the earnings. The accounting accrual has gained a considerable attention in measuring the earnings quality recently in the literature (Chan et al. 2006; Nouri & Abaoub 2014) and the total accruals is the difference between earnings and cash flow from operations (Xie 2001). The existence of higher level of abnormal/discretionary accrual which is the amount of accrual above or below the normal accrual, level indicates low earnings quality and lower level of association between share prices (Chan et al. 2006). The level of earnings management practices could also vary according to firm size, growth, profitability and leverage (Rudra & Bhattacharjee 2012; Van Tendeloo & Vanstraelen 2005; Nouri & Abaoub 2014; Collins et al. 2012). The concept of value relevance is one of the interested topics among the researches in the field of accounting and finance from the beginning (Kargin 2013; Holthausen, Watts 2001 & Stunda 2013) and it is defined in the literature as the power of reported earnings to explain the stock prices and stock returns (Ball & Brown 1968; Chandrapala 2013). The literature highlights that a higher earnings quality with lower level of earnings management would lead to improve the value relevance of the earnings (Ismail et al. 2013; Perotti & Wegenhofer 2014). On the other hand, the improvement in value relevance indicates higher quality of the earnings (Chan et al. 2006; Mousa & Desoloy 2014).

In the light of adopting IFRS by the countries all over the world, there is an ongoing debate on whether the changes in accounting would lead to changes in accounting quality (Tsalavoutas et al. 2008) and accordingly it has resulted in bringing new insights in to the issues relating to the quality of accounting numbers and value relevance (Negakis 2013). However, existing studies with respect to the developed countries/markets indicate conflicting evidences on the earnings quality and value relevance of accounting information provided under IFRS against the domestic standards of the particular country.

Nouri and Abaoub (2014) examine the extent of earnings management using the data of 145 French companies listed on the stock exchange covering a ten year period from 2000 to 2009 which is divided into two periods called pre and post IFRS period using modified Jones 1991 model by Kothari et al (2005). Findings of the study indicate that the French companies display significantly less earnings management in post IFRS, with low level of discretionary accruals and has led to higher value relevance. Similarly, the study of Zeghal et al. (2012) confirm an improvement in earnings quality with the adoption of IFRS, reporting a decrease in absolute discretionary accrual through the model of Dechow et al. (1995) using 15 European union countries over the period of 2002 to 2007.

However Ahmed et al. (2013) who study a group of countries in Europe address the accounting quality with the adoption of IFRS highlight that the quality of earnings will improve if the IFRS are of higher quality than that of domestic standards. The study finds a higher level of income smoothing, significant increase in aggressive reporting of accruals leading to inconsistent result indicating a decrease in the accounting quality with the adoption of IFRS.

Further Tendeloo and Vanstraelen (2005) with the data of German listed companies over the period of 1999 to 2001 covering 636 firm-year observations finds no evidence to say that the earnings management is decreased with the adoption of IFRS whereas the discretionary accruals is increased with the IFRS. Similar findings were reported by Macias and Muino (2011) on accounting quality with their study on 15 countries representing full and partial adopters in the Europe including Norway where they have compared financial statements prepared for 2004 with the restated figures in 2005 under IFRS.

The study by Callao et al. (2007) in Spanish companies found no improvement in value relevance with the IFRS adoption. The study highlights that the differences between market values and book values were higher however they predict the value relevance would be recovered and improved in the medium and long run. Similarly, no improvement in value relevance is also confirmed by Kargin (2013) using Turkish listed firms.

Further the study of Negakis (2013) examines the effect of the introduction of IFRS in 2005 on the explanatory power of earnings for stock returns in Greece. The data used in the study consisted from 175 firms listed in Athens Stock Exchange over the period 2000-2007 and used Easton Harris (1991) model. The study indicates that the mandatory use of IFRS after 2005 has a substantial negative effect on the explanatory power of earnings for stock returns. Year-wise regression model also indicates a reduction in the value relevance of earnings and changes in

earnings in the post IFRS period. The implication of the above results is that both book values of equity and earnings lost some of their information content in the post IFRS period leading to decrease the quality of the earnings. Similarly, the study of Paananen and Lin (2009) on German companies for the period from 2000 to 2006 finds a decrease in the value relevance of the earnings in the post IFRS period and further suggests that there is a decrease in the earnings quality in the post IFRS period as well.

The study carried out by Tsalavoutas et al. (2008) examine the relative value relevance of book value of equity and net income of the Greek listed companies among 2004 Greek GAAP versus 2005 IFRS figures in order to check the change in relationship between market values and reported figure before and after the adoption. The study employs Ohlson (1995) as the main model and confirms that there is no change in the relative value relevance of accounting information in pre and post IFRS period. It contributes to the argument that the switching of accounting standards itself is not sufficient to make improvement in accounting quality. The study of the Van der Meulen, Gaeremynck and Willekens (2007) also confirms no significant difference between US GAAP and IFRS prepared financial statement data in terms of value relevance using listed German companies.

When most of the researches focus on individual or only limited number of countries, Barth, Landsman and Lang (2006) in their study address whether the reporting under IAS is associated with higher accounting quality and higher value relevance of accounting amounts following the application of IAS than domestic Generally Accepted Accounting Principles (GAAP) by using a very large sample of 23 countries covering the period from 1994 to 2003. Their study covers the developed countries like Australia, Denmark, Finland, Germany, Hong Kong, Hungary, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey & United Kingdom. The result suggests that firms that apply IAS have higher accounting quality and more value accounting numbers than firms that do not. Further, Kang (2013) through 13 European countries using the earnings return regression models confirms a significant increase in the value relevance. Elbakry et al. (2017) also confirms a higher value relevance of earnings in both Germany and Italy under the Ohlson model using the data of listed companies over a six year period. Garcia et al. (2017) also report an increase in value relevance with respect to companies in Latin America.

The existence of contradictory results even at the studies of the developed countries/markets, doubt the achievement of the objectives of implementing the IFRS by the developing countries.

However, the impact of the adoption of IFRS in developing countries is of little interest up to date.

METHODOLOGY

The phase I of the study evaluates whether the level of earnings management is significantly lower in the post IFRS period leading to higher earnings quality with the adoption of IFRS and phase II of the study examines whether the earnings are more value relevant in the post IFRS period than pre IFRS period. The entire sample period of the study is divided into two periods called; pre IFRS period and post IFRS period. The post IFRS period comprises from financial years beginning in year 2012 to financial years ending in March 2015. Therefore, the pre IFRS period consists of three financial years commenced before year 2012.

Conceptual Framework

The conceptual framework of the study is given in the figure 1.

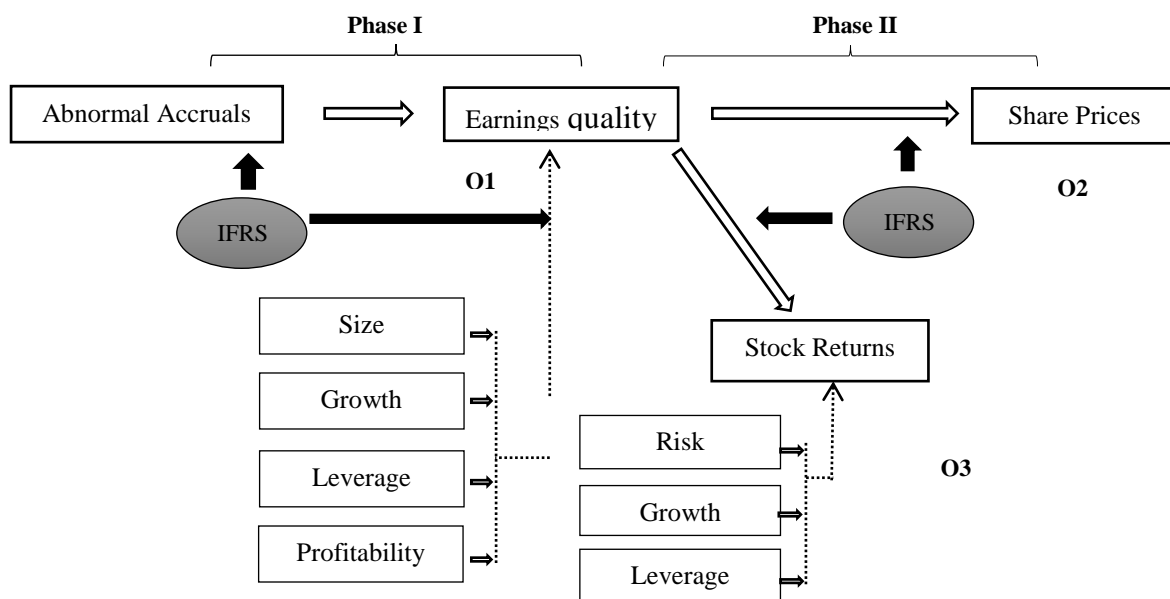


Figure 1: Conceptual Framework (Source: Ismail et al. 2013)

Model Specification

Phase I: Assessing the Quality of the Earnings in the Pre and Post IFRS Periods:

Dechow et al. (1995) model and Kasznik (1999) model which are commonly used in the literature (Matis et al. 2010; Ismail et al. 2013) are employed in the study to compute the value

of abnormal accrual to assess the earnings management practices. Two alternative models are employed to establish model robustness. The rest of the analysis on the earnings quality is conducted by using the absolute values resulted with the regression representing departure of total accrual from the normal accrual. Low earnings quality is reported with high absolute value of abnormal accruals and vice versa.

Model 01: Dechow et al. (1995)

$$TACCR_{it} = a(1/ASSET_{it-1}) + b(\Delta REV_{it} - \Delta REC_{it}) + cPPE_{it} + \varepsilon_{it} \quad (1)$$

Where $TACCR_{it}$ is the total accruals for firm i in year t , $ASSET_{it-1}$ is the total assets for firm i in year $t-1$, ΔREV_{it} is the revenue in year t less revenue in year $t-1$ for firm i , ΔREC_{it} is the receivables in year t less receivables in year $t-1$ for firm i , PPE_{it} is the gross property, plant and equipment for firm i in year t and ε_{it} is the error term for firm i in year t .

Model 02: Kasznik (1999)

$$TACC_{it} = a(1/ASSET_{it-1}) + b(\Delta REV_{it} - \Delta REC_{it}) + cPPE_{it} + d\Delta CFO_{it} + \varepsilon_{it} \quad (2)$$

Where ΔCFO_{it} is the change in cash flows from operation for firm i in year t relative to year $t-1$ and all other variables are as previously defined.

In line with Matis et al. (2010) and Kothari et al. (2005), variables used in the above two models are each scaled by previous year total assets to mitigate the estimation errors of the residuals in the regressions.

Following Ismail et al. (2013) the multiple regression equation (3) is estimated on the absolute value of abnormal accrual computed using the above two models in order to check the first hypothesis ($H_1: 01$) of existence of significant improvement in earnings quality in terms of reduction of earnings management practices in post IFRS period than pre IFRS period.

$$ABAC_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 PROFITABILITY_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 IFRS_{it} + \varepsilon_{it} \quad (3)$$

Where $ABAC_{it}$ is the absolute value of abnormal accrual for firm i in year t generated from Dechow et al. (1995) model or Kasznik (1999) model, $SIZE_{it}$ is the natural logarithm of total assets for firm i at the end of year t , $PROFITABILITY_{it}$ is the return on asset ratio for firm i in year t , $LEVERAGE_{it}$ is the total long term debt divided by total asset for firm i at the end of year

t , $GROWTH_{it}$ is the share price divided by book value per share for firm i at the end of year t and $IFRS_{it}$ is the dummy variable given a value of 1 if the financial statement prepared under IFRS, 0 otherwise for firm i in year t .

Phase II: Assessing the Value Relevance of Earnings in the Pre and Post IFRS Periods:

Two widely used models in the literature in measuring earnings return relationship called price earnings model (Chebaane & Othman 2014; Kargin 2013; Tsalavoutas et al. 2008; Panaanen 2008; Zeghal et al. 2012) and return earnings model (Alali & Foote 2012; Negakis 2013; Mousa & Desoky 2014; Black & Nakao 2017; Kouki 2018; Kousenidis et al. 2010; Erin et al. 2017) are employed in the study to evaluate the value relevance of earnings in pre IFRS and post IFRS periods.

Price Earnings Model

The Price earnings model which is proposed by Ohlson (1995) is used to test the second hypothesis (H₁: 02) of the study on whether there is a significant improvement in the relationship between earnings and share prices in post IFRS period than pre IFRS period.

$$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BVPS_{it} + \varepsilon_{it} \quad (4)$$

Where P_{it} is the price of a share of firm i at the year end t , EPS_{it} is the earnings per share of firm i during the year t , $BVPS_{it}$ is the book value per share of firm i at the end of year t and ε_{it} represents the other value relevant information of firm i for year t .

The coefficient of earnings (α_1) explains the ability of firm's earnings to explain stock prices. Further the value of R^2 will be also compared to see the difference in explaining power of the earnings following the IFRS implementation.

In line with Zeghal et al. (2012) and Ismail et al. (2013) the extended regression model (5) is used to assess the interaction of IFRS adoption with the earnings and book values.

$$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BVPS_{it} + \alpha_3 IFRS_{it} + \alpha_4 EPS_{it} * IFRS_{it} + \alpha_5 BVPS_{it} * IFRS_{it} + \varepsilon_{it} \quad (5)$$

The coefficient of the interaction variable (α_4) of $EPS_{it} * IFRS_{it}$ indicates whether the adoption of IFRS has made a significant influence on the value relevance of earnings in explaining share prices.

Return Earnings Model

The Easton and Harris (1991) return earnings model to test the third research hypothesis (H₁: 03) of existence of significant improvement in the relationship between earnings and stock returns in post IFRS period.

$$RET_{it} = \alpha_0 + \alpha_1 EPS_{it}/P_{it-1} + \varepsilon_{it} \quad (6)$$

Where RET_{it} is the holding return for 12 months period before the year end for firm i at year t , EPS_{it}/P_{it-1} is the earnings per share of firm i at the year t divided by the closing price 12 months previously for firm i in year t .

The coefficient of EPS_{it}/P_{it-1} and R^2 of the model are examined to compare the ability of earnings to explain the stock returns in pre and post IFRS periods.

In order to account for the effects of the IFRS implementation on the earnings return relationship equation (6) is augmented by slope and intercepts dummies following Ismail et al. (2013) and Nagakis (2013) by using dummy value of 1 for year 2012 to 2014 (post IFRS period) and 0 otherwise. Along with IFRS variable some other control variables that are highlighted in the literature including the study of Ismail et al. (2013) as important in explaining stock return are also included in the model as follows;

$$RET_{it} = \alpha_0 + \alpha_1 EPS_{it}/P_{it-1} + \alpha_2 IFRS_{it} + \alpha_3 EPS_{it}/P_{it-1} * IFRS_{it} + \alpha_4 EPS_{it}/P_{it-1} * RISK_{it} + \alpha_5 EPS_{it}/P_{it-1} * GROWTH_{it} + \alpha_6 EPS_{it}/P_{it-1} * TDTA_{it} + \varepsilon_{it} \quad (7)$$

Where $RISK_{it}$ is the β for firm i in year t , $GROWTH_{it}$ is the share price divided by book value per share for firm i at the end of year t , $TDTA_{it}$ is the total debt divided by total assets for firm i at the end of year t and all other variables are as previously defined.

The coefficient of interaction variable (α_3) of $EPS_{it}/P_{it-1} * IFRS_{it}$ of the model captures the impact of IFRS on the value relevance of earnings.

The regressions are run separately for overall period, pre IFRS period and post IFRS period using the basic models (equation 4 and 6) and the extended models (equation 5 and 7) is run on the overall period.

The stock returns are computed by following the comprehensive model proposed by Nimal (2006) with the reinvestment assumption.

Data and Sample Selection

The data used in the study comprises from the companies listed in the Colombo Stock Exchange (CSE) and represents the period from March 2008 to March 2015. However, a number of firms including financial firms (insurance, banks and other financial institutions) are excluded from the sample since they have different explanation on the leverage and different presentation with respect to the financial information to ensure the greater homogeneity in the firms included in the sample following the previous studies on earnings quality and value relevance (Ismail et al. 2013; Nagakis 2013). A number of other firms are excluded from the sample including companies listed in the stock exchange after March 2008 and firms which were non-compliant with the listing rules and firms that do not possess sufficient details. The financial data are gathered from the annual reports and disclosures that are published under each company and other details are obtained from the CSE historical databases.

The exclusion procedure has resulted with 157 firms and accordingly the sample data set for assessing earnings quality which is termed as 'Panel A' represents 538 firm year observations however with respect to the sample data set on 'Panel B' which is used to evaluate the value relevance consist from 512 firm year observations representing only 137 companies due to non-availability of required market data from some companies included under the Panel A.

EMPIRICAL RESULTS

The results are based on the two types of analyses; namely descriptive and inferential including correlations and regressions.

Descriptive Analysis and Correlation

The mean, median, maximum, minimum and standard deviation for the Panel A and Panel B variables used to assess the earnings quality in terms of earnings management and value relevance respectively are determined using descriptive statistics.

The results of the descriptive statistics indicate that there is not much difference between the absolute value of abnormal accrual calculated using Dechow et al. (1995) model leading to ABACDEC value and those computed using Kasznik (1999) model leading to ABACKAS value. The mean and median of ABACDEC is 0.18 and 0.07 respectively whereas the same for ABACKAS is 0.11 and 0.05. A non-parametric test of Wilcoxon signed rank test is employed to compare the median values to test whether there is significant difference between the central

tendency measures of median under both models. The test resulted with -1.254 Z value with p value of 0.1049 (one tail test). Therefore, it is not significant at 5 percent level. Similar result is reported with the studies of Ismail et al. (2013) and Martis et al. (2010). However, this is not in line with the studies carried out in the developed countries where they have highlighted the model improvement with the inclusion of variable of changes in cash flow from operations (Pae 2011; Kasznik 1999; McNicholas 2002) which captures the timing and matching problems in cash flows with larger changes in working capital, investment financing activities (Dechow 1994). Therefore, relatively less complex and less dynamic environment in developing countries might have resulted in non-significance of the said variable.

The study measured the degree of association that exists between the variables that are under the study by using the coefficient of correlation using both Pearson's and Spearman's correlation metrics and the matrices prove that the correlations between the variables used in the model are relatively small.

Earnings Quality

The multiple linear regression analysis is employed to evaluate the contribution from each variable that is identified in determining the level of absolute accrual of the firms to evaluate the earnings quality and the results are presented in the Table II.

As indicated in the table the coefficient of the moderate variable of IFRS (β_5) is stood at positive 0.034 (t value 1.204) and 0.023 (t value 1.277) under Dechow et al. (1995) model and Kasznik (1999) model respectively. Similar positive association between IFRS adoption and earnings management under both models suggest that the results are robust to the use of alternative estimation of the absolute value of abnormal accruals. This result suggests that the adoption of IFRS is not associated with lower level of earnings management. In simply the difference between the actual earnings and reported earnings is higher after the adoption of IFRS suggesting that the earnings quality is not improved instead decreased with the adoption of high quality standards even though it is not statistically significant.

The results of the study are consistent with the results of Rudra and Bhattacharjee (2012), Van Tendeloo and Vanstraeen (2005) and Santy et al. (2016) which report a positive relationship between earnings management practices with the adoption of IFRS. However, the results of the study are not consistent with the results of Nouri and Abourb (2014) and Ismail et al. (2013)

which have reported significant negative relationship between absolute value of abnormal accrual and IFRS implementation.

The results of the other control variables used in the regression are consistent with the findings of Ismail et al. (2013) conducted in Malaysia except the result of the variable of leverage. Study in Malaysia indicates the significance of leverage (at 5 percent) whereas it is not a significant variable in the context of Sri Lanka which could be due to the comparatively less developed debt market in the country. The studies on African countries reports mixed findings on the earnings quality (Ozili 2016)

It is stated that the accounting standards reflect only one factor which determine the quality of the financial statements whereas there are several other factors representing social, institutional and political environment of a country which are linked as a chain in determining

Table II Regression model of absolute value of abnormal accruals on IFRS and other variables

<i>VARIABLE</i>	<i>CONSTANT</i>		<i>SIZE</i>		<i>PROFITABILITY</i>		<i>LEVERAGE</i>		<i>GROWTH</i>		<i>IFRS</i>
Panel A: Regression results of absolute value of abnormal accrual estimated using Dechow et al. (1995) model											
Coefficient	-0.489	**	0.044	**	0.021		0.083		0.029		0.034
t-value	-5.809		7.526		0.623		1.059		1.121		1.204
VIF			1.043		1.036		1.061		1.024		1.030
Adjusted R ²	0.101										
F- statistics	13.089	**									
n	538										
Model :	$ABACDEC_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 PROFITABILITY_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 IFRS_{it} + \varepsilon_{it}$										
Panel A: Regression results of absolute value of abnormal accrual estimated using Kasznik (1999) model											
Coefficient	-0.216	**	0.021	**	0.011		0.025		0.000		0.023
t-value	-4.008		5.746		0.509		0.506		0.196		1.277
VIF			1.043		1.036		1.061		1.024		1.030
Adjusted R ²	0.057										
F- statistics	7.537	**									
n	538										
Model:	$ABACKAS_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 PROFITABILITY_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 IFRS_{it} + \varepsilon_{it}$										

Notes: The full period sample covers from 2009 to 2014 and contains 157 firms with 538 firm year observations. ABACDEC and ABACKAS represents the absolute value of abnormal accruals estimated using Dechow et al. (1995) model and Kasznik (1999) model respectively; $SIZE_{it}$ is the natural logarithm of total assets for firm i at the end of year t ; $PROFITABILITY_{it}$ is the return on asset ratio for firm i in year t ; $LEVERAGE_{it}$ is total long term debt divided by total assets firm i at the end of year t ; $GROWTH_{it}$ is the share price divided by book value per share for firm i at the end of year t ; $IFRS_{it}$ is a dummy variable given a value of 1 if the financial statement is prepared under IFRS, 0 otherwise.

**,* significance at 0.05 and 0.10 levels respectively.

the quality of the information (Athanasios et al. 2013). Therefore, though the quality of the standards is a necessary condition, focusing entirely on the quality of accounting standards is not adequate to enhance the quality of the earnings at a particular country level (Ball 2006; Wulandari & Rahman 2004). The above argument is evident with the existing different results of the studies on the mandatory versus voluntary adopters (Paananen & Lin 2009), committed versus label adopters (Daske et al. 2008), the effectiveness of the implementation process (Shil et al. 2009), role of the auditor (Van Tendeloo & Vanstraelen 2005; Malofeeva 2018), internal controls structure (Hastuti et al. 2016) prevailing institutional framework (Haw et al. 2004; Wysocki 2004) and perception about the domestic GAAP (Hali et al. 2009) and the reporting incentives (Ball et al. 2000; Ball et al. 2003; Nijam & Jahfer 2016). Further it is stated that the existence of unrealized gains and losses along with the practice of fair value accounting has also led to increase the level of abnormal accruals and the impact would be worse with respect to the developing countries (Ball 2016) due to weakly developed capital market (Samuel 1981 cited in Mobarek & Keasay 2000). Similarly, Barth et al. (2008) highlights the elimination of alternative treatment under IFRS has raised a doubt on the ability of applying accounting measures that are more reliable and realistic with economic performances specific to a company and further states IFRS, being principle-based standards provide more opportunities to manage the earnings which leads to decrease the quality of the earnings.

Value Relevance of Earnings

The results of the multiple regression price earnings model and return earnings model are depicted in the table III and Table IV respectively.

The earnings are regressed with stock prices in terms of earnings per share and book values per share with the price earnings model to evaluate the association between earnings and share prices. The results of the evaluation are shown in the table III.

The coefficient of EPS from the price earnings model before and after IFRS adoption is 1.81 and 1.23 and both are significant at 5 percent level with a *t*-value 3.79 for pre IFRS period and 4.67 for post IFRS period. Further the coefficient of $EPS_{it} * IFRS_{it}$ is negative 0.18 and it is not statistically significant.

The result indicates that the adoption of IFRS has not resulted in increasing the value relevance of earnings in explaining the stock returns and the negative relationship indicates a reduction in the value relevance of earnings in the post IFRS period. The similar result is confirmed with

a negative coefficient of $EPS_{it} * IFRS_{it}$ indicating negative association between adoption of IFRS and value relevance of earnings.

The table III shows that the adjusted R^2 for pooled data is around 41 percent for the entire period whereas the same is around 42 percent for pre IFRS period and 47 for post IFRS period. Therefore, it indicates even with a reduction in value relevance of earnings, the joint model of book values and earnings is capable of explaining more variations in share prices in the post IFRS period.

Though the results of the study are consistent with the findings of Kargin (2013) and Nagakis (2013) highlighting loss of some informational content in the earnings with the adoption of IFRS, the results are not consistent with the findings of Barthov et al. (2002), Ismail et al. (2013) and Chebaane & Othman (2014) who report a positive significant relationship between earnings and stock prices indicating a higher value relevance in the post IFRS period.

The result of the evaluation of relationship between earnings and stock returns which is evaluated through the return earnings model is depicted in the table IV.

As indicated in the table IV adjusted R^2 value for overall period is stood at 1 percent whereas pre and post period account for 2 percent and 0.38 percent respectively. Further the study reports that positive value of 0.27 (significant) for EPS_{it}/P_{it-1} in pre IFRS period whereas same was a negative value of 0.21 (not significant) in the post IFRS period. Further the coefficient of interaction variable $EPS_{it}/P_{it-1} * IFRS_{it}$ is a negative value of 0.54 and significant at 5 percent.

Consistent with the previous model, a negative association between IFRS adoption and value relevance of earnings is confirmed through this model as well. Therefore, the results indicate that the ability of the earnings in explaining stock prices and stock returns has reduced in the post IFRS period than pre IFRS period. Further, the reduction of value relevance with respect to stock returns is statistically significant. The result indicates that the earnings reported under previous standards have a greater value relevance compared to earnings reported in post IFRS period with respect to the listed companies in Sri Lanka.

The results of the study are consistent with the findings of Negakis (2013), Paananen (2008), Zeghal et al. (2011) and Doukakis (2010). However, the results are not inconsistent with the

Table III: Regression on Value Relevance of Earnings using Price Earnings Model

Variable	Pooled Sample (Basic Model)			Pre IFRS (Basic Model)			Post IFRS (Basic Model)			Pooled Sample (Extended Model)		
	Coefficient	t-value	VIF	Coefficient	t-value	VIF	Coefficient	t-value	VIF	Coefficient	t-value	VIF
Constant	26.19	**	8.58	31.36	**	6.51	17.91	**	4.97	31.36	**	7.24
EPS _{it}	1.71	**	6.5	1.81	**	3.79	1.23	**	4.67	1.81	**	4.22
BVPS _{it}	0.63	**	12.35	0.79	**	7.92	0.62	**	11.69	0.79	**	8.82
IFRS _{it}										-13.45		-2.27
EPS _{it} *IFRS _{it}										-0.18		-1.08
BVPS _{it} *IFRS _{it}										-0.58	*	-1.65
Adjusted R ²	0.41			0.42			0.47			0.45		
F- statistic	185.61	**		90.83	**		126.64	**		89.27	**	
n	512			249			263			512		
Basic Model:	$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BVPS_{it} + \varepsilon_{it}$											
Extended Model:	$P_{it} = \alpha_0 + \alpha_1 EPS_{it} + \alpha_2 BVPS_{it} + \alpha_3 IFRS_{it} + \alpha_4 EPS_{it} * IFRS_{it} + \alpha_5 BVPS_{it} * IFRS_{it} + \varepsilon_{it}$											

Notes: P_{it} is the closing price of a share of a firm i at the year end t ; EPS_{it} is the earnings per share of firm i during the year t ; $BVPS_{it}$ is the book value per share of firm i at the end of the year t , $IFRS_{it}$ is a dummy variable given a value of 1 if the financial statement is prepared under IFRS, 0 otherwise.

**,* significance at 0.05 and 0.10 levels respectively.

Table IV: Regression on Value Relevance of Earnings using Return Earnings Model

Variable	Pooled Sample (Basic Model)			Pre IFRS (Basic Model)			Post IFRS (Basic Model)			Pooled Sample (Extended Model)						
	Coefficient	t-value	VIF	Coefficient	t-value	VIF	Coefficient	t-value	VIF	Coefficient	t-value	VIF				
Constant	-0.05	*	-1.75		0.07	1.22		-0.12	**	-4.60		0.07	1.62			
EPS _{it} /P _{it-1}	0.23	**	2.65	1	0.27	**	2.25	1	-0.21		-1.45	1	0.27	**	2.98	1
IFRS _{it}													-0.13		-1.40	3
EPS _{it} /P _{it-1} *IFRS _{it}													-0.54	**	-1.97	1
EPS _{it} /P _{it-1} *RISK _{it}													-0.01		-0.30	2
EPS _{it} /P _{it-1} *GROWTH _{it}													0.00		-0.61	1
EPS _{it} /P _{it-1} *TDTA _{it}													-0.20		-0.87	2
Adjusted R ²	0.01				0.02				0.0038				0.04			
F- statistic	7.02	**			5.07	**			2.09				4.85	**		
n	512				249				263				512			
Basic Model:	$RET_{it} = \alpha_0 + \alpha_1 EPS_{it}/P_{it-1} + \varepsilon_{it}$															
Extended Model:	$RET_{it} = \alpha_0 + \alpha_1 EPS_{it}/P_{it-1} + \alpha_2 IFRS_{it} + \alpha_3 EPS_{it}/P_{it-1} * IFRS + \alpha_4 EPS_{it}/P_{it-1} * RISK + \alpha_5 EPS_{it}/P_{it-1} * GROWTH + \alpha_6 EPS_{it}/P_{it-1} * TDTA + \varepsilon_{it}$															

Notes: EPS_{it}/P_{it-1} is earnings per share of firm *i* at the financial year *t* end divided by the closing price 12 months previously for firm *i* in year *t*; IFRS_{it} is a dummy variable given a value of 1 if the financial statement is prepared under IFRS, 0 otherwise; RISK_{it} is the β for firm *i* in year *t*; GROWTH_{it} is the share price divided by book value per share for firm *i* at the end of year *t*; TADA_{it} is the total debt to total assets for firm *i* at the end of year *t*; RET_{it} is holding return for a 12 months period before the year end for firm *i* in year *t*.

**, * significance at 0.05 and 0.10 levels respectively.

findings of Ismail et al. (2013), Alali and Foote (2012) and Uwuigbe et al. (2017) who report a positive significant coefficient for earnings in post IFRS period than pre IFRS period.

The achievements of the benefits of the global standards by all the countries which adopted IFRS were unable to be proven with the available mixed findings in the literature. Furthermore, previous studies highlight the existence of other variables that determine the success of implementation process apart from the quality standards itself.

Despite the long standing debate over fair value accounting it plays a vital role in IFRS and Peng and Bewley (2010) highlight the availability of little evidence and in depth discussion on the ability of developing countries to adapt fair value accounting. Ball (2006) stated that the fair value estimations could be noise and worst with respect to some countries with their relatively illiquid capital markets and Jermakowicz (2004) stated use of fair values brings higher volatility in to the financial information.

Further, Leuz and Wysocki (2008) highlight the ineffectiveness of IFRS on the absence of appropriate capital market and the proper institutional structures to facilitate the process. Ball et al. (2003) emphasise that the availability of preparer incentive towards providing low quality financials with the countries in the Asian Region.

Outa (2011) emphasises the weak institutional framework and economic and political volatility of many developing countries could work against the attached benefits of IFRS.

Therefore, it highlights the importance of building the necessary infrastructure for the effective enforcement mechanism to get the maximum benefit out of these high quality standards to avoid it being another brand that the country borrows which provides small benefits to the users of financial statements. Therefore, a careful analysis is required to assess whether the required effort, timing, and the changes with the convergence process was devoted in the required depth by all the parties engaged throughout the implementation process by Sri Lanka as a developing country.

SUMMARY AND CONCLUSION

The study is carried out with the aim of assessing the impact of convergence with IFRS on the earnings quality and value relevance of earnings in a frontier market like Sri Lanka. Accordingly, this study examines whether the earnings quality after the introduction of IFRS is higher than the pre IFRS period and whether the reported earnings is more value relevant in the post IFRS period.

Findings of the study do not indicate any supportive evidence to state that the earnings management practices by the listed companies are reduced with the adoption of IFRS, instead the study confirms an increase in earnings management practices in the post IFRS period. Therefore, it indicates that the quality of the earnings is not improved with the adoption of the IFRS in the context of Sri Lankan listed companies.

Further results suggest that the adoption of IFRS is unable to improve the value relevance or the explanatory power of earnings with reference to the stock prices, instead it was reduced in the post IFRS period. Similarly, IFRS adoption has not tended to improve the value relevance of earnings on stock returns, instead it tends to decrease the value relevance in the post IFRS period significantly.

Therefore, the findings of the study confirm the existing argument in the literature as put forward by Ball et al. (2003) 'adopting high quality standards might be a necessary condition for high quality information, but not necessarily a sufficient one'.

Even though the test period is consistent with previous studies, it evaluates a relatively short time period and therefore, over a longer period the results could be improved with the improvement in macro environmental setting that builds the necessary infrastructure for effective implementation, familiarity with the process by the parties and with the improvement in implementation guidance of IFRS and thus further studies could extend the period considered in the study.

Further analysis of the reasons for cross country differences of the results on earnings quality and value relevance with the adoption of IFRS would also be a good area for future studies specially with reference to developing countries. This study only focuses on earnings quality and value relevance whereas there are several other variables as suggested by other studies in the literature which are affected with the convergence with IFRS by a country and those would also be areas for future studies.

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Fortune Favors the Bold: Evidence from an Asian Bank Merger

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Abstract

This study surveys prior literature on mergers and acquisitions (M&A) with a special focus on factors affecting M&A outcomes and valuation. In addition, this study analyses one of the largest and most controversial mergers from the Philippine Banking sector: The merger of the fifth largest bank (BDO) with the third largest bank (Equitable PCI) in Philippines. This merger provides an ideal setting for a case study, subsequent links to M&A theories and generalizable lessons for future bank mergers. Furthermore, this study identifies key factors and steps taken by BDO management and the combined entity BDO Uni bank to obtain success. The acquisition spanned from 2004 to 2006 and was fully completed on December 27th, 2006 with BDO as the surviving entity renamed as Banco de Oro Uni bank (BDO Uni bank). BDO Uni bank had an increase in net income of 3.4 million. In addition, a doubling of its assets from PHP (Philippine peso) to 600 Peso Billion (Pbn) in the subsequent years relative to pre-merger BDO levels. Presently, BDO Uni Bank continues to generate stable revenue and be ranked number one in the Philippine Banking sector. **Keywords:** Shariah compliant hotels, purchase intention.

Key words: mergers, acquisitions, synergies, cultural integration

JEL Classification: G34, M00

1. Introduction

M&A's¹ are a key method for an organization to achieve growth, diversity, and profitability².

Empirical research over the past couple of decades has revealed a great deal about M&A motives and factors affecting their outcomes. A profusion of prior literature identifies several motives behind M&A's and factors affecting M&A outcomes. In addition, majority of prior studies demonstrate that M&A's result in value creation for the target firm shareholders. Given this setting, this paper will provide further evidence on these areas by surveying prior literature and developing a case study on an interesting yet controversial bank merger from Philippines. The study poses the following research

questions: 1. what are the motivations and synergies associated with this particular merger? 2. What is the pre and post-merger performance of the banks involved?

3. What are the success factors for this particular merger? 4. What are the generalizable lessons and managerial implications from this case study? To the author's knowledge this is the first

thorough case study on this particular bank merger. This deal was selected due to its' implications on the Philippine (10th fastest growing economy) banking sector and generalizable lessons to other bank mergers especially in emerging economies. Moreover, majority of M&A deals involve the acquirer being considerably larger than the target or equal in size. However, in this particular setting, the deal was controversial since a smaller bank was attempting to acquire a considerably larger bank³. The merger of the third largest bank, Equitable PCI with the fifth largest bank BDO in Philippines was initially perceived as hubris on the part of BDO management.

Several factors come into play especially with bank mergers. Firstly, the acquisition of a larger target by a smaller acquirer is rarely successful primarily due to the burden of financing. Secondly, economic growth also becomes a key factor enabling the merged entity to grow and increase profits. Thirdly, bank mergers are notoriously difficult and expensive due to incompatibility of systems and integration of different corporate cultures⁴. Fourthly, regulatory approval is required for bank mergers in many countries. Moreover, one of the key questions that arise in bank mergers involve whether branch networks are complementary or overlapping?

¹Mergers and acquisitions are often used interchangeably. However, on one hand in an acquisition, one firm acquire a part or whole of another firm.

On the other hand, in a merger, two or more firms unite to form a new entity.

² However, wrong motivations and mis-integration of M&A's leads to a large number of failures (Krug, Wright, and Kroll, 2014). In addition, Schweiger, Csiszar, and Napier (1993) show that acceptance and proper integration post merger is important in order to obtain strategic benefits.

³Mergers and acquisitions are a popular way of expansion in the Philippine banking sector primarily among smaller lenders, even in rural areas.

⁴They usually only succeed if the two parts of the bank continue to operate largely separately and are only integrated after some time. For example, consider the acquisition of the National Bank by ANZ Bank. Post merger integration took several years.

If they are complementary, similar to the case of the Wells Fargo's takeover of Wachovia or the merger of the Nordic banks to create Nordea, then the merger is likely to be easier. If they are overlapping, there is either going to be an unpleasant loss of jobs which will lower employee morale resulting in the combined entity being inefficient. Moreover, aggressive upward acquisitions can turn sour, for example, consider the HBO or RBS case.

The traditional recipe for success is that a strong acquirer buys the weak, when the targets' price is low such as Santander with Abbey, Alliance and Leicester. Shleifer & Vishny (2003), Rhodes-Kropf & Viswanathan (2004) support this view stating that overvalued firm managers acquire comparatively firms undervalued in scenarios where firm value diverge from the intrinsic value. Given this setting, the BDO and Equitable PCI bank merger is an interesting case with valuable lessons that can be generalized to other bank mergers especially in emerging bank-based economies.

Researchers and practitioners generally select a case study approach for M&A's especially when they intend to identify factors that impact an M&A deals⁵ success or failure. Haspeslagh & Jemison (1991), Shanley & Correa (1992) and Marks & Mirvis (1998) state that case studies are able to explore numerous aspects of M&A deals occurring in different environments subject to various influences. These influences are often found too difficult to be captured by alternative analysis techniques. In addition, the case study approach enables a proper value creation analysis as compared to identifying events that create value. Halebian et al, (2009) state that case studies are a powerful method considerably underutilized in M&A research where survey papers are more the common norm. Moreover, a case study may provide a rich idiographic understanding of integration processes in M&A's, wherein the longitudinal, multi-faceted strengths of case studies excel.

Moving onto the case study, at the time of BDO's initial offer to merge, Equitable PCI had capital three times as much as BDO. Analysts and regulators alike were concerned regarding the repercussions of this transaction on the Philippine banking sector and the economy. Moreover, the deal resulted in widespread negative media attention nationwide. Subsequently, the BDO merger with Equitable PCI was completed on December 27th, 2006 with the formation of BDO Uni bank.

⁵For example, Appelbaum et al (2000) discuss the role played by cultural compatibility in terms of leadership and M&A success.

The analysis is conducted both from a qualitative and quantitative perspective and provides evidence of value creation in M&A's. The analysis shows that even a deal with overvaluation issues in the short run would still result in value creation in the long run (refer Shliefer and Vishny 2003). The new entity BDO Uni Bank increased their net income from 3.1 million to 6.5 million relative to BDO on average. Moreover, BDO Uni bank doubled its total assets from 300 Pbn to 600 Pbn and became the number one bank in Philippines. In addition, this study provides interesting policy implications to the emerging market banking sectors and the M&A literature in general.

Section 2 conducts the literature review and deals with theories involved in M&A outcomes. Section 3 provides a detailed qualitative and quantitative analysis. Section 4 discusses generalizable lessons and managerial implications of the study. Section 5 concludes the study.

2. Literature Review

For over three decades, academics and practitioners alike sought to identify factors behind successful mergers. Prior academic literature documents the failure of M&A's to generate excess returns for the acquirer⁶. Researches have also focused on understanding the main motivations for M&A's, value creation, and determinants of M&A returns. However, this study explores the prior literature with an aim towards differentiating between various views that affect M&A outcomes. This literature review section is segmented into three related areas: theories on M&A activity, motivations behind M&A deals and factors affecting M&A outcomes. In addition, refer to Berger, Demsetz, & Strahan (1999) and DeYoung, Evanoff & Molyneux (2009) for more detailed reviews of bank mergers.

2.1 Merger and Acquisition Theories

Widespread research on M&A activity has been conducted in the US and European markets. However, comparatively, there is a dearth in research conducted on fast growing emerging markets, especially in Asia such as the Philippines. M&A's are an important tool for businesses and this section considers the history of M&A's. This study identifies the following benefits of M&A's from prior literature:

Economies of scale, entry to new markets, expansion of market share, new technology acquisition and surplus fund utilization. M&A activity generally occur in waves called merger waves and can be explained by neoclassical and market valuation theories.

According to neoclassical theory, merger waves occur as a result of firms from different industries reacting to economic shocks, deregulation and new technologies. This explains the industry clustering of M&A activities. Gort (1969), Mitchell & Mulherin (1996) and Harford (2005) provide empirical support for this theory. Another theory suggests an association between merger waves and market valuations. According to Shleifer & Vishny (2003)'s market valuation theory of merger waves: Deviations from fundamental values result in managers using overvalued firm stock to acquire undervalued firm assets. Rhodes-Kropf, Robinson & Viswanathan (2005) also support the market overvaluation theory suggesting that more acquisitions occur during bubbles periods. The next section discusses motivations behind M&A's.

2.2. Merger Motivations

Why do companies opt for M&A's? Pfeffer (1972) states that M&A's are caused by a need to make a firm less dependent on its environment. Haunschild (1993) explains motivations for M&A's being associated with financial, resource dependence, managerial and agency theories. Capron & Hülland (1999) identify market power, efficiency and effectiveness as value creating factors in M&A's. Ahuja & Katila (2001) identify technological and non-technological factors as M&A motivations. They state that non-technological M&A motivations focus on getting access to a wider range of distribution channels while technological motivations focus on entry into new markets/ market power. Chang & Rosenzweig (2001) and Hayward (2002) associates M&A's with market related motivations such as entering, strengthening, expanding to new markets. In addition, synergy motivations for M&A's are identified by Golubov & Travlos (2012), Jensen & Ruback (1983); Bradley, Desai & Kim (1988); Seth (1990); Doukas & Travlos (1988); Wang & Xie (2009); Bris & Cabolis (2008); Scholes & Wolfson (1990); Hayn (1989); Manzon, Sharp & Travlos (1994); Houston, James & Ryngaert (2001); Hoberg & Phillips (2010).

Moreover, the following studies identify agency motivations behind M&A's: Amihud and Lev (1981); Lewellen, Loderer & Rosenfeld (1985); Jensen (1986); Harford (1999); Datta, Iskandar-Datta & Raman (2001); Masulis, Wang & Xie (2007); Lin, Officer & Zou (2011);

Finally, the following studies identify managerial overconfidence or CEO hubris behind M&A motivations: Roll (1986); Hayward & Hambrick (1997); Doukas & Petmezas (2007); Billett & Qian (2008); Malmendier & Tate (2008); Kolasinski & Li (2013). In addition, prior literature conclude that M&A's improve combined entity performance creating a competitive advantage (Lubatkin, 1983; Schweiger and Weber, 1989; Krug, Wright, and Kroll, 2014; Galpin and Herndon, 2014; Cunha, 2015; Sinclair and Keller, 2017). The next section discusses factors affecting M&A outcomes and theories involved.

2.3 Factors Influencing M&A Outcomes & Theories Involved

What factors affect M&A outcomes? Majority of prior literature show that M&A's are value destroying leading to productivity issues and inefficiencies. This section identifies five key factors that affect M&A outcomes: 1. Overvaluation; 2. Agency Problems; 3. Management Factor; 4. Employee Factor; 5. Cultural Merger;

1. *Overvaluation*: It is an implicit assumption that M&A's occur in highly competitive markets resulting in prices being bid up to their intrinsic value. Sirower (1997) urges top management to identify synergy gain extraction methods and the relevant strategies pre-merger. Prior literature warns management not to pursue overvalued M&A deals, especially if the price exceeds their own valuations (Haspeslagh & Jemison, 1991; Kusewitt, 1985). Haspeslagh and Jemison (1991) report that management view inadequate due diligence processes result in sub optimal M&A outcomes. Martin (2017) finds that purchase prices exceeding that of market value maybe a cause for M&A failures⁷.

2. *Agency Problems*: Agency issues in M&A's arise from agents involved in negotiating the transaction price of the deal. Kesner, et al, (1994) identify an agency problem between shareholder interests and that of the CEO during M&A's. In addition, Lubatkin (1983), Schmidt & Fowler (1990) state that CEO compensation increase relative to firm size. Kroll, et al (1997) find that management owned firms generate significant negative returns following a merger. Another stream of research considers CEO hubris as a key factor behind M&A failures (Roll, 1986).

⁷ For example, Colvin (2003) state that although the AOL and Time Warner merger was considered to be an extremely important merger, its announcement resulted in their stock price plummeting considerably.

Hayward & Hambrick (1997) find that the premiums paid in M&A's signal the amount of value to be created post-merger by the acquirer. They find a significant relationship between CEO hubris and the premium size.

3. *Management Factor*: The ability of the two management teams to work together, complimentary management and prior experience in M&A's are also important factors that may

affect deal success. Shanley and Correa (1992) find that management teams of both firms agreeing on strategic objectives improve post deal performance. Datta (1991) find that managerial style differences in both firms can have a negative effect on post deal profitability. Walsh (1988) observe a significantly high turnover rate following an M&A within a five-year time window. Krishnan, et al (1997) observe that post deal performance is positively associated with complementary management teams and negatively associated with top management turnover at the target firm.

Singh and Zollo (1998) provide evidence of a negative impact on deal performance from high turnover of target firms' top management in the US banking industry. Schweiger et al. (1993) show that intra firm differences are also associated with the deal outcome. Schweiger et al. (1997) state that successful M&A's depend on the ability of both management teams to work together and resolve any differences.

Experience of management on M&A's is also a key factor that affect M&A outcomes. Integrating two different entities into one is a key challenge faced by acquiring managers in M&A deals. Herein lies the importance of prior management experience in M&A's. Jemison & Sitkin (1986) state that success in M&A's is determined by extensive planning and proper post-merger integration. Singh and Zollo (1998) find that knowledge acquired in previous M&A deals positively impact performance in the banking industry. Larsson and Finkelstein (1999) identify a U-shape of the experience associated with M&A's.

4. *Employee Factor*: Job losses post-merger creating employee distress is also considered a significant factor affecting M&A outcomes. Subsequently, prior academics analyze the integration process post-merger and its impact on employees. Haspeslagh and Jemison (1991) find that M&A success also depends significantly on an encouraging and co-operative environment between the two merging firms.

Galpin and Herndon (2000) state the significance of effective communication during M&A's⁸. Waddock & Graves (2006) state that post-merger, the acquirer often impose their policies on the combined entity jeopardizing cultural integration and employee satisfaction.

5. *Distinct Cultural Merger:* This particular view focus on the cultural differences between the Acquirer and target that needs to be reconciled and integrated post-merger. Post-merger integration of cultures also focus on the manner in which employees are assimilated into the combined firm⁹.

Similar to Buono et al. (1985)'s firm cultural conceptualizations, Hofstede, Neuijen, Ohayv & Sanders (1990) also find difficulties in changing firm culture. Given this setting, difficulty in cultural adaptability becomes reasonably prominent during the M&A process. In addition, Ivancevich et al (1987) and Schweiger & DeNisi (1988) emphasize the significance of sound communication¹⁰ during the M&A process. According to them, sound communication reduces confusion and uncertainty during the M&A process resulting in higher productivity, job satisfaction, turnover and lower absenteeism. Nahavandi & Malekzadeh (1988) find that agreement to the M&A deal by both acquirer and target management is a key factor of a successful merger. Chatterjee et al (1992) identify a significant negative correlation among cultural differences of the target and acquirer management teams and excess stock returns. However, Cartwright & Cooper (1992) state that the key factor is the ability of the two firm employees to work together rather than the cultural differences of the two firms. Forstmann (1998) state that the post -merger integration process is a key factor in the M&A success. Schweiger & Goulet (2005) identify distinct cultures result in defensiveness and the maintenance of separate acquirer and target firm identities post-merger. Therefore, they state that elimination of cultural differences is key to successful integration and M&A success. Lodorfos & Boateng (2006), Mitleton (2006), Lin et. al. (2006) identify cultural diversity, employee treatment and communication as key factors in post-merger integration and success.

⁸According to Goldman (2015) Hewlett-Packard let go 30,000 employees following the Compaq merger in 2002 and identified failures in the human resource integration process.

⁹Buono and Bowditch (1989) suggest two methods to introducing cultural changes into a firm post merger. Firstly, by studying employee attitudes and through that getting them to adopt a new set of values and beliefs, thereby changing their associated behavior. Sound communication should be utilized to modify the underlying beliefs via memos and announcements. Secondly, by letting go of employees who are not a good fit to the new culture and recruiting new employees who are a better fit.

¹⁰For example, Korean automobile manufacturer, Daewoo Motors encountered several integration issues following their acquisition of companies in Romania and Poland. In another example, Gutknecht and Keys (1993) find that Esmark's CEO, Donald Kelly communicated with over a 00 Norton Simon headquarters employees on redundancy issues and the compensation plans being offered. Kelly's open communication of the issues faced by the company on staff redundancies and a generous severance pay plan reduced resentment from resigned employees and better management of retained employees.

Saunders et. al. (2009) state that sound communication and pre-merger audits of cultural differences are important steps to achieve proper successful cultural integration post-merger. Mohibullah (2009) state that the acquirer should implement a top down communication network among employees to decrease confusion during the M&A integration process. Melkonian, Monin,

& Noorderhaven (2011) and Xing & Liu (2016) find that post-merger situations and integration issues influence employee identity on both sides of the M&A deal. Weber & Tarba (2012) state that a lack of transparent and congruent activities during various stages of the M&A process might lead to failures. Doseck (2012) discuss various aspects of firm culture, human resources and change management during the integration phase of M&As. Zaheer et. al. (2013) identify that management complementarity between the acquirer and target instead of similarity would lead to successful autonomy and integration post-merger. Rottig et. al. (2014) state that poor connections among the acquirer and target limit contributions in the M&A integration process. Syazliana et. al. (2015) identify early planning and cultural integration as being critical to M&A success in Malaysia. Martin (2017) identify purchase price, post-merger strategic motives and implementation as key factors associated with the success of any M&A deal. Spoor & Mei-Tai (2017) find that employee morale during an M&A deal is largely affected by social identities and communities of both firms involved.

3. BDO Acquisition of Equitable PCI Bank (EPCIB): Case Study

Throughout history, Philippine banks' primary method of expansion has been through investments in M&A's and by establishing new branches¹¹. However, a key requirement for an M&A deal is shareholder value creation. In addition, according to prior literature the cultural fit and integration post-merger is an important factor as well, even when the M&A deal makes sense financially. The following questions are posed in general prior to an M&A deal: What is the motivation behind the acquisition? Is the purchase price being considered fair (conduct a cost benefit analysis and financial valuation)?

¹¹Philippine banking sector consists of the following key players: 1) SM Investment Corporation: Henry Sys' Groups' premier bank, Banco de Oro or commonly known as BDO was interested in acquiring Equitable PCI (EPCI) since 2003. BDO subsequently announced intentions of acquiring 10% of EPCI's treasury stock. 2) John Gokongwei Group: The Gokongwei group sold their stake of Far East bank and PCI bank in 1999. The group has expressed interest in acquiring Equitable PCI Bank shares with the support of the Go Family, Equitable PCI's controlling shareholder. 3) Ayala Group: The Ayala Group owns Bank of Philippine Islands (BPI) which is ranked second with respect to asset size. Far East Bank and Citytrust Banking Corp. were both acquired by BPI in 1999 and 1996 respectively. BPI has also expressed desires to expand through acquisitions in the future. 4) George Ty Group: The Ty family owns the Metrobank which held the number 1 rank in the banking sector. 5) Lucio Tan Group: Lucio Tan possessed a 33.5% stake in Philippine National Bank (PNB) and also controlled Allied Bank.

Financial valuation generally includes industry, firm and economic analysis. What are the potential benefits and synergies to be considered from the merger? In addition, cultural, economic feasibility of the M&A deal and risks involved need to be addressed.

This section provides a case study analyzing one of the most important and interesting M&A deals from the Philippine banking sector. In 2005, BDO considered expanding its market share by acquiring Equitable PCI bank with a large number of established branches. Subsequently, BDO¹² initiated talks with Equitable PCI Bank management to discuss the possibility of a friendly takeover. Following the successful merger, newly created entity BDO Uni bank at present holds the number one position in the Philippine banking industry.

3.1 Stakeholders in BDO & Equitable PCI Merger & Competition

BDO or commonly known as Banco De Oro was SM Groups (one of the largest conglomerates in Philippines) flagship bank. Historically, BDO has been known to expand aggressively through M&A's to build up branch networks and assets. In 2001, BDO acquired 57 branches nationwide by merging with Dao Heng Philippines. The following year BDO acquired 66 branches with 11 Pbn portfolio of deposits by merging with Banco Santander and Santander Investment Securities Philippines. Subsequently, in 2003 BDO observed a prime opportunity to acquire Equitable PCI Bank. Therefore, in 2004, BDO initiated proceedings to acquire the 26% stake of Equitable PCI bank from Social Security Systems (SSS). The Philippine government was in possession of the remaining 12% stake via Government Service Insurance System (GSIS). Equitable PCI was a household brand name with its' stable balance sheet were all good motivations for a potential acquirer.

Equitable PCI an attractive target!

“Equitable Banking Corporation” (EBC) was the former name of Equitable PCI bank (EPCI) when they opened on September 26th, 1950. Equitable PCI was the first commercial bank licensed by the Philippine Central Bank which was newly created. In 1999, Equitable bank acquired PCI bank becoming the second largest bank in terms of assets overtaking BPI¹³.

¹² BDO was publicly listed on the Philippine Stock Exchange in 2002. In addition, BDO acquired Dao Heng Bank's Philippine subsidiary on June 15th, 2001. BDO ranked 5th, 6th and 8th with respect to resources and loans, deposits and capital respectively among the 41 commercial banks in Philippines as of December 2005

¹³ Equitable Card Network dominated the credit card industry in Philippines as a merchant acquirer and a third-party processor providing them ample motivation to increase their retail lending. PCI Capital Corporation was a popular name in investment banking and PCI leasing and Finance possessed a high capital base and a large clientele network. This acquisition of PCI bank by Equitable bank resulted in a merger wave in the Philippine banking sector. Not one to be left behind, BPI acquired Far East Bank targeting the number one position in banking and claiming it for a short time. Then,

Prior to being acquired by BDO, Equitable PCI was the third largest domestic private bank with respect to loans, deposits and capital. Equitable PCI offered innovative and also traditional deposit products, cash management, international, commercial, corporate banking, money market, trust and treasury services. They catered to a wider base of retail and corporate clientele with an extensive distribution network.

Refer Figure 1A

Prior to BDO's merger, Equitable PCI's key shareholders were as follows: Social Security System (SSS): 29%, Go Family: 24.76%, Government Service Insurance System (GSIS): 12.7%, EBC Investments: 10.48%. Given this setting, on January 6, 2006, BDO made an initial offer of 41.3 Pnb through a 1.6 BDO share per Equitable PCI swap to buy Equitable PCI. Equitable PCI was given till January 31st to consider the deal. However, GSIS initially opposed the deal and considered a counter proposal of a merger with BDO where Equitable PCI would be the surviving firm. At the time of the merger announcement, Standard & Poor's stated that a successful merger would result in an improvement in Equitable PCI's debt rating with no change in BDO's debt rating. Prior to the merger, Equitable PCI had a grade "B" debt rating while BDO had a "B+" rating. In addition, UBS claimed that Equitable PCI shareholders would realize the BDO offer attractive as it would increase Equitable PCI's capital adequacy ratio (CAR) making it a timely offer especially under new International Accounting Standards. Furthermore, UBS forecasted an increase in Equitable PCI share price to 73.60 PHP, more than the intrinsic target price of 67 PHP given the BDO offer. Hence, subsequently BDO ended up paying a hefty premium to acquire an already overpriced Equitable PCI stock.

However, the interesting fact is that even given the hefty premium, BDO was able to recover their investment in several years due to proper motivations and various strategies identified in this study later on.

Refer to Figures 2A and 3A

continued on a merging spree with Asian Bank, Solid Bank, Philippine Banking Corp and Global Bank to finally become the largest bank in Philippines. Hence, Equitable bank merging with PCI in 1999 resulted in a consolidation of the largely fragmented Philippine Banking Sector to some extent.

Competition

Foreign investors¹⁴ were also interested in Equitable PCI and submitted a bid of 90 PHP each for SSS shares; These Investor's identity was not made public. GSIS stated that offers must be submitted by March 6th to the bidding process for their shares at a minimum value of 92 PHP per share or higher.

At the time of the BDO merger announcement, there was widespread speculation brewing in the market that BDO and Gokongwei (existing shareholder of Equitable PCI) camps may be drawn into a bidding war for the Equitable PCI treasury shares. Note that previously, BDO only bid for 43.50 PHP per share for SSS's 26% stake in Equitable PCI. Subsequently, they were offering 43.50 PHP per share or a 10% premium over the weighted average share price over a mutually agreed time period. In addition, when Gokongwei sold his stake in PCI Bank in 1999, he obtained 290 PHP per share while other shareholders were offered a share swap of three Equitable Bank shares for every one PCI Bank shares¹⁵.

In 2006, many analysts downgraded their rating of Equitable PCI Bank to a "Sell" recommendation from "hold" following a 21% run-up pushed up its 2006 price to earnings ratio to 19.4 and its price to book value to 2.4, making it the most expensive banking stock in the Philippines. Hence, while Equitable PCI remained an attractive target in many aspects, its stock price was considerably overvalued. Therefore, we can safely assume that this particular deal contradicts the overvaluation view to some extent. BDO management did overpay for Equitable PCI bank stock with a high premium (closer to a 10% premium initially).

Given the above setting, several key players were interested in Equitable PCI. However, finally, on August 5th, 2005, BDO acquired a 24.76% stake of Equitable PCI. BDO and Equitable PCI board members agreed to a modified stock swap deal of 1.8 BDO shares instead of 1.6 shares for every Equitable PCI share on November 6th.

¹⁴However, the law firm representing the two foreign investors: Siguion Reyna Montecillo & Ongsiako informed on May 8th, 2006 to Government Service Insurance System (GSIS), that their client was no longer interested in acquiring the shares.

¹⁵This amounts to a 96.67 PHP price for Equitable Bank at the time of the swap. Therefore, Gokongwei was prudent in not being lured into a bidding war over Equitable PCI and BDO deal. Especially since Equitable PCI stock was trading at 49.50 PHP which is half his selling price in 1999. However, Equitable PCI's asset size from 1998 has tripled from approx. 100 Pbn to approx. 300 Pbn at the time of the BDO offer. Initially, the TradeUnion Congress of Philippines also proposed to buy the SSS shares with 50% in cash and BDO shares respectively. This would give SSS an investment in BDO and a partial return of capital. However, Equitable PCI board voted to retire these shares even with stiff opposition from GSIS. These shares, if auctioned, would have joined the 12-percent GSIS block. This auction would probably have thwarted a merger with BDO as the 92 PHP share price would become more reasonable. GSIS even offered a cash buyout of SM groups' 34% stake for 79.50 PHP per share on March 23rd. This cash offer would have given SM group approx. 8 Pbn. However, this deal was followed by allegations of hyping the market, resulting in an increase of the share price of Equitable PCI bank valued at approx. 80 PHP as of March 24th.

BDO and Equitable PCI shareholders approved the transaction on December 27th, 2006. In addition, the Philippine central bank and the Securities Exchange Commissions' approval for the deal was obtained in early 2007. Post-merger key shareholders were: SM Investments Corporation: 85.6%, Trans Middle East Philippines Equities: 7.13%. The key shareholders following the merger are as follows: SM Investments Corporation: 40.87%.

Refer Table 1A

Benefits to Equitable PCI Stakeholders from BDO merger

Although initially there was resistance from the Equitable PCI main shareholder GSIS, the rest of the Equitable PCI shareholders were swayed by the attractive acquisition price and future benefits from BDOs' dividend policy. Moreover, the merger would provide a stronger platform to execute Equitable PCI's growth plans. From Equitable PCI customers' point of view, the merger provided better access to a wider range of products and a better customer experience. From Equitable PCI employees' point of view, the strong re-branding of the merged entity provided a strong cultural fit. Finally, BDO completed the merger with Equitable PCI in 2007 and renamed itself as BDO Uni bank.

3.2 Motivations of BDO & Synergies Created

Motivations behind M&A proposals are a key factor and often affects M&A outcomes. This study identifies several reasons behind the BDO deal: 1. Belief of success by BDO top management (reassurance the merged entity can lead the banking sector; be bolder). 2. Competitors (Defeat of a key competitor), vulnerability of other competitors such as Metro bank, future obstacles from other competitors). 3. Expansion (increasing BDO franchise value). 4. Overvalued stock (Excess cash for acquisitions). 5. Future vision. 6. Wealth creation (Financial). 7. Legislative support (Deal was eventually supported by the Philippine central bank and the Securities and Exchange Commission).

Furthermore, this study identify that the merger provided BDO with the following benefits: 1. Substantial revenue and cost synergies. 2. Dominant pro-forma market position. 3. Enhanced distribution network. 4. Improved balance sheet management. 5. Broader customer base and relationships (establishes scale, exposure to regional economic diversity and additional platform for growth). 6. Market leading position in core business lines.

7. Accretive to EPS (Accretive merger for BDO with Equitable PCI's strong predicted cash flows).
 8. Increased product diversification.
 9. Long term growth projects (Equitable PCI's profitable credit card business).
 10. Proven management teams (both management teams possessed valuable experience from past successful mergers, solid shareholder returns and cash flow generation).
- Hence, given the above rationale, BDO justified this deal as a key strategic merger. Cost savings from the merger would arrive from overlaps and duplications from 120 branches. Revenue benefits would arise with size and scale, as the combined entity would rank No. 1 in all major sectors. The BDO offer implied a 2.3 times swap ratio. At the time of the initial offer from BDO, Equitable PCI management viewed the deal would be dilutive in the first two years and finally breaking even in the third year. In addition, the financing strategy for the deal was structured to maintain BDO's solid investment-grade credit rating. Moreover, market analysts reiterated that BDO is a top performer with a target price of 47 PHP. Hence, while the deal would be initially dilutive to BDO, this would outweigh the strategic transformation the deal would bring to the bank.

3.3 Empirical Analysis of the Merger

The merger between Equitable PCI bank (ranked 3rd) and BDO (ranked 5th) resulted in BDO Unibank (largest bank in Philippines). The tables and graphs provide empirical evidence pre and post-merger for both banks from financial statements, share prices, public and private information gathered from various parties involved in the merger.

A correlation analysis was conducted on the total liabilities, total assets, and the revenue of BDO and Equitable PCI from 2003 to 2006. Total assets and liabilities have a significant positive correlation of 0.76 and 0.8 respectively. This result can be explained as both banks mirroring each other's behavior by expanding their assets and liabilities to obtain more market share as competitors. In addition, there is a negative significant correlation between revenues of the two banks identifying them as competitors. Moreover, this gives further support to BDO's motives of taking out a strong competitor and at the same time obtaining more market share by acquiring Equitable PCI.

Refer Table 2A

Table 2A, shows that BDO had 304Pbn while Equitable PCI had 345 Pbn of total assets on December 2006. Post-merger total assets of BDO Unibank increased to 617 Pbn. Prior to the

merger, Equitable PCI and BDOs' net loans were close to approx. 100 Pbn and expanded to 315 Pbn post-merger. Moreover, total liabilities and total deposits of Equitable PCI and BDOs' increased from 297 Pbn and 280 Pbn in 2006 to 556 Pbn in 2007 and from 229 Pbn and 241 Pbn to 445 Pbn in 2007 respectively.

Refer Table 3A

Table 3A, shows that Equitable PCI bank and BDO had net interest incomes of 13 Pbn and 8 Pbn, in 2006 which increased to 21 Pbn in 2007 post-merger. Moreover, Equitable PCI and BDO had a net income of 3.27 Pbn and 3.13 Pbn in 2006 December which post-merger increased to 6.52 Pbn. Therefore, Both Tables 2 and 3 show evidence of significant expansions in the income and balance sheet of BDO Unibank, resulting in value creation post-merger.

Refer Tables 4A and 5A

Table 4A show several key ratios of BDO, Equitable PCI and BDO Uni bank post-merger. In December 2006, Equitable PCI had a net interest margin of 4.3%, while BDO's was 3.3% which settled at 4% post-merger. Implied interest payments are a key component in the Net Interest Margin (NIM) calculation. In the case of BDO and Equitable PCI bank, implicit interest payment effects on NIM showed signs of concentration following the consolidation period due to changes in combined entity operations and revenue structure. Equitable PCI bank and BDOs' return on assets of 0.18% and 1.16% in 2006 increased to 1.41% in 2007 for the combined entity BDO Uni bank. Return on assets (ROA) measure effectiveness of the firm's assets utilization in generating profits net of expenses. Hence, these results show improved ROA numbers possibly due to new combined entity better managing its assets to generate profits.

Moreover, BDO Uni bank enjoyed a larger client base and an increase in number of offices and branches widely dispersed across the Philippines post-merger. Interestingly, Equitable PCI and BDO had earnings per share(EPS) of 4.89 and 2.89 respectively in 2006 which decreased to a 2.57 post-merger. This can be due to an acquisition being an immediate cost to shareholders bringing in value creation and revenues only in subsequent years resulting in a lower EPS for the combined entity immediately. As of 2015, BDO Uni banks EPS remain at a healthy 6.84. Following the merger in August 2007 BDO Uni bank was given an improved debt rating especially with better conditions in the Philippine banking sector. At the time of the re-rating BDO Uni bank shares traded with a 2.8 price to book ratio and a prospective P/E ratio of 18.

In addition, Equitable PCI and BDO had a book value per share of 63.7 and 22.91 in 2006 which settled at 23.45 post-merger. Eight years post-merger, book value per share settled at 53.17 in 2015 due to increases in growth, productivity and financial stability. Figure 4A shows Equitable PCI banks' revenue figures from 2003 to 2006. A small decline in revenue is observed in 2005 due to some depositors and borrowers fleeing the bank due to uncertainties arising from a possible merger with BDO.

Refer Tables 7A, 8A

Refer Figures 4A, 5A, 6A, 7A

Figure 5A shows that Equitable PCI had a stable reserve of assets and liabilities during the 2003-2006 sample period. Figure 6A depict revenues of BDO till 2006 and BDO Uni bank for the 2006-2014 sample period. Figure 6A shows a significant upward trend and increases in revenue leading up to 2013¹⁶. In addition, figure 7A shows total assets and liabilities of BDO up till 2006 and BDO Uni bank thereon for the 2006-2014 window. Figure 7A shows a prominent increase in assets and liabilities with the continuation of the upward trend observed before post-merger as well. Moreover, the merger resulted in BDO Uni banks' minimum capital required increasing to 700 million USD and subsequently settled with a market capitalization of 2 billion USD. Table 8 shows the present status of BDO Uni bank as the number one bank in Philippines, a decade from the merger. Table 9A shows the gradual increases in dividends per share (DPS) and diluted earnings per share (EPS).

3.4 Success Factors

In 2007, BDO merged with Equitable PCI Bank. This study identifies the following factors as key to the success of this particular merger and lessons that can be generalized to other bank mergers.

1. ~~Successfully integrated two~~ distinct banking cultures.
2. Both management teams agreed upon the merger.
2. Both management teams had prior experience in mergers.
3. Revenue synergies were readily identified and utilized.
4. Cost efficiencies were identified and efficiently utilized.
5. Improved balance sheet management.
6. Affiliation of a large block-holder (SM group) provided better monitoring and a positive signal to the markets.

¹⁶

The revenue decrease observed in 2014 is because of fourth quarter value exclusions.

A key risk factor in this particular merger as in any M&A deal is the integration of distinct cultures. BDO Uni bank required a combined vision and strategic re-branding following the merger. To this end, BDO engaged Inter-brand their long time branding partner to firstly establish a strong brand foundation. Then to subsequently aid the bank employees deliver the new brand experience to its large clientele. Inter-brand along with BDO management and employees developed the strategic brand proposition named “We find ways”. Moreover, they worked with BDO on creating and implementing a number of initiatives focused on building a strong brand through employee engagement. The prime objective of these initiatives was to embody the “We find Ways” throughout the company culture, among its management and employees. Another objective was also to scout out existing and new talent to fit into the re-branded company message. This study identifies the following practices as key to engaging the employees to successfully integrate the two cultures: 1. BDO’s President and senior leadership endorsed and led the employee engagement initiative¹⁷. 2. Human resources was segmented similar to customer segmentation by collaborating with key business and department heads to understand various needs and concerns of a diverse employee group¹⁸. 3. Emphasizing on brand implementation through actionable behavior and linking the same actions to desired customer experiences¹⁹. 4. Piloting and promoting programs that demonstrated positive business impact of engagement. 5. Creating and quickly implementing scalable solutions readily delivered through digital channels. For example, BDO, implemented an internal socialization tool allowing staff at all levels and locations to search and share exemplary ‘We find ways’ success stories. Subsequently, the management of BDO could successfully integrate and blend the two cultures and operations seamlessly to create a winning, stronger more competitive entity.

BDO and Equitable PCI had complementary branch networks. BDO had a strong position in key urban areas and commercial centers/malls. They also had the highest deposits per branch in the system. Equitable PCI had a strong presence in provincial areas with a good penetration of traditional Filipino-Chinese markets.

¹⁷Successful organizational impact always requires top leadership support even though employee engagement efforts often maybe initiated within one department or from the bottom up.

¹⁸For example a bank teller in the Philippine rural provinces would have different career aspirations and motivations than that of a senior banker working in head office at BDO Unibank.

¹⁹Aid internal back office employees better understand their role in providing front office services. Many employees engaged in back office functions rarely understand or realize their vital role in delivering a satisfied customer experience.

Hence, the combined entity resulted in a strong nationwide platform for selling traditional and nontraditional products. With regard to cost efficiencies, BDO identified 50-60 branches with overlap and combined these branches to free up the licenses and redeployed them. Hence, BDO was able to free up capital by releasing valuable bank real estate lease-backs. This eradicated lease costs from redundant real estates and releasing freehold properties for outright sale with a considerable surplus (E.g.: five properties in Makati, Manilas' very expensive business area).

Furthermore, substantial cost efficiencies were obtained through information technology (Using a common system), branches and ATM's (successful consolidation and integration of the distribution network), head office and back office support (optimization of head office and other support functions), marketing and advertising (shared expenditure), product development and rollout (greater efficiency and improved distribution).

In terms of improved balance sheet management, BDO further benefited from reversals of loan provisions, particularly in the real estate sector which has been a problem area for most Philippine banks. In addition, due to very conservative loan loss provisioning by BDO management prior to and during the merger, several write-backs to the balance sheet was observed long term, post-merger. Therefore, in the subsequent years post-merger book value increased due to real estate sales and surplus provision write-backs apart from continued operational profits. Improved balance sheet management was further achieved through greater diversification of risk, enhanced risk management system/procedures, better expertise in maximizing recoveries. Improved funding costs were obtained from increased scale resulting in a reduced risk profile. Moreover, increased low cost deposit gathering capabilities were implemented through a larger distribution network.

In addition, BDO has been a favorite of international institutional investors due to long standing stable revenues, shareholder returns, sound management and governance. However, prior to the merger, BDO reached the permitted 40% foreign ownership threshold. Interestingly, the merger resulted in a dilution of foreign interests in BDO Uni bank to 23%. Therefore, post-merger BDO Uni bank shares became far more accessible to foreign investors.

The merger made strategic sense, due to synergies of complementary markets and clientele, diverse products and services, complementary technologies & assets, diverse employee skill sets.

The two top management teams agreed on the strategic objectives of the merger resulting in a post-deal performance improvement through healthy cooperation.

Moreover, BDO considerably benefited from Equitable PCI bank's franchise or charter value among corporates, depositors and borrowers.

Significant revenue synergies were obtained from the integration of the two banks. BDO gained a soundly established operation in prime fee generating departments such as trust banking, credit cards and remittances. Substantial profit enhancement was achieved through improved product and enhanced distribution network, greater investment in new products. The combined entity took opportunities to increase revenues by cross selling the expanded product offerings and customer base as well as its affiliation with the SM Group network. The M&A deal was fully completed in mid-2008. Finally, the newly formed entity BDO Uni bank, possessed 680 branches and 1200 automated teller machines (ATM's). In addition, BDO further increased their capital adequacy ratio from 2% to 3% by raising 10 Pbn of tier 2 capital; Following the merger, BDO Unibank²⁰ emerged as the top most bank with regard to assets, toppling Metropolitan Bank as of the end of 2008. Subsequently, the assets of BDO Unibank amounted to 808.04 Pbn, edging out Metrobank, with 758.48 Pbn of total assets.

4. Present Case and Stable outlook

On September 17, 2008, Philippine central bank announced that due to Lehman Brothers associated investments, BDO Unibank is setting aside 3.8 Pbn (80.9 million dollars) loss provisions to cover exposure. However, the exact amount of BDO Uni banks' exposure was not disclosed. Fitch Ratings announced a stable outlook for BDO Unibank on February 1st, 2008. At present, BDO Unibank maintains the top position in terms of market share in almost every major banking product category. Moreover, they have become the image leader in terms of brand attributes and critical awareness overtaking its rivals and competitors within three years of the merger. BDO Uni bank customer experience in branch networks has been identified as a major driver of BDO's image, along with advertising from annual usage and image studies since 2010. BDO Uni bank customer tracking scores from the past 5 years further reflect this commitment where the bank's main index score exceeds both regional and global standards. Additionally, BDO Uni banks' significant advantage over its competitors, among local corporate and retail customers is also reflected in the index scores.

²⁰In 2012, BDO Uni bank acquired Rural Bank of San Juan Inc. In 2014, BDO Uni bank acquired Citibank Savings and the Real Bank (A Thrift Bank).

5. Generalizable Lessons & Managerial Implications

This section discusses the generalizable lessons for the banking industry from this particular merger and managerial implications. What can the banking industry especially in emerging markets learn from this particular banking merger? What are the key factors and strategies managers should focus on ex-ante and ex-post merger for value creation? Bank mergers are extremely difficult. The proper motivations for a merger is important. Generally, the market can distinguish between agency motivated managers and discipline them by decreasing the firms' share price. However, even in well-motivated mergers, acquirers often overpay for their targets resulting in most of the synergy gains created been given away to the target firm shareholders. Moeller, Schlingemann & Stulz (2005) find that large losses in M&A deals are one's conducted by overvalued targets and the subsequent post-merger wealth destruction may be due to revaluation of acquirers' intrinsic value.

From the above analysis, it is evident that the prime motivation for the BDO acquisition of Equitable PCI bank was to gain more market share and eliminate a strong competitor. Evidence of value creation from the deal is observed through the increments in net interest income, net income and the balance sheet for the new entity BDO Uni bank. The fact that ROA and ROE considerably increased following the acquisition provides evidence of a good management team and positive business synergies. Both banks are experienced in M&A activity and the management had complimentary styles and agreed to a friendly takeover.

The BDO and Equitable PCI merger is exemplary for the banking sector as a whole, but teaches us a series of universal lessons. The first year of an integration following a merger especially in the financial sector creates uncertainties. Even if forced unemployment can be restricted or avoided via social dialogue and adequate social plans: 1. Career perspectives are shifting. 2. Rewards may stagnate. 3. Recognition of employees and their individual competencies and qualities can get lost.

Culture in the company can be less safe than before. 5. Stress is growing as business has to proceed, not seldom in a leaner work organization. 6. Retained employees are often perceived to be the lucky ones²¹. 7. Differences in salary levels between the elder (higher, often as a result of earlier restructurings) and the younger generation (lower) are experienced as a lack of rewards.

²¹They should not complain; however, their workload, job content, individual perspectives, are rapidly changing - how can they find support for this transition?

Therefore, a strong merging of the two different cultures with a common branding message is key, as was done in the case of BDO and Equitable PCI. Prior track record of successful mergers by both sides' management was also an added advantage in this merger.

This analysis implies that M&A activities can provide a stable outlook for even a largely fragmented banking sector through consolidation and expansion²². Moreover, Fitch ratings identified Philippines as the only Asian Pacific country possessing a positive ratings outlook for 2016. Finally, Table 9A shows selected key set of mergers in the Philippine banking industry from 2004 to early 2014.

Refer Table 9

6. Conclusion

BDO Uni bank moved to the number one position in the Philippine Banking Industry following the merger of Equitable PCI bank (third largest bank) with BDO (the fifth largest bank). The acquisition was hailed as a bold precarious move driven by Hubris from the BDO management. This study provides a survey of literature on motives behind M&A's and key factors that affect M&A outcomes. In addition, this study identifies the following factors as key to the success of this particular merger and lessons that can be generalized to other bank mergers. 1. Successfully integrated two distinct banking cultures. 2. Both management teams agreed upon the merger. 2. Both management teams had prior experience in mergers. 3. Revenue synergies were readily identified and utilized. 4. Cost efficiencies were identified and efficiently utilized. 5. Improved balance sheet management. 6. Affiliation of a large block-holder (SM group) provided better monitoring and a positive signal to the markets. Hence, due to efficient integration strategies and governance practices pursued by BDO management pre and post-merger the deal was a success. This particular merger provides evidence supporting value creation in M&A's. Both banks were experienced in M&A activity and the management agreed on the acquisition.

²²Gaining access to new market segments, new clients, efficient renegotiation of high impact contracts (high net worth clients and suppliers). Following actions should be implemented to secure the profitability of the newly formed entity post-merger: Retaining and utilizing the best of both firms' culture, governance and strategies, creating a sound firm identity, removing unfunded and over funded pensions, securing and renewing large contracts, securing existing important clientele, removal of bad assets, and bad contracts.

Despite initial skepticism, frictions and adverse reactions by various market participants, it has proven to greatly transform the Philippine's banking landscape. Finally, going forward a decade into the future, this particular merger still remains the most ambitious and controversial yet clearly a successful merger in the Philippine banking history.

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Appendix

Figure 1A: Shareholders of Equitable PCI Bank (In 2003)

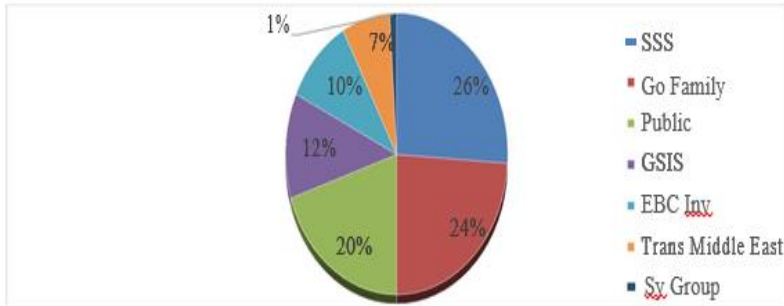


Figure 2A: Historical BDO and Equitable PCI stock price. The blue line depicts BDO close price and the red line depicts Equitable PCI stock price.



Figure 3A: Pre and post merger announcement effect on BDO and Equitable PCI stock price.

The blue line depicts BDO close price and the red line depicts Equitable PCI stock price.



Table 1A

Philippine bank rankings with regard to asset size given in peso billion excluding Foreign and development banks, pre-merger in 2004.

	Rank	Assets	Rank	Loans	Rank	Deposits	Rank	Capital
Metro bank	1	470.6	1	243.7	1	345.7	2	53.4
BPI	2	394.8	2	162.2	2	314.7	1	55.0
Equitable PCI	3	293.5	3	134.2	3	189.6	3	44.4
PNB	4	220.2	5	78.4	4	163.5	4	24.0
BDO	5	169.8	6	69.9	5	121.4	6	19.6
RCBC	6	152.2	4	83.2	6	108.2	8	16.2
Allied Bank	7	118.5	8	47.2	7	92.7	9	15.4
China Bank	8	116.4	7	50.8	8	85.5	5	20.2
UCPB	9	104.9	9	46.5	9	79.4	17	4.1
Union Bank	10	100.3	10	39.1	10	56.6	7	16.6
Security	11	82.7	11	38.2	11	51.7	10	10.8

Source: Philippine Central Bank as of December 2004.

Table 2A

Year on year growth of the target (Equitable PCI), acquirer (BDO) and new entity (BDO Uni bank) balance sheet analysis, pre and post-merger in peso billion end of the year.

	2007	2006	2006
Balance Sheet	BDO Uni bank	BDO	Equitable PCI
<i>Assets</i>			
Net Loans	315.1	127.93	111.83
Total Assets	617.42	304.47	345.14
<i>Liabilities & Shareholder's Equity</i>			
Total Deposits	445.4	229.37	241.8
Total Liabilities	556.88	280.04	297.66

Source: BDO, Equitable PCI and BDO Uni bank financial statements.

Table 3A

Year on year growth of the target (Equitable PCI), acquirer (BDO) and new entity (BDO Uni bank) income statement analysis, pre and post-merger in peso billion end of the year.

	2007	2006	2006
Income Statement	BDO Uni bank	BDO	Equitable PCI
Net Interest Income	21.49	8.33	13.12
Net Income	6.52	3.13	3.27

Source: BDO, Equitable PCI and BDO Uni bank financial statements.

Table 4A

Key ratios of the target (Equitable PCI), acquirer (BDO) and new entity (BDO Uni bank) pre and post-merger end of the year.

	2007	2006	2006
Profitability %	BDO Uni bank	BDO	Equitable PCI
NIM	4.0	3.3	4.3
ROA	1.41	1.16	0.17
Diluted EPS	2.56	2.89	4.88
BV per share	23.45	22.91	63.7

Source: BDO, Equitable PCI and BDO Uni bank financial statements.

Table 5A

Bank Name	Year	Net Goodwil l	Total Interest income	Provisions Credit Losses	Total Revenue	Total Share Capital
BDO	2004	0	6767	187	3420	9145
BDO	2005	600	8901	292	4583	9481
BDO	2006	662	11502	245	6086	9620
BDO Uni bank	2007	.	12826	1429	9696	16163
BDO Uni bank	2008	.	14256	774	9506	23020
BDO Uni bank	2009	.	18344	1288	12373	28020
BDO Uni bank	2010	.	18495	1629	12994	29736
BDO Uni bank	2011	.	24849	1642	13755	31074
BDO Uni bank	2012	.	30020	1475	16956	34679
BDO Uni bank	2013	1482	34569	1600	18228	40958
BDO Uni bank	2014	.	30773	1293	17008	40958
Equitable PCI	2004	15240	9781	1035	5954	7270
Equitable PCI	2005	15680	11891	715	6985	7270
Equitable PCI	2006	.	9742	407	7285	7270

Table 6A

Bank Name	Year	Customer		Total Deposits By		Total
		Acceptance	Long Term Debt	Banks	Customers	Deposits by
BDO	2004	0	27334	0		112445
BDO	2005	10047	19939	5412		147146
BDO Uni bank	2006	0	45291	0		199858
BDO Uni bank	2007	.	44325	.		339769
BDO Uni bank	2008	.	74656	.		481318
BDO Uni bank	2009	.	67366	.		631749
BDO Uni bank	2010	.	60062	.		686561
BDO Uni bank	2011	.	88745	.		774384
BDO Uni bank	2012	.	105849	.		858556
BDO Uni bank	2013	37259	73926	8067		1118930
BDO Uni bank	2014	.	84167	.		1375057
Equitable PCI	2004	25849	17224	108		187259
Equitable PCI	2005	18521	32448	76		206130
Equitable PCI	2006	.	31543	122		223119

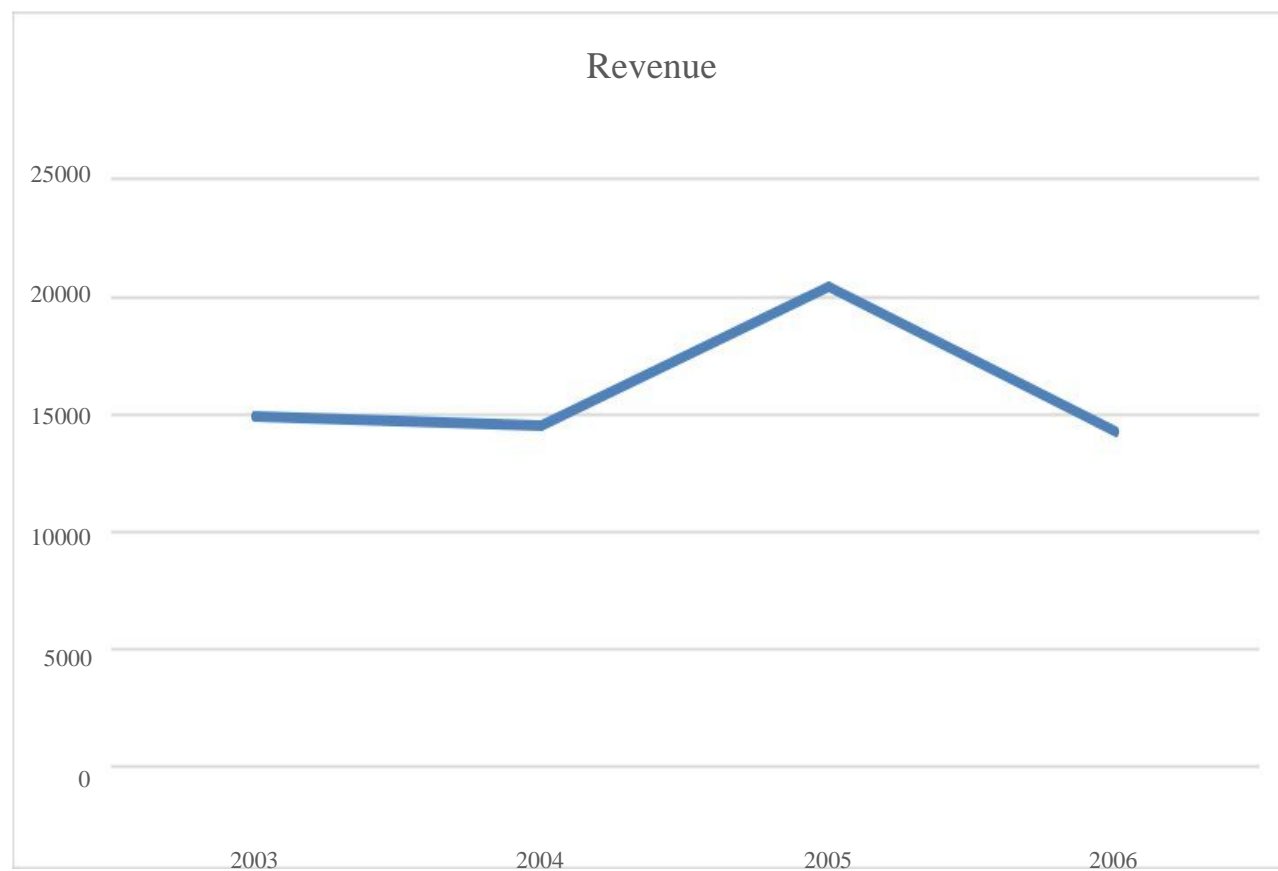
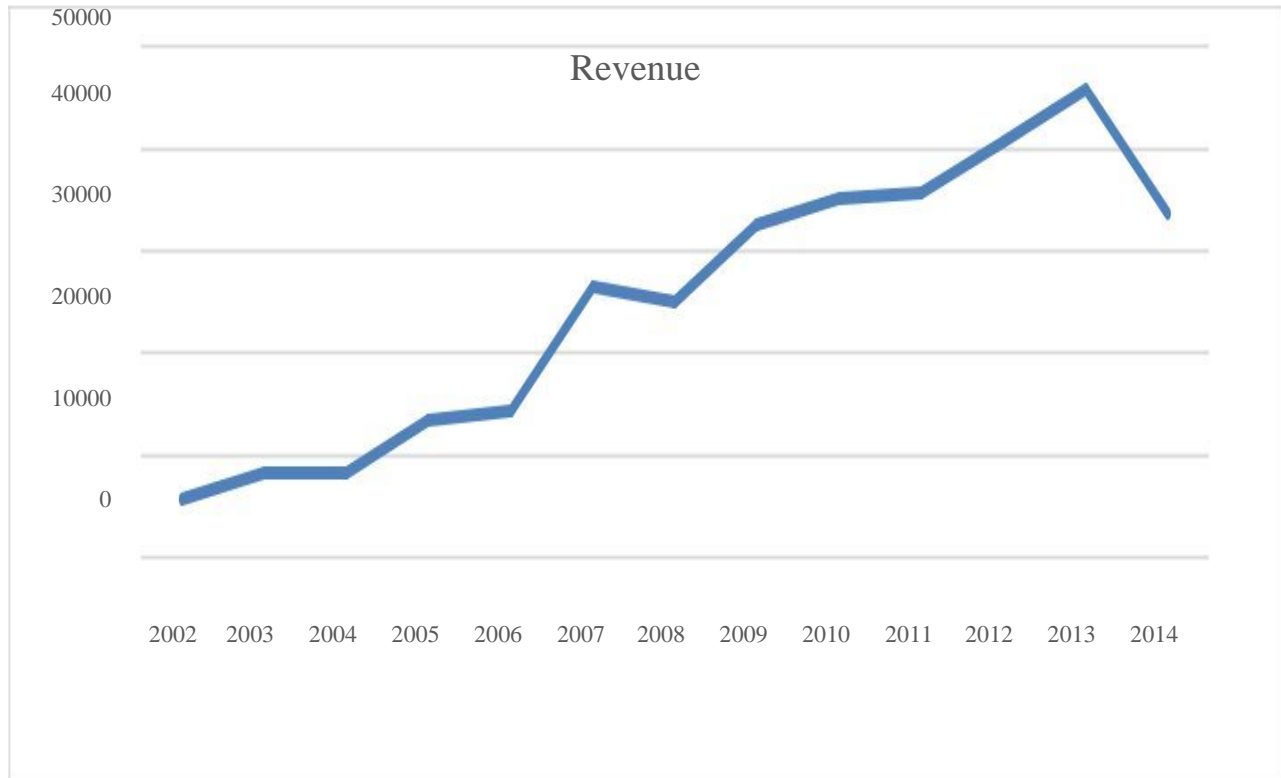
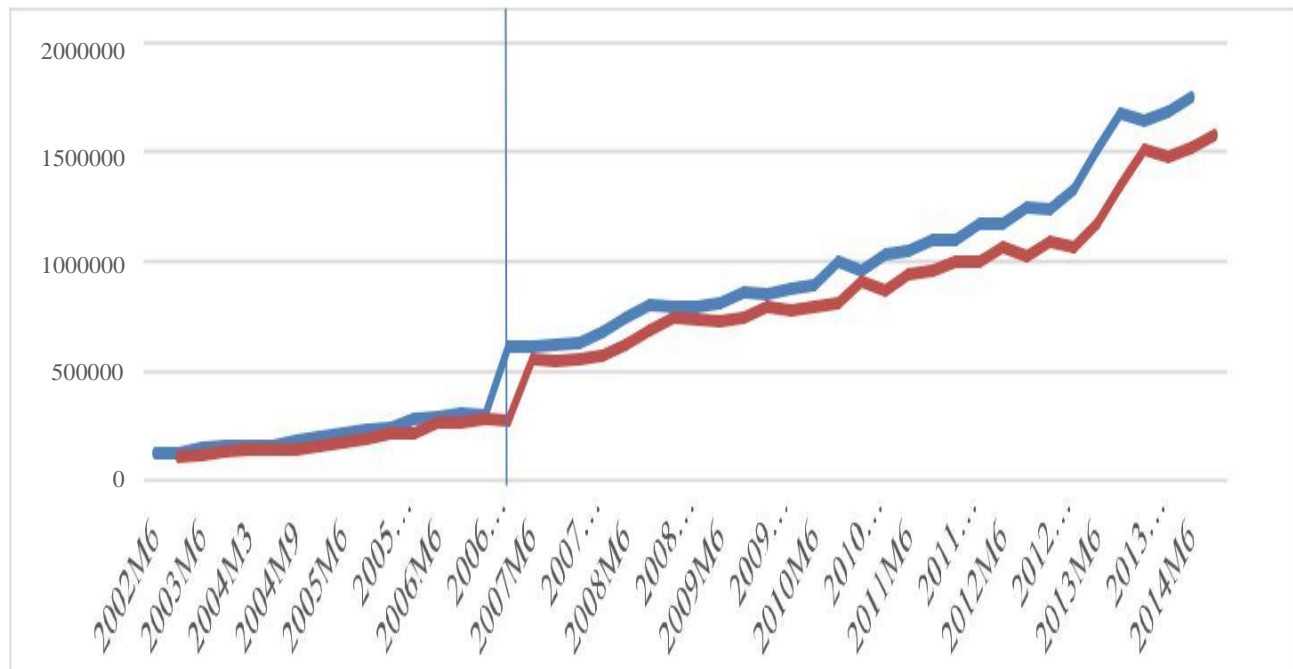
Figure 4A Revenues of Equitable PCI bank from 2003 to 2006

Figure 5A

Equitable PCI banks' assets and liabilities from 2003 to 2006. The blue for total assets and red for total liabilities



Figure 6A Revenues of BDO bank from till 2006 and BDO Uni bank 2006 onwards.**Figure 7A** Balance sheet data for BDO bank till 2006 and BDO Uni thereon. Blue for total assets and red for total liabilities.

Source: BDO, Equitable PCI and BDO Uni bank financial statements.

Table 7A Philippine Bank Asset details in millions of PHP as of March 2017.

Ranking	Commercial Banks	Assets in millions of PHP
1	BDO Uni bank	2,262,034.65
2	Metrobank	1,589,447.27
3	BPI	1,451,377.01
4	Land Bank	1,375,686.17
5	PNB	740,419.12
6	Security Bank	729,174.82
7	China Bank	539,268.82
8	DBP	512,662.51
9	Union Bank	449,289.26
10	RCBC	425,287.94

Source: Philippine Central Bank as of 2017.

Table 8A Key accounting variables for BDO Uni bank from 2012 to 2016.

	2012	2013	2014	2015	2016
Revenue	1,842.53M	2,058.03M	2,082.02M	2,267.12M	2,593.86M
Operating income	370.50M	568.50M	605.49M	698.90M	707.53M
Income before tax	370.50M	568.50M	595.10M	657.08M	682.66M
Net income	343.03M	532.33M	513.75M	549.40M	549.40M
Diluted EPS	0.1	0.13	0.13	0.14	0.14
Dividends per share	0	0.04	0.02	0.02	0.02
Total assets	30,256.09M	37,715.99M	41,698.54M	43,202.72M	46,796.85M
Total liabilities	26,496.68M	34,012.86M	37,682.02M	38,960.59M	42,420.99M
Total equity	3,743.41M	3,688.63M	4,002.36M	4,228.88M	4,360.91M
Operating cash flow	683.45M	869.91M	774.68M	180.22M	891.45M

Table 9A: Selected Mergers, Acquisitions and Consolidation of Philippine Banks from 2004 to Q1 2014.

Date	Activity
2005	BDO Bank acquired 66 of the 67 Philippine branches of Singapore's United Overseas Bank for 600 PHP million.
2005	BDO Bank purchased the Go family's 24.76% stake in Equitable PCI Bank for 10.2 Pbn.
2007	BDO Uni bank merged with Equitable PCI Bank, resulting in combined assets of 613 Pbn and combined deposits of 435 Pbn.
2009	BDO Uni bank. Inc. acquired GE Money Bank for 1.3 Pbn.
2012	BDO Unibank, Inc. acquired Rural Bank of San Juan, Inc., adding 30 branches to the former
2013	BDO Uni bank, Inc. signed an agreement to acquire 99.99% of Citibank Savings, Inc., Citi's thrift banking arm in the Philippines
2014	BDO Uni bank, Inc. expressed interest in acquiring the trust business of Deutsche Bank AG, Manila Branch, which adds 70 Pbn.

Generic Strategy and Strategic Management Accounting Practices: Case Study of a Sri Lankan Telecommunication Company

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Abstract

Organizations depend on different generic strategies to gain competitive advantage (Porter, 1980). Usage of a particular generic strategy is always associated with a set of rules, practices, and procedures within an organization. Amongst them, Strategic Management Accounting (SMA) practices play a vital role in supporting and monitoring the performance of generic strategies pursued by an organization. However, organizations may change the generic strategies they use over time due to various changes taking place in the environment which include the changes in business environment, technology, competitors, regulation and global economy (Wickramasinghe & Alawattage, 2007). A change in the strategy is expected to lead to changes in existing policies and practices to match the new strategy (Langfield – Smith, 2007). Thus, SMA practices used by the organization should be no exception. Such changes in practices are important for effective implementation of the new strategy. Otherwise, the new strategy is expected to fail. However, studies, which examine the changes in generic strategy and associated changes in SMA practices are scarce in the Sri Lankan context. Hence, the purpose of this paper is to examine whether the change in generic strategy leads to changes in SMA practices used in Alpha Telecom PLC, which is a leading telecommunication company in Sri Lanka. Also, the study expects to find out other factors contributing to the changes in SMA practices in this company.

This study adapted qualitative research methodology and used single case study method to conduct an in depth analysis of SMA practices of Alpha Telecom. The data were collected through semi- structured interviews with senior managers and a survey questionnaire distributed among middle level executives. Management Accounting (MA) reports and annual reports of the company were used as secondary sources.

The study found that when generic strategy moved from cost leadership to differentiation, the traditional MA practices based on costing shifted to SMA practices such as Balanced scorecard (BSC), Competitor analysis, Quality costing etc. Further it was found that changes in ownership, culture of parent company, and nature of competition also had an impact towards the usage of new SMA practices within the company.

Key words: Strategic Management Accounting Practices, Generic Strategy, Differentiation, Cost Leadership

INTRODUCTION

Considering the rise in competition within the corporate world, as an effect of globalization and development of technology the success or failure of any business depends on developing and maintaining a Sustainable Competitive Advantage. This crucial factor is now considered the heart of a company's performance and survival in the ever-changing market. After several decades of vigorous expansion and growth many firms lose the sight of this key component, during their scramble and pursuit for growth, expansion, and even diversification. Today, a company's continuous focus on gaining a competitive advantage could hardly be greater than any other concerns it faces. The firms are using generic strategies (Porter, 1985) to gain competitive advantage. The main generic strategies are cost leadership, differentiation, and focus. The generic strategy of the business may be changed due to the changes in business environment, technology, competitors, regulations and global economy (Wickramasinghe & Alawattage, 2007). Further there is significant relationship between Management Accounting (MA) and business strategies (Simmonds, 1981). MA practices are developed from traditional aspects to strategic aspects due to the changes in external environment and internal environment (Burns & Scapens, 2000). Hence a new MA discipline is coined by Simmonds (1981). He defined it as "The provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy" (Simmonds, 1981, p. 26). Roslender and Hart (2003, p. 272) defined that SMA is about making MA more strategic. But, Langfield – Smith (2008) stated that there is no agreed definition of SMA in the literature and recognized SMA as accounting information about competitors, suppliers, and customers. Further, Nixon and Burns (2012) pointed out that Simmonds (1981) has developed the concept SMA by considering the generic strategies of Porter (1980). Hence the firms practice SMA techniques than traditional MA to provide more strategic information for strategy formulation. By considering above findings of prior studies, the study aims to examine whether the change in generic strategy leads to changes in Strategic Management Accounting (SMA) practices in a selected telecommunication company in Sri Lankan context. The eleven SMA practices (under cost perspective, customer perspective, competitor perspective and performance perspective) used by Cinquini and Tenucci (2010) are applied for the current study to identify SMA practices.

The findings of the study generate a valuable insight in the SMA literature as little is known in the discipline of SMA. Further, Nixon and Burns (2012) suggested conducting more studies in this

discipline as there is a lacuna in SMA literature. The findings generate sound contribution in SMA research studies in Sri Lankan context as Langfield-Smith (2007) suggested conducting studies on practice of SMA techniques in specific organizational contexts. Except to above mentioned contribution to the literature, there is a considerable relevance of the findings towards to practical usage as managers can learn how to use SMA techniques as a strategic information tool for crafting strategies and deciding their generic strategy to gain competitive.

The paper is organized as follows: the first section gives a brief review of SMA practices, generic strategy and prior studies on business strategy and SMA. Then, next section explains the case unit (Alpha Telecom PLC) and research methodology. Subsequently, research findings and discussion on the findings will be explained. The final section is dedicated to explain the conclusion of the study.

LITERATURE REVIEW

Strategic Management Accounting (SMA) Practices

Simmonds (1981) first coined the term Strategic Management Accounting. He defined it as “The provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy”. Bromwich (1990) defined SMA in financial perspective as “the provision and analysis of financial information on the firm’s product markets and competitors’ costs and cost structures and the monitoring of the enterprise’s strategies and those of its competitors in these markets over a number of periods”. Bromwich and Bhimani (1994) stated that SMA requires that accountants embrace new skills extending beyond their usual areas and co-operate much more with general management, corporate strategies, marketing and product development. Coad (1996) stated that SMA is “an emerging field, whose boundaries are loose and yet, there is no unified view of what it is or how it might develop. Broutner and Roozen (1999) argued that SMA provides information on environmental analysis, strategic alternative generation, strategic alternative selection, planning the strategic implementation, implementing the strategic plan and controlling the strategic management process. According to them, strategic management information is mostly non-financial and future focused. The Chartered Institute of Management Accountants in UK (2005) stated SMA as “A form of management accounting in which emphasis is placed on information which relates to factors external to the firm, as well as non-financial information and internally generated information”. Roslender and Hart (2002) stated that SMA’s

defining characteristic is the MA interface with marketing management rather than strategy. But, in the accounting literature, there is no agreed definition of SMA (Langfield-Smith, 2008). This study has used the same SMA techniques, which are used by Cinquini and Tenucci (2010).

Category of SMA Technique	SMA Techniques
Costing	Activity Based Costing (ABC)
	Life cycle costing
	Quality costing
	Target costing
	Value chain costing
Customer	Customer Analysis (CA)
Competitor	Competitive position monitoring
	Competitor Cost Assessment
	Competitor Performance Appraisal based on Public Financial Statements
Performance	Benchmarking
	Balanced Scorecard (BSC)

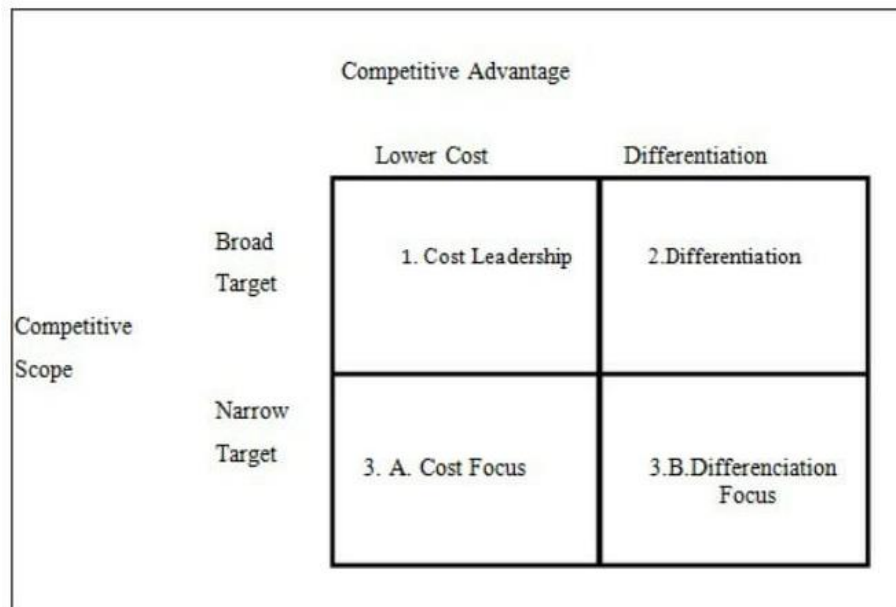
Source: Cinquini, L. and Tenucci, A. (2010), "Strategic management accounting and business strategy: a loose coupling?"

Table 1: SMA techniques from the literature

Generic Strategy

According to Porter (1985), Competitive Advantage is the attribute that allows an organization to outperform its competitors. This concept aims to build a strong relationship between strategy formulation and implementation. Further, it supports to establish a profitable and sustainable

position against the forces that determine industry competition. Porter (1985) defined two ways in which an organization can achieve competitive advantage over its rivals: cost advantage and differentiation advantage. The two basic types of competitive advantage combined with the scope of activities and form four strategies called “Generic Strategies”. They are Cost Leadership, Differentiation, Cost Focus and Differentiation focus. The cost leadership and differentiation strategies seek competitive advantage in a broad range of industry segments while focus strategies aim at cost advantage (cost focus) or differentiation (differentiation focus) in a narrow segment. This study is focusing only on cost leadership and differentiation. Cost leadership is a business' ability to produce a product or service that will be at a lower cost than other competitors. A differential advantage is the ability to differentiate its products or services from competitors (Porter, 1985).



Source; Porter, M. (1985), “Competitive Advantage”

Figure 1: Generic Strategies for Competitive Advantage by Michael E. Porter (1985)

Business Strategy and SMA

Simmonds (1981) stated that Management accountants could assess the strategic impact of internal information and collect information about the position of competitors. Shank (1989) stressed the need for MA to support a firm's competitive strategies and illustrated how these different MA techniques support to different competitive strategies such as cost leadership and product differentiation. Using Porter's taxonomy, Shank (1989) and Shank and Govindarajan (1989) analyzed the relative importance of several MA methods depending on whether the firm was pursuing cost leadership or differentiation. They conveyed that companies choosing cost leadership would put the most emphasis on the traditional cost accounting applications. Simons (1990) investigated the role of management control systems (MCS) in creating competitive advantage and he has used strategic models of Miles & Snow (Defender, Prospector, Analyzer, Reactor), Mintzberg (Entrepreneurial, Adaptive, Planning mode), Porter (Cost leadership, Differentiation, Focus). The analysis showed that interactive management control processes can be used to manage emergent strategy, rather than focusing on what the organization already understands and does well, these systems direct organizational attention to emerging threats and opportunities. Rickwood et al. (1990) carried a case study to investigate SMA to gain competitive advantage and they pointed out that it is desirable to release MA from the factory floor to allow it to also aid directly new market challenges. Lord (1996) identified a specific characteristic of SMA. He stated that firm can gain competitive advantage by using SMA techniques which are analyzing a way to decrease costs and enhance the differentiation of a firm's product, through exploiting linkages in the value chain and optimizing cost drivers. Chenhall and Smith (1998) examined the relationship between strategic priorities, management techniques, and MA. Their results showed that high performing product differentiators are associated with MA techniques of quality systems, integrated systems, team-based human resource structures and MA practices incorporating employee-based measures, benchmarking, strategic planning techniques and activity-based techniques. On the other hand, high performing low-cost strategy firms are associated with MA techniques of improving existing processes, integrating systems, innovating manufacturing systems and activity-based MA techniques. Guilding et al. (2000) carried out an international comparison of SMA practices to identify the usage of SMA in New Zealand (NZ), United Kingdom (UK), and the United States of America (USA). They used 12 SMA techniques. These are attribute costing; brand value budgeting and monitoring, competitor cost assessment,

competitive position monitoring, competitor appraisal based on published financial statements, life cycle costing, quality costing, strategic costing, strategic pricing, target costing and value chain costing. Competitor accounting and strategic pricing appear to be the most popular SMA practices in three countries. Target costing is highly used in NZ and U.S. Further, Companies in NZ and UK make greater use of value chain costing, competitive position monitoring, and competitor performance appraisal based on published financial statements while the U.S. uses them to a relatively low degree. N.Z. companies showed a great tendency for SMA. Finally, they found that there is negligible use of the term 'SMA' in organizations. Cravens and Guilding (2001) pointed out that there are significant relationships between SMA usage and competitive strategy by considering research and development and market coverage aspects. Roslender and Hart (2002) stated SMA as the interface between marketing and MA to pursue competitive advantage through market positioning strategies. Wickramasinghe and Alawattage (2007) stated that MA is influenced by environment factors such as technology, competition, global effects, economic uncertainty, social and cultural influences and political influences. Further they have mentioned SMA can be used to gain sustainable competitive advantage via strategic market position. Cadez and Guilding (2008) carried out an investigation of an integrated contingency model of SMA. 16 SMA techniques have been identified for analysis in this study based on sub categories (costing, planning, control and performance measurement, decision-making, competitor accounting and customer accounting). They found that accountants' participation in strategic decision making is positively associated with prospector strategy. Cinquini and Tenucci (2010) carried out a study to identify whether business strategy influences SMA usage. They stated that competitor analysis, competitive position monitoring, competitor performance appraisal based on published financial statement and quality costing are widely used in Italian companies. Further, they have stressed that differentiators are more interested in SMA techniques to address customer, competitor, and performance information. Cost leaders are interested in SMA techniques based on cost information. Lachmann et al. (2013) conducted a study to examine the dissemination of SMA techniques in hospitals under competitive market environments. They stated that firm's structure and ownership is affecting the usage of SMA techniques as publicly owned hospitals are more interested in cost and risk based SMA techniques. Abdullah and Said (2015) have stated that SMA techniques provide information about competitive strategy, firm development, market changes, and corporate strategic program, strategic implementation and strategic control.

CASE STUDY COMPANY

Evolution of the company

Alpha Telecom PLC (hereafter referred as Alpha) is a key player in telecommunication industry in Sri Lanka. The ownership of Alpha is started as a government ownership organization and presently owned by a Netherlands company. Alpha is more strategic oriented as there is a vigorous competition in the telecommunication industry. Alpha was started as a government organization in 1980's and it was operated with lots of red tapes. Considering the emerging competition in the industry, the government decided to privatize the firm. Then, Alpha was acquired by a Japanese company for five years. In 2003, Alpha became a public limited company. In 2008, the ownership of Japanese company sold to a Netherlands company. Currently, The Chairman of the company is appointed by Government and the Chief Executive Officer (CEO) is appointed by the Netherlands ownership. Alpha is operating as a group of companies, which includes ten subsidiaries in telecommunication infrastructure, mobile communication, broadband, human resource management, etc. Currently Alpha provides services in voice, data, broadband, wholesale, enterprise, cloud, international and TV.

In 1993, a French consultation company developed a strategic plan for Alpha. But it did not succeed due to the political influences. Then, in 1997, Japanese management developed a strategic plan with a new vision and a mission, which were more cost and technical oriented. There was a highly hierarchical organization structure until privatization. The structure was highly static. After the privatization, the Japanese management introduced an expanded structure. Further, the Japanese management identified the need of customer care. They opened flag ships for customer care and organized many training programmes islandwide on customer care. After that the Netherlands management has changed existing vision and mission which is aligned with customer and competition aspects. The Netherlands management has also implemented some changes in the structure based on their transformation program by adding new positions to suit market orientation and customer focus. Further, they have established a committee called "Customer Complaint Committee" to solve customer complaints.

Before privatization there were few accountants and financial activities. The accounting process was carried out manually. After Japanese Management took over the management, they introduced a computer based accounting system in 2000 which generated financial statements. After Alpha

became a public quoted company, it was mandatory for them to provide quarter and annual reports to Colombo Stock Exchange. Further, Japanese management introduced new MCS such as 5S, Kaizen, and cross functional teams into the system.

RESEARH DESIGN

This study adapted qualitative research methodology and used single case study method (Yin, 2003) to conduct in depth analysis of SMA practices of Alpha. As Denzin and Lincoln (2000) mentioned the qualitative studies are conducted to find the answer for how social experience is created and given meaning. Yin (2009) further elaborated that case study method addresses the "how" or "why" questions in any context. Hence, Alpha was selected as the case unit because it has been managed by different companies with different strategic intentions and the main objective of the study is to conduct an in depth analysis of SMA practices of Alpha.

During the data gathering process, primary and secondary data were collected through several sources. Primary data mainly collected from interviews with top and middle level managers. Interviews were carried out with Deputy chief corporate officer, Deputy general managers in Marketing, Customer services, Procurement divisions, Head of finance, Quality engineers, Project engineers and Senior executives. There were nine interviews carried out with covering related departments with SMA practices. All the interviews were semi-structured interviews and based on a pre-set interview protocol. The interview protocol was updated as the interviews progressed from one person to the other person. Interviews were limited to a maximum of one-and-half hours and certain executives could be followed up for more details. In addition to face to face interviews, data were gathered through several follow-up telephone interviews. All the interviews were voice recorded with the permission of the respective interviewees. These voice records were subsequently transcribed. Further a survey questionnaire was distributed among fifty middle level executives to verify the findings of interviews. As secondary sources the company web site, MA reports, annual reports of the company, published articles of Alpha were studied in detail.

The analysis of data was carried out based on thematic analysis of Braun and Clarke (2013). Accordingly, the conducted interviews were transcribed into the notes. Then the transcribed notes of interviews and documents were analyzed to identify the answers for the research questions. The researchers used both interviews and questionnaire survey method to enhance validity and reliability through methodological triangulation.

FINDINGS AND DISCUSSION

Evolution of MA practice in Alpha

The origin of accounting practice of Alpha was a legacy of colonial relationships. They followed financial accounting practices in the early stages in keeping with the state regulations and the accounting environment was highly bureaucratic. The management did not pay attention to customer satisfaction, quality of service, and market conditions. A senior manager stated the reason for the above narrow practice of accounting,

“The strategic direction and focus were different. Because there was no competition. We enjoyed a monopoly situation”

When Alpha Telecom was acquired by a Japanese company, the accounting practices were expanded to MA. A senior manager stated:

“Gradually Japanese management developed the infrastructure of the company and changed the attitudes of employees. They eliminated the red tapes. They were interested much on MA and control systems”

A comment of a senior executive in accounting division implied that MA practice was started in Japanese management period.

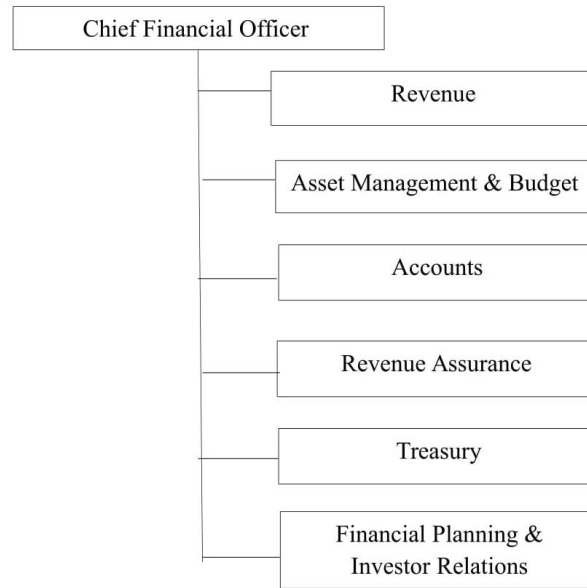
“Around 2000, we developed MA practice in relation to Japanese management. During this period, MA practice was in initial stage. Now it is advanced and its quality is high”

The interest for MA was increased after Netherlands management took the control as they see more on marketing perspective. A senior manager supported:

“Netherlands management is interesting in management accounting a lot. They demand reports like cost analysis, revenue analysis, segment analysis and monthly performance reviews etc.”

The Netherlands management has changed the organizational structure. Preparation of MA is assigned to new department called “Finance Planning” and Budgeting is under Assets Management division. Further some MA related reports are produced by other departments such as Marketing, Quality Assurance, and Project etc.

The hierarchy of finance division under Netherlands management familiar as below,



According to the survey conducted, there has been a high pace of development of MA during the period of Netherlands management as questionnaire respondents also supported the finding with 72%.

SMA practices in Alpha

Authors identified the extent of SMA techniques in Alpha by referring the same identification used by Cinquini and Tenucci (2010).

Around 2008, Activity Based Costing (ABC) has been introduced to the firm. They tried to use it for new product cost calculation. But it did not succeed. A senior corporate officer commented that:

“The management tried to introduce ABC. But they were unable to implement it properly”

Hence ABC method is still in initial stage. But they want to enhance the usage of it. They used ABC to identify cost for new products and in the planning stage of products. Life cycle costing is not being used by finance department. But marketing department uses it for identification of costs of new product in different stages. Corporate department also uses this technique to decide strategies on products based on life cycle. Hence life cycle costing is being used by Alpha but it is not widely adapted. The quality costing practice is under quality assurance department. The quality costing is based on continuous improvement, which was introduced by the Japanese management. This technique was heavily used in the time of Japanese management than Netherlands management. Alpha pays considerable attention on quality costing as they are awarded with

quality management awards such as ISO certificate. But they didn't disclose the process of preparing the quality costing. In Alpha, they use similar cost allocation methods to target costing in project division to a certain extent. But they are not familiar with target costing. Alpha is not practicing value chain costing. But their pricing strategies are based on value adding concept. Multinational corporations, Small medium entrepreneurs, and domestic users are the main customers of Alpha. Marketing division identified revenue generation and cost incurred for each customer. Even quality department mentioned that they are identifying the customer satisfaction and recording it. A corporate officer stated that corporate division prepares and uses customer analysis based on situations. It conveyed that Alpha is preparing customer analysis in three departments separately based on their special requirements. Marketing department of Alpha is preparing competitor position monitoring report monthly. This is directly sent to the CEO and called it as "market situation report". Further they prepare a weekly report on market position which is called "Market Intelligent report". Competitor performance report based on financial reports is prepared by financial department. This report is prepared to compare revenue and cost items with competitor. A senior manager in marketing division stated that:

"Our finance division is doing a comparison of finance statements of our main competitor with us. But monthly statement is compulsory. In our monthly report, there is a section called "market situation report" under it there are two sections as customer analysis and competitor analysis"

Balanced scorecard (BSC) is introduced to Alpha by Netherlands management. Hence it is at initial stage. The senior management tries to apply BSC in every department. Currently it is used by Corporate, Finance Human Resource, and Marketing Departments.

SMA Perspective	SMA Technique	Participants Respond	
		Practicing	Not practicing
Cost	Activity Based Costing	58%	42%
	Life cycle costing	34%	66%
	Quality Costing	50%	50%

	Target costing	46%	54%
	Value chain costing	20%	80%
Customer	Customer Analysis (CA)	66%	34%
Competitor	Competitive position monitoring	89%	11%
	Competitor Cost Assessment	24%	76%
	Competitor Performance Appraisal based on Public Financial Statements	94%	06%
Performance	Benchmarking	17%	83%
	Balanced Scorecard	65%	35%

Source: Survey data

Table 02: Findings of questionnaire survey among executive staff

According to the questionnaire survey among executive staff, It also proved that Alpha highly practices customer analysis, competitor position monitoring, competitor performance appraisal based on public financial statements and BSC. Further they practice ABC and quality costing to a certain extent. Survey findings are also confirmed the interview findings that life cycle costing, target costing, value chain costing, competitor cost assessment and benchmarking are not familiar with Alpha.

The Relationship between Competitive Advantage and SMA Practices

Under Government Ownership (before 1997):

During the period under government control the main objective of Alpha was social welfare. Alpha was the only telecommunication provider and they had the monopolistic power. Hence Alpha was not aware of competitive advantage. Few investors came to the market in early 90's. But Alpha was able to maintain their monopoly due to the ownership structure. They kept accounts to identify revenue of government. Further, Alpha was not concerned about competitive advantage. Hence the management was not interested in MA techniques and MCS at that time.

Under Japanese Management (1998-2007):

After the privatization, the objective was changed. The profit maximization came in to the stage. The effectiveness and efficiency became important. The Japanese management was futuristic and strategically focused. From time to time new telecommunication firms entered the telecommunication industry and created competition. The customers were becoming powerful as they got alternative companies other than Alpha. So, Alpha identified "customer satisfaction" as an important concept. They positioned their service in the competitive market as a "reliable service" because of remaining government ownership with reasonable price. They used both low cost strategy and differentiation strategy in different services to gain competitive advantage. International direct dialing (IDD) was based on low price strategy. The wireless phone service was based on differentiation through technology and reliability of the service. When demand for fixed phone service went down due to mobile service, Alpha went for low price strategy for fixed phone offering different payment plans and services. They differentiated their services from "quality and advanced technology". The Japanese management was interested in MA in higher degree level and they established new division for MA under CFO. They used MA techniques to achieve their objectives of cost reductions, quality improvement, and customer satisfaction. Most of MA techniques used during that time were based on cost. But they were concerned about customers and competitors. It is evident that during this period Alpha was using mainly MA practices introduced by Japanese management.

Under Netherlands Management (2008-Present):

In 2008, Alpha introduced a new service package in mobile service through its subsidiary. The new package targeted government employees with low price plan. In 2010 the situation was changed as TRC implemented regulations on price strategies. Hence low-price strategy became unusable. In 2009, there was a transformation program in Alpha and they changed their vision and mission based on new strategic focus. The strategic focus was “customer centric and market oriented”. The generic strategies for gaining competitive advantage also depend on their strategic focus. Alpha has 4 main products. There are Wire line fixed service, IDD, wireless fixed line phone, mobile service, and broad band. Alpha uses lower price for IDD as their technology is highly advanced and enjoys economical scale. Alpha offered “bunch of services” through combination of wire line with broad band service and has differentiated their service from others. A senior executive commented that:

“The way of presenting our broadband facility is now unique. We provide our fixed line connection with broadband service. It is a bundle of different requirements of public. Our strategy is differentiation.”

Alpha has been moving towards from conventional MA to SMA practices. They have been measuring quality of services through MA practices. The customer satisfaction is also measured from the time of Japanese management. These practices are being improved. Around 2008, Alpha has started to practice competitor performance analysis using annual reports, when main competitor entered into the Colombo stock exchange. Alpha uses competitor position analysis, Competitor performance analysis in significant stage, the life cycle accounting is also practiced to a little extent in marketing and project divisions. Alpha is trying to implement ABC and BSC because of strategic focus changed. As the competition is increased, the environment of telecommunication industry becomes more dynamic. Alpha has changed their strategic focus to survive in this dynamic environment. Based on that, they are interested in SMA practices. A senior executive said that:

“In 2000 it was not so much important, because at that time as we were the market leader. But now there is a huge competition. We have to consider cost, quality. We can't just go for low cost end or high quality. We have to craft strategies by scanning the dynamic

environment. So, we need more information. That is why there is a big demand for MA and control systems”

In summary, the findings of the study convey that traditional MA techniques are expanded to SMA due to change of generic strategy from cost leadership to differentiation as dynamic business environment is changed. The business environment has converted to more challengeable due to vigorous competition, high bargaining customers, and government regulations comparing to the early days of Alpha. These changes force them to move from cost leadership to differentiation. The need for external oriented information is gradually increased with strategic change. Therefore traditional MA practices have been shifted to SMA based not only cost perspective but also customer, competitor, and performance perspective.

The study examined the usage of SMA techniques with the changes of generic strategy in a telecommunication company in Sri Lanka. The findings elaborated that the ownership of the company was compelled for the usage and development of MA techniques. First it was owned by government and they did not practice MA. Then it was acquired by Japanese management and for the first time they introduced the MA function to the organization. Subsequently, when Netherlands management took over the management, they further developed MA techniques towards SMA. The study showed that Japanese and Netherlands managements are more concerned about the SMA techniques than government ownership. Similar findings have been made by Lachmann et al. (2013) regarding the usage of SMA techniques in hospitals under competitive market environments. This study further elaborated that the nature and characteristics of management affect for the usage of MA and SMA techniques. Because the Japanese management more used traditional MA techniques and SMA techniques based on cost and customer such as quality costing and customer analysis. The Netherlands management took initiative steps to introduce SMA techniques not only in cost perspective but also competitor perspective and performance perspective. The findings explain that Alpha widely uses quality costing, customer analysis, competitor position monitoring and competitor performance analysis on financial statements. The use of ABC and life cycle costing are at initial stage. But they are not familiar with target costing, value chain costing, and competitor cost analysis. Guilding et al. (2000) also mentioned competitor costing is the most popular practice in NZ, UK and USA. It is revealed that Alpha was not entitled with any generic strategy in early stages due to monopolistic power they

enjoyed. When competition was gradually increasing, they first moved to cost leadership strategy and then shifted to differentiation strategy due to the vigorous competition and government controlling regulations. Wickramasinghe and Alawattage (2007) also mentioned that generic strategy is changing to align with changes in business environment, technology, competitors, regulations and global economy. The study suggested that there is a significant relationship between generic strategy and usage of SMA techniques (Shank, 1989; Shank & Govindarajan, 1989; Lord, 1996; Cravens & Guiding, 2001; Roslender & Hart, 2002; Abdullah & Said, 2015). Alpha practices traditional MA techniques on costing and SMA techniques in cost and customer perspective in the time period of following cost leadership. Further, they have started to use SMA techniques in competitor perspective and performance perspective while they are practicing SMA techniques in cost perspective and customer perspective in the time period of differentiation strategy. Hence the study pointed out that when generic strategy is moved from cost leadership to differentiation, the adaptation rate of SMA practices also increases. (Chenhall & Smith, 1998; Cinquini & Tenucci, 2010).

Time	Before 1997	1997 - 2007	2008 to present
Ownership	Fully Government	Government 65% Japanese Com. 35%	Government 52% Netherlands Com. 45% Public 03 %
Management	Government	Japanese	Netherlands
Competitive Advantage	NO	high cost leadership & moderate differentiation	high differentiation & low cost leadership
SMA practices	NO	Traditional MA Quality costing Customer Analysis	ABC (Initial stage) Life cycle costing (Initial Stage)

			Quality Costing (High usage)
			Customer Analysis (High Usage)
			Competitor position monitoring (High usage)
			Competitor performance analysis on financial statements (high usage)
			BSC (Initial Stage)

Source: Interviews and survey data

Table 03: Generic Strategy and SMA practices in Alpha

CONCLUSION

The study was carried out to explore whether the change in generic strategy leads to changes in SMA practices. The findings revealed that there is a significant relationship between cost leadership strategy and SMA techniques from cost perspective. Further it elaborated that SMA techniques in competitor and customer perspective are more practiced with differentiation strategy. The findings of the study contribute to development of literature in SMA as there is a lacuna in SMA literature (Nixon & Burns, 2012). Further it generates valuable insight in SMA research studies in Sri Lankan context as Langfield-Smith (2007) suggested to conduct studies on practice of SMA techniques in specific organizational contexts. In practice, organizations can use SMA techniques to align with their generic strategy to gain competitive advantage. Further, the finding of the study will support to the managers to use SMA techniques as a strategic management tool in the process of crafting strategies. The main limitation of current study is that the findings cannot be generalized as it is a

case study. The study creates opportunities for future studies to conduct a similar study in different industries and the same study by devising the quantitative methodology.

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Impact of Corporate Governance on Performance of Listed Land and Property companies in Sri Lanka

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Abstract

The Corporate governance practices has become a more crucial issue in recent years, because of its greater significance of practicing accuracy, maintaining accountability, establishing effective internal control and regulating organizations for achieving organizational goals. The purpose of the study is to find out the impact of corporate governance on performance of listed Land and Property companies in Colombo Stock Exchange. Chosen independent variables are auditors, board size, board composition and independent directors of Remuneration Committee. Firm size was considered as a control variable in this study. The dependent variable was identified as Firm performance which was measured using Return On Asset (ROA).

The Population incorporated in this study was Land and Property sector in the Colombo Stock Exchange. From which 17 firms were used as the sample out of 19 listed firms. The data were gathered from firms' annual financial reports and Data Stream over the period of 2011 to 2016, from the CSE website.

Descriptive statistics, correlation analysis, multiple linear regression analysis were used to analyse the data and examine the hypotheses by using the E-views 8 version, in this study.

The findings revealed that there is a positive and significant relationship between ROA with auditors, board composition. Independent directors of Remuneration Committee and board size are insignificantly correlated with ROA. Furthermore, it was found that the control variable (firm size) was insignificant in influencing firm performance (ROA). The R^2 0.236 for the model implies that 23.6 % of the changes in dependent variable are described by both independent and control variables. It is observed that the model is good fit because the prob (F -statistic) is less than 0.05. This study provides useful information for policy makers, regulators in improving the corporate governance policies in the future and also helps in increasing and understanding the relationship between corporate governance and firm's performance.

Key words: Corporate Governance, Board Size, Firm Performance, Return on Assets, Listed Land and Property Companies.

INTRODUCTION

“Corporate governance” first came into vogue in the 1970s in the United States. Within 25 years corporate governance had become the subject of debate worldwide by academics, regulators, executives and investors (Cheffins, 2012). Corporate governance is the means by which a company is operated and controlled. The aim of corporate governance initiatives is to ensure that companies are run well in the interest of their shareholders and the wider community (ACCA, 2016). Corporate governance generally refers to the set of mechanisms that influence the decisions made by managers when there is a separation of ownership and control. The governance mechanisms of modern corporations are of interest to investors, business practitioners, regulators, and scholars. These mechanisms can be broadly classified as internal and external. Internal governance mechanisms in developed market economies focus on the role and functions of ownership structure, boards of directors, Chief Executive officer (CEO) duality, individual and institutional shareholders, activist stock ownership and directors and executive compensation. External governance mechanisms concern the effectiveness of the managerial labour market, the market for corporate control, and government regulations. (Wu et al, 2002; Saha et al, 2018; David, 2005 ;).

The issue of corporate governance has become essential in the present situation because of increasing fraudulent activities, agency conflicts and insider trading which weaken the corporate performance (Enobakhare, 2010). Good corporate governance practices are important in reducing risk for investors; attracting investment capital and improving the performance of companies (Velampy & Pratheepkanth, 2012). Brown and Caylor (2004) found that better-governed firms are relatively more profitable, more valuable, and pay out more cash to their shareholders. Organized corporate governance helps to economic stability by upgrading the performance of organizations and expanding their right to gain entrance to outside capital Shahzad et al (2015). Shleifer and Vishny (1997) defined corporate governance as a way in which suppliers of finance to corporations assure themselves of getting a return on their investment. Irrespective of the particular definition, the importance of corporate governance arises in a firm because of the separation between those who control and these who own the residual claims (Epps and Cereola, 2008). Brown and Caylor (2004) point out that, regulators and governance advocates argue on the stock price collapse of such former corporate stalwarts as Adelphia, Enron, Parmalat, Tyco, and

WorldCom was due in large part to poor governance. If their contentions are valid, a market premium should exist for relatively well-governed firms.

The study attempts to ascertain and establish whether there are significant impacts of corporate governance on firm performance of Listed Land and Property companies in Sri Lanka.

PROBLEM STATEMENT

The impact of corporate governance on firm performance has been a subject of great empirical investigations in finance. Most empirical research has focused on the impact of corporate governance on performance. Furthermore, finance decisions are associated with the agency costs and corporate governance mechanisms. In the present study, the corporate governance and corporate profitability of the land and property companies in Colombo stock exchange (CSE) has been investigated. Several research were undertaken to ascertain how corporate governance has an impact on dividend decision, Capital structure and performance. Several researches have expressed their findings as to how corporate governance had an impact on corporate performance, corporate profitability and firm's value. However such research are rarely carried out in Sri Lanka. No such study has been conducted to investigate the relationship between corporate governance and corporate profitability. Therefore the research problem could be stated as follows. "To what extent the corporate governance have significant impact on firm performance".

OBJECTIVE

The objective of this study is to find out the impact of corporate governance on performance of Listed Land and Property Companies in Colombo Stock Exchange.

SIGNIFICANCE OF THE STUDY

This study is important for the investors to obtain knowledge about mechanism of the corporate governance adopted by their portfolio companies. Furthermore, it provides the opportunities for academics and researchers to study the evidence of whether or not the corporate governance affects the performance of Listed Land and Property Companies in Sri Lanka.

DATA COLLECTION AND SAMPLING

There are 19 companies that are listed on Land and Property sector on Colombo Stock Exchange. This was incorporated as the Population for this study. Among them 17 firms were used as the sample. The research is based on secondary data which gathered from firms' annual financial reports and data stream over the period 2011 to 2016, from the Colombo Stock Exchange (CSE) website. The analysis is based on panel data, by using software package of E-views.

LITERATURE REVIEW

Theoretical evidence on Corporate Governance.

Agency Theory

Agency theory was developed by Jensen and it has its ground in economic theory. Agency occurs when one party, the principal, employs another party, the agent, to perform a task on their behalf. The agents are expected to act and make decisions in the interest of the shareholders rather than in their own selfish personal interests.

Jensen & Meckling (1976) define an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. If both parties to the relationship are utility maximizers there is good reason to believe that the agent will not always act in the best interests of the principal. The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities, of the agent.

According to Vijayakumaran, 2015, Agency theory suggests that the separation of ownership and control in corporations and information asymmetries lead to conflicts of interest between managers and outside shareholders as well as those between controlling and minority shareholders. The agency theory suggests that debt financing is one of the mechanisms to mitigate agency problems and thus to improve firm performance.

Empirical evidence on Corporate Governance.

The concept of corporate governance has been viewed by number of authors and scholars. For instance, David et al (2012) investigated the influence of corporate governance on financial firms' performance during the 2007-2008 financial crisis. In his study, they were using a unique dataset of 296 financial firms from 30 countries that were at the center of the crisis, they found that firms with more independent boards and higher institutional ownership experienced worse stock returns during the crisis period by using regression model.

Saha et al (2018) carried out study to explore the relationship between corporate governance and firm performance with considering the role of board and audit committee using secondary data for the period of 5 years ranging from 2013 to 2017. 81 listed companies in Dhaka Stock Exchange (DSE) were used as sample and the multiple linear regression analysis was used as underlying statistical test. The results of the study signify that board independence ratio and audit committee is statistically significant and has positive impact on Return on Asset (ROA) and Tobin's Q (TQ). But it is not statistically significant in the case of firm performance indicator Return on Equity (ROE) in this study. In addition to this, board size is not statistically significant and has negative correlation with firm performance due to group dynamics, communication gaps and indecisiveness of larger groups.

According to Velampy and Pratheepkanth (2013), there is an impact of corporate governance on ROE and ROA. For their study, they used board structure and corporate report to measure the corporate governance whereas returns on assets, return on equity and net profit were used to measure the firm's performance. The data of ten manufacturing companies in Sri Lanka representing the period of 2006 to 2010 were used for the study. The multiple regression analysis was applied to test the impact of corporate governance on firm performance. Further their study found a positive relationship between the variables of corporate governance and firm's performance.

In one study, Tomar & Bino (2012) expressed the relation between corporate governance and bank performance by using a sample of 14 banks listed on Amman Stock Exchange market over the period 1997 to 2006, and their findings revealed that ownership structure and board composition have a strong impact on the bank performance and board size has no effect on bank's performance.

Wu et al (2002) disclose that ownership concentration and percentage of employees' shareholding have positive impacts on firm performance but the percentage of major officers' shareholding does not. The ratio of insider directors is not related to firm performance either. CEO duality has an impact on chairmen's salaries. However, managerial compensation is, in general, not related to firm performance.

Ibrahim et al (2010) stress that the impact of corporate governance on firm performance. The ROA and ROE are selected as firm's performance variables for this study. The data of corporate governance and the profitability variables were collected from two manufacturing sectors (Chemical and Pharmaceutical) of Pakistan from 2005 to 2009. The findings of this context is that there is a significant impact of corporate governance on ROE while insignificant on ROA. In sector wise analysis, there is an insignificant impact on pharmaceutical sector's profitability and chemical sector ROA. Whereas there is a significant impact of corporate governance on chemical sector ROE.

Shahzad et al (2015), identify the relation among three corporate governance instruments (Board Size, Board Composition and CEO-Status) and one firm performance is measured using ROA Karachi Stock Exchange listed cement firms is observed for the period 2007–2013. Findings of the study was that there is a positive and significant relationship between ROA with board size and negative significant relationship between ROA with CEO-Status. Furthermore insignificant relationship between ROA with board composition by applying the ADFtest multiple regression and T-test exploration.

Bhagat&Bolton(2008) make three additional contribution to the literature, first one is that, stock ownership of board members, and CEO-Chair separation is significantly positively correlated with better contemporaneous and subsequent operating performance. Second, none of the governance measures are correlated with future stock market performance. Third, given poor firm performance, the probability of disciplinary management turnover is positively correlated with stock ownership of board members, and board independence.

Velampy and Nimalathan (2013) undertook a study to find out the relationship between corporate governance practices, capital structure and firm performance in listed manufacturing firms in Sri Lanka with a sample of 25 manufacturing companies using the data representing the periods of 2008 –2012. Leadership structure, board committee, board meeting, board size, board

composition, were used as the determinants of corporate governance practices whereas debt equity ratio (DER) was used as the measure of capital structure and return on equity (ROE) and return on assets (ROA) were used as the measures of firm performance.

Johl et al (2015) undertook a study to examine the impact of board characteristics and firm performance. They tested the effects of board meeting, board independence, board size and directors accounting expertise on firm accounting performance. This research used data from annual reports of the 700 public listed firms in Malaysia for the year 2009. Based on their findings the result shows that board independence does not affect firm performance, whilst board size and board accounting/financial expertise are positively associated with firm performance. Board diligence in terms of board meetings is found to have an adverse effect on firm performance.

Zabri et al (2016) focus on corporate governance practices among Top 100 public listed companies in Bursa Malaysia and the relationship between corporate governance practices with firm performance, showed that board size has significantly weak negative relationship with ROA but it was found to be insignificant to ROE. The other finding indicated that there was no relationship between board independence and firm performance.

Faizul and Thankom (2016) investigate the influence of firm-level corporate governance on financial performance of the listed firms in Bangladesh. Agency theory suggests that better corporate governance reduces expropriation costs, which, in turn, enhances investors' confidence in the firm's future cash flow and growth prospects, leading to higher firm valuation. Likewise, a decrease in private benefits is likely to cause an improved operating performance. This research uses a questionnaire survey-based corporate governance index (CGI), comprising of the three dimensions – shareholder rights, independence and responsibilities of the board and management, and financial reporting and disclosures. The study results partly confirm the prediction of the agency theory, with a statistically significant positive relationship between a firm's corporate governance quality and its valuation, even though the relationship between firm level corporate governance and operating performance seems inconclusive.

Simon&Enoghayinagbon(2014) examine the relationship between corporate governance and financial performance of randomly selected quoted firms in Nigeria. It investigates corporate governance variables and analyses whether they have an impact on firm performance as measured by return on asset (ROA) and profit margin (PM). Four corporate governance variables were selected namely: composition of board member, board size, CEO status and ownership

concentration which served as the independent variables. The ordinary least square regression was used to estimate the relationship between corporate governance and firm performance. Findings of the study show that there is a positive and significant relationship between composition of board member and board size as independent variables and firm performance. CEO status also has positive relationship with firm performance but insignificant at $P < 0.05$. However, ownership concentration has negative relationships with return on asset (ROA) but positive relationship with profit margin (PM). The relationships are not significant at 5%. The study recommends among other things that companies' board should be majorly dominated by independent directors and board size should be in line with corporate size and activities.

Puwanenthiren et al., (2016) analyze the correlation between Board attributes and company performance in a sample of 100 Australian and 100 Sri Lankan firms. The analyzed board attributes include size; gender ratio; fraction of non-independent members; and experience. The level of economic development considered to have a potential confounding effect on the outcomes. The analysis of the data suggest that: boards in Australia are much larger than boards in Sri Lanka; Boards are male dominated in both nations; and while board structure provides predictive insight into firm performance, only a few individual attributes are significant. Important finding of this research is that the larger boards of Australia have significantly stronger influence on firm performance than relatively smaller boards of Sri Lanka. Future research should extend the review of the effects of board size on corporate performance.

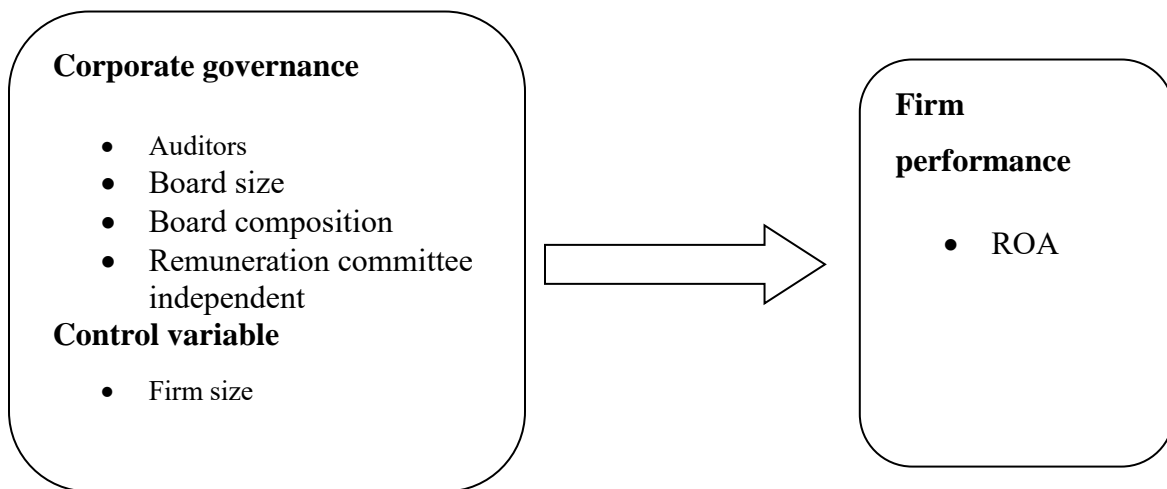
Zhaoyang & Udaya (2012) examine the relationship between corporate governance structures and firm performance of listed firms on Colombo Stock Exchange (CSE) in Sri Lanka. Data were collected from 174 firms in the financial year 2010 and multiple regression analysis were used to examine whether the existing corporate governance mechanisms influence the firm performance of listed firms in Sri Lanka. The study found that, (i) board size and proportion of non-executive directors in the board shows a marginal negative relationship with firm value, (ii) proportion of non-executive directors in a board and financial performance of firm shows negative relation contrary to the findings of previous studies. The firm size and director shareholdings have a significant impact on firm performance of listed firms in Sri Lanka.

Mwangi (2012) investigates the effects of corporate governance on the financial performance of listed companies at (NSE). Specifically, this study examined board size, board composition, CEO duality and leverage and how they affect the financial performance of listed Companies at National

Stock Exchange of India Limited (NSE). Firm performance was measured using Return on Assets (ROA) and Return on Equity (ROE). This study adopted a descriptive research design. The study population was all those Companies which were quoted on the Nairobi Securities Exchange as at December 2012. Secondary data were collected using documentary information from company annual accounts for the period 2008 to 2012. Both descriptive and inferential statistics were used. Data was analyzed using a multiple linear regression model. The study found that a strong relationship exist between the corporate governance practices under study and the firms' financial performance. There was a positive relationship between board composition and firm financial performance. However, the most critical aspect of board composition was the experience, skills and expertise of the board members as opposed to whether they were executive or non-executive directors. Similarly, leverage was found to positively affect financial performance of insurance firms listed at the NSE. On CEO duality, the study found that separation of the role of CEO and chair positively influenced the financial performance of listed firms

THE CONCEPTUAL FRAME WORK

The following conceptual model has been developed to show the relationship between corporate governance and firm performance.



Source: Developed by Researcher

Conceptual model shows that corporate governance is independent variable corporate performance is dependent variable.

Definition of variables

The following table shows the corporate governance variables and their description in this context.

Table 1: Variable definitions

Variables	Description	Measures
Dependent variable		
Firm performance ROA	Return on Asset	Net profit after tax and provision divided by the total asset at the end of each year
Independent variables		
AUD	Auditors	Numbers of members in audit committee.
BSIZ	Board size	Total number of directors on the board as at the end of each year
BCOM	Board composition	Board independence (including independence of board committees) of board members
INDR	Independent directors of remuneration committee	Number of independent directors in remuneration committee
Control Variables		
FSIZ	Firm size	The natural log of the total assets.

Source: Developed by Researcher

HYPOTHESIS OF THE STUDY

For the study, following hypothesis were formulated in order to examine the relationship between the variables, based on the theory, and previous studies outlined.

Hypothesis1: The corporate governance significantly impact on Firm performance and which measured by using ROA.

REGRESSION MODELS USED IN THIS STUDY

To investigate the impact of corporate governance on firm performance, the following regression model can be developed based on the variables used in the study.

$$ROA = f(, AUD, BSIZ, BCOM, INDR, FSIZ) \quad \text{Equation 1}$$

$$ROA = \beta_0 + \beta_1 AUD + \beta_2 BSIZ + \beta_3 BCOM + \beta_4 INDR + \beta_5 FSIZ + E_{it} \quad \text{model 1}$$

ROA = Return on Assets.

AUD= Auditors

BSIZ= Board size

BCOM= Board composition

INDR= Independent directors of remuneration committee

FSIZ= Firm size

β_0 = Constant.

ϵ = Error term.

EMPIRICAL RESULTS OF THIS STUDY

Descriptive Statistics

Table 2 presents descriptive statistics for the variables used in the analysis for this pooled sample. The pooled mean (median) return on assets (*ROA*) is 5.050843 (5.55948) respectively. The average auditor size is 3.07 (the median is 3). The average board size is 8.42 (the median is 8.5) also board composition have an average of 2.52 (median 3) and the independent directors of remuneration committee has an average value of 2.51 and the median is 3. With respect to the

control variables included in this model, average size of the sample firms measured by real sales is about 3.09E+09 (1.22E+09)LKR.

These summary statistics indicate that the sample used in this study is comparable to those used in prior research in the Context of Sri Lanka.

Table 2: Summary statistics

	AUD	BSIZ	BCOM	INDR	FSIZ	ROA
Mean	3.070000	8.420000	2.790000	2.510000	3.09E+09	5.050843
Median	3.000000	8.500000	3.000000	3.000000	1.22E+09	5.559480
Maximum	5.000000	11.00000	5.000000	5.000000	3.23E+10	44.87343
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000	-24.58000
Std. Dev.	0.945537	1.364633	1.148517	1.251222	6.14E+09	9.222536
Observations	100	100	100	100	99	100

Multicollinearity test

Multicollinearity can be measured using Variance Inflation Factor (VIF) or Tolerance test. In this study, VIF was used.

Table 3: VIF Analysis

Variable	Coefficient Variance	Centered VIF
C	35.49627	NA
AUD	1.165599	1.667598
BSIZ	0.377288	1.123297
BCOM	0.970518	1.925390
INDR	0.928520	2.230802
FSIZ	2.55E-20	1.518853

According to the Table 2 VIF values are below 10 and where VIF values are less than 10 then there is no any issue on multi- co linearity.

Correlation Analysis

To find out the relationship among variables, correlation analysis was carried out. The summary of the results are presented in the Table 4.

Table 4: Correlation analysis

	AUD	BSIZ	BCOM	INDR	FSIZ	ROA
AUD	1.000000					
BSIZ	0.023260	1.000000				
BCOM	0.472772	0.250330	1.00000			
INDR	0.560220	0.093775	0.648882	1.000000		
FSIZ	0.482738	0.145132	0.370390	0.523851	1.000000	
ROA	0.392940	0.114334	0.428548	0.352838	0.194669	1.000000

Table 4 reports the Pearson correlation coefficients between variables. Auditors size (AUD), board composition (BCOM) shows a positive and statistically significant correlation with firms' performance measured by both ROA. This result is consistent with the hypothesis. Turning to control variables, firm size (FSIZ) has an insignificant positive correlation with measures of performance. Furthermore, table 4 suggests that the observed correlation coefficients between independent variables are relatively low, multicollinearity is not a serious issue in this study.

Regression Analysis**Table 5: relationship between corporate governance and firm performance.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.09560	5.957875	-2.030188	0.0452
AUDITORS	2.463179	1.079629	2.281504	0.0248
BOARD_SIZE	0.359153	0.614238	0.584712	0.5602
COMPOSITION	2.193423	0.985148	2.226490	0.0284
REMU_COM_INDEPNT	0.397122	0.963598	0.412125	0.6812
FIRM_SIZE	-1.08E-10	1.60E-10	-0.674041	0.5020

R-squared	0.236330	Mean dependent var	5.350145
Adjusted R-squared	0.195272	S.D. dependent var	8.767755
S.E. of regression	7.865257	Akaike info criterion	7.021479

Sum squared resid	5753.191	Schwarz criterion	7.178759
Log likelihood	-341.5632	Hannan-Quinn criter.	7.085115
F-statistic	5.756062	Durbin-Watson stat	1.723731
Prob(F-statistic)	0.000113		

The table 5 shows the estimated result of model 01. R square shows that the model explained 23.6330% of total variations of the dependent variable. It means that 23.6330% of the changes in dependent variable are described by both independent and control variables. As a point of focus, the hypotheses of this study states that the Audit committee sizesignificantly affects the Firm performance of listed Land and Property Companies.

As observed, the results show that Auditors has a coefficient of 2.463179 with t statistics of2.281504 with a p value of0.0248. Thus, from the results, it can be stated that there is a significant impact of Auditors on firm performance. Board size has a coefficient of 0.359153with t statistics of0.584712with a p value of 0.5602. Board composition has a significant impact on firm performance while the coefficient is 2.193423, with t statistics of 2.226490 and the p value of 0.0284.

Remuneration Independent and firm size does not significantly impact on firm performance. Durbin Watson test is a test used to defect auto correlation. From the Table 5 Durbin Watson stat value is1.723731. This value which is less than 3 indicates that there are no auto correlation issues.

CONCLUSION

This study examined the impact of corporate governance on firm performance of Listed Land and Property Companies in Sri Lanka.This study shows that the Auditors and Board composition significantly impact on Firm Performance. Remuneration independent and firm size does not significantly impact on firm performance. R square shows that the model explained 23.6330% of total variations of the dependent variable. It means that 23.6330% of the changes in dependent variable are described by both independent and control variables. The research was carried out by using the data over the period 2011to 2016, and only the firms in Colombo Stock Exchange (CSE) operating in the Land and Property sector were included. In future study different sectors may be analysed. There is a scope of further research to examine the impact of corporate governance mechanisms subject to diverse social and environmental agency issues and their market valuations.

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Impact of Intellectual Capital Disclosure Practices on the Credibility of the Financial Statements

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Abstract

Intellectual capital is the knowledge that can be exploited for money-making or other useful purposes. The term combines the idea of intellect or brain-power with the economic concept of capital. Even though there is an impact of intellectual capital disclosure practices on business performances; only the financial capital is recorded in the financial statements. It means that the credibility of the financial statements is understated. Therefore, this study aims to investigate the impact of intellectual capital disclosure practices on the credibility of the financial statements. Further, the relationship between the managerial perception of intellectual capital disclosure practices and the credibility of financial statements has been investigated. As the method, the primary data was collected through a questionnaire. The targeted sample was the financial managers who are directly involved in the preparation of financial statements in public limited companies. 150 questionnaires were distributed covering financial managers of all the sectors using the stratified random sampling method. There were three hypotheses developed covering the major components of intellectual capital as human, customer and social. Correlation analysis was done to test the hypothesis using the SPSS software. It was found that there is a relationship between the managerial perception of intellectual capital disclosure practices and the credibility of the financial statements. Through a regression analysis, it showed that there is an impact of intellectual capital disclosure practices on the credibility of financial statements. The managers believe that the existing reporting practices do not represent the reality of the organizational performance until the intellectual capital is incorporated to the financial statements. Further, they have suggested that there should be a proper mechanism to report the intellectual capital in the financial statements or in the annual reports to avoid such kind of misrepresentation.

Keywords: Intellectual Capital, Disclosure Practices, Credibility, Financial Statements

INTRODUCTION

Intellectual capital disclosure practices are one of the modern accounting practices in the field of accounting and that is a voluntary disclosure practice which is used by companies to show their strengths of intellectual capital to the stakeholders (Guthrie & Petty, 2004). The companies mostly use the annual reports to report their intellectual capital. Dzinkowski (2000) says that presently, there is no any universally acceptable definition for intellectual capital, although practitioners, business journalists and academicians have the same board set of practices in mind. At the present time, there is still room for experimentation in quantifying and reporting on the intellectual capital of an organization.

There are three capital components that can be identified in the Intellectual Capital (IC) as Human Capital (HC), Organizational Capital (OC) and Social Capital (SC). Those capitals give a considerable contribution to the wealth of the organization (Sevlby, 1997; Stewart & Ruckdeschel, 1998; Leon, 2002; Caddy, 2000) and the main problem is the subjectivity and complexity of reporting them (Svelby, 2000; Sullivan, 2000; Seetharamnan, Lock and Saravanan, 2004). Therefore, it is hard to compare and get a clear idea about the intellectual capital of the organizations. Without proper reporting of intellectual capital, the financial statements of the companies do not represent the real value of their organization. (Edvinsson, 1997; Johanson, 1999; Roslendr and Fincham, 2001). Therefore, the decisions taken by referring the figures of financial statements will be problematic without considering the strength of intellectual capital of the company (Bredker, Guthrie and Cuganensum, 2005). According to the Sri Lankan context, finding the importance of reporting the intellectual capital in the financial statements is also needed (Abeysekara and Guthrie, 2005).

Since, there is no any proper mechanism to disclose the intellectual capital in the financial statements, the credibility of the financial statements will be problematic (Han and Han, 2004; Homer, 2009; Leslie, Eyesan and Semiu, 2009). According to American Heritage Dictionary (2010) of the English Language, financial credibility is the capacity for belief the financial statements. Collins English Dictionary (2003) stipulates that the financial credibility is the quality of being believed or trusted about the financial statements. If the credibility is not available, then the comparison of financial statements will not be worthwhile and create a gray space which is questionable. But, to represent the exact resource base of the organizations and to enhance the

credibility, it is needed to develop a proper mechanism to disclose the intellectual capital in the financial statements (Zambon, 2005). Therefore, due to the improper practices of intellectual capital disclosures, the financial credibility of the financial statements is understated. This study was aimed to find the relationship between the managerial perception of intellectual capital disclosure practices and the financial credibility of the financial statements.

LITERATURE REVIEW

Intellectual capital is the knowledge that can be exploited for money-making or other useful purposes. The term combines the idea of intellect or brain-power with the economic concept of capital. The saving of entitled benefits can be invested in producing more goods and services (Guthrie, Petty and Johanson, 2001). There are three components in intellectual capital as human, organizational and social capital.

Human capital also encompasses how effectively an organization uses its people's resources as measured by creativity and innovation (Petrash, 1996; Guthrie, Petty and Johanson, 2001; Gegan and Draghici, 2013). Therefore, in this study, leadership styles, employee motivation and satisfaction, work related knowledge and competency, entrepreneurial spirit and innovativeness of the employee of the listed companies have been investigated under the human capital as a major section of intellectual capital.

Organizational capital means the knowledge flow of the structure of the organizations. It includes corporate strategies, processes, corporate culture, systems, and management credibility of the organizations (Petrash, 1996; Guthrie, Petty and Johanson, 2001; Gegan and Draghici, 2013). It is named as Structural Capital which is internal. All the internal knowledge flow raised from the organizational structure has been discussed under the organizational capital as a main section of intellectual capital.

Social capital is directly related to the external environment of the organization. It includes the customer based whole society. Quality of the product, customer satisfaction, growth of the business in the market, customer complaints and favorable contracts with the peer groups (Petrash, 1996; Guthrie, Petty and Johanson, 2001; Gegan and Draghici, 2013) have been discussed under the social capital as a major part of the intellectual capital. This social capital is also called as customer capital.

The main dependent variable of this study is the credibility of financial statements. The credibility of financial statements has very salient implications for the quality of decisions that investors can make (Leslie, Eyesan and Semiu, 2009). Therefore, financial credibility can be defined as the capacity of believing the financial statements which basically cover the reliability, relevance, comparability, quality of representation and the risk of the financial statements (Han and Han, 2004; Homer, 2009).

Resource Dependence Theory (RDT) was the main theory which is used in the study. RDT is the study of how the external resources of organizations affect the behavior of the organization. Therefore, this covers all the variables of IC disclosures and RDT fits to this study. The procurement of external resources is an important tenet of both the strategic and tactical management of any company. The core of this theory was linked to the operationalization of variables.

Current Knowledge

It has been mentioned the evolution of intellectual capital reporting practices in the organizations and early research projects have tried to develop guidelines and accounting standards for intellectual capital. (Nerdrum and Erikson, 2001; Lim and Dallimore, 2004; Dumay, 2014). Considering the direct impact of organizational resources on the performance of the company is the key concept of being successes in the business field. The resources-based theory has contributed a lot in this field specially how to allocate the intangibles in measuring organizational performances. (Barney, 1996; Barney, Ketchen and Wright, 2011). But, the suggested findings were not much string enough to report them. Still there is no any method applied by the organizations. This study is aimed to analyze the implementation issues of reporting the suggested IC measurements by the said researchers.

As evident by number of researchers, Campbell and Rahman (2010) have suggested that the common categories and dimensions for reporting the intellectual capital covering the major three areas as human capital, customer capital and organizational capital. Striukova, Unerman and Guthrie, J (2008) have done a research on the topic “Corporate reporting of intellectual capital: Evidence from UK companies”. It stated that the disclosures of the IC using a content analysis.

That was also not covered the valuation and measurement of them. These common variables have been introduced by the said scholars to represents the IC. Therefore, these variables have been taken in to account to do this study. Kannan (2008) has done a broad literature survey. The literature survey included financial and accounting measurement techniques, perceptual measures, process and systems measures, social networks analysis techniques, and econometric techniques for intangibles measurement. It is discussed in detail about the seminal studies and popular frameworks for intellectual capital measurement. But, that was also not finalized to introduce a proper mechanism to measure the intellectual capital. The argument of this study is totally lined to the findings of the said research study. Therefore, it has been shown that there should be further studies to address the common issue with regard to finding a common procedure to report IC.

Brennan and Connell (2007) have done a prior research analysis on intellectual capital. As evident, both theoretical and empirical studies have been undertaken on intellectual capital in recent years. Early research focused on defining intellectual capital and on methods of classification (Brooking, 1996; Edvinsson and Malone, 1997; Sveiby, 1997; Roos et al., 1997; Nash, 1998). Proposed different frameworks for classifying intellectual capital are there in the recent history of IC. These frameworks are broadly similar, But, show different interrelationships among the elements of intellectual capital (Kaplan and Norton 1996; Sveiby 1997; and Edvinsson and Malone, 1997; Petty and Guthrie, 2008).

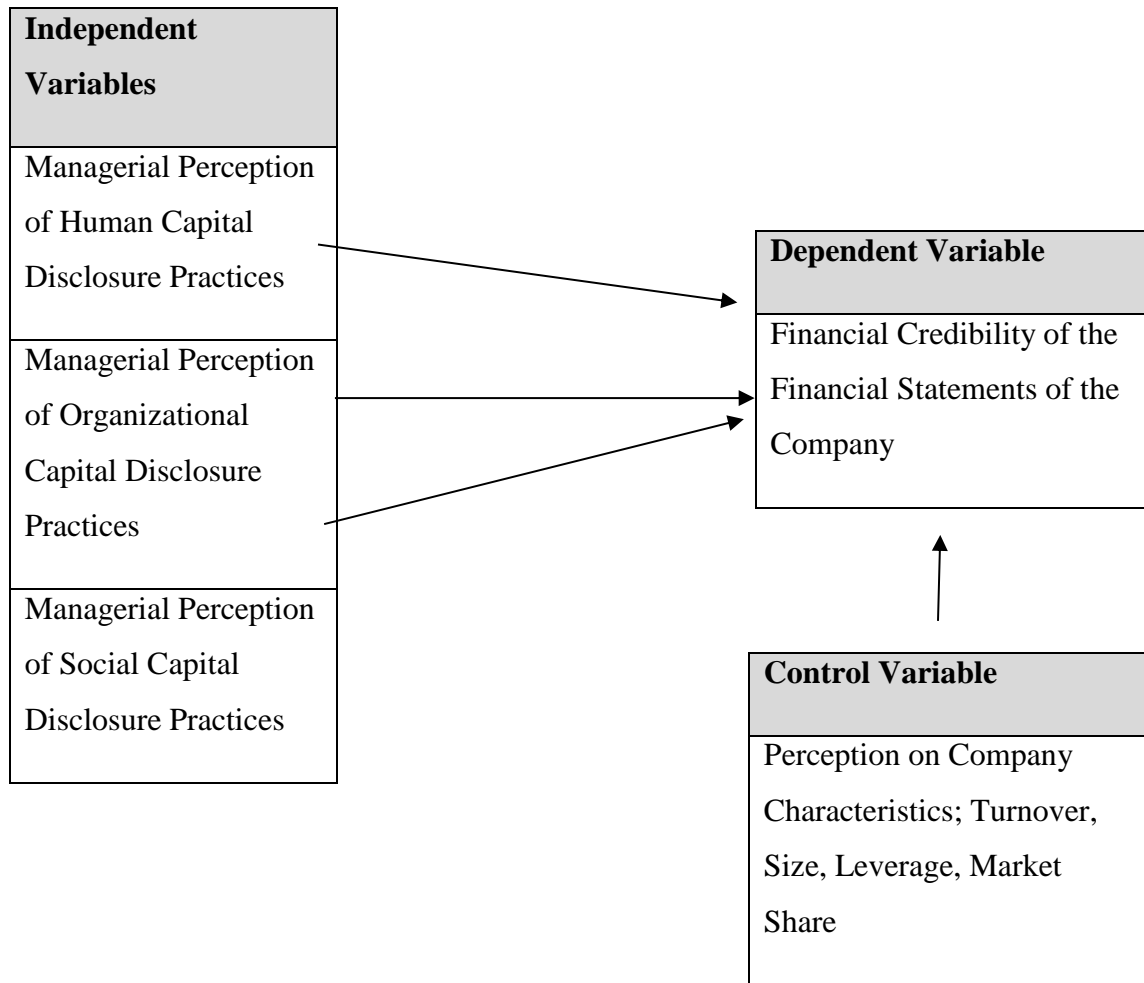
By reviewing the literature, the gap can be identified clearly. The gap here is that the fulfillment of representing the total wealth of the companies in the financial statements by enhancing the financial credibility through intellectual capital disclosure practices. Otherwise the financial credibility of the companies will be understated, and the financial statements do not show the real picture of the company.

METHODOLOGY

The conceptual framework has been designed by addressing the independent and dependent variables which were mentioned in the problem and the objective of the study.

There was a controllable variable which can be affected the relationship of the independent and dependent variables. According to the conceptual framework, there are three relationships can be identified. The developed conceptual framework and hypotheses can be mentioned as follows.

Figure 3.1 – Conceptual Framework



H1₁: There is a relationship between Managerial perception of *Human Capital Disclosure Practices* and the *Financial Credibility of Financial Statements* of Listed Companies

H2₁: There is a relationship between Managerial perception of *Organizational Capital Disclosure Practices* and the *Financial Credibility of Financial Statements* of Listed Companies

H3: There is a relationship between Managerial perception of *Customer Capital Disclosure Practices* and the *Financial Credibility of Financial Statements* of Listed Companies

To test the hypotheses, the data collection method and the selection of sample have been mentioned as follows.

Table 1 - Population and Sample

Method and Source	Population	Sample
Data collection Primary data through a Questionnaire (Leon, 2002)	There are around 298 public quoted companies under 20 industry sectors. All the chief managers of finance division of the above companies can be taken as the population.	Questionnaires were distributed to the chief accountant / finance managers of following selected companies. At least 50% of the companies from each industry sector were selected as the sample. For that stratified random sampling method was used. The rationale for selecting the sample was to give an equal opportunity to each and every sector since all the companies of each sector have attended to report the IC.

Data analysis was done through the SPSS software. A correlation analysis was done to test the hypotheses and a regression was run to find the impact of intellectual capital disclosures on financial credibility in financial statements.

FINDINGS AND DISCUSSION

Relationship between Intellectual Capital Disclosures and Financial Credibility

Hypothesis 1

H1: There is a relationship between human capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka.

Table 2- Human Capital Disclosure Practices and Credibility of Financial Statements

Control Variables			FCM
CVM	HCM	Correlation	.527
		Significance (2-tailed)	.001
		Df	147

CVM: Control Variable (Mean)

HCM: Human Capital (Mean)

FCM: Financial Credibility (Mean)

According to this, the significance is 0.001. The tested confidence level is 95%. The significance is $0.001 < 0.050$. Therefore hypothesis H_{11} is supported and H_{10} is not supported. It can be concluded that there is a relationship between human capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka. That means there the variables are highly correlated since the correlation is greater than 0.5. The strength of the relationship between independent and dependent variables is expressed by squaring the correlation coefficient and multiplying by 100. The resulting statistic is known as variance explained (or R^2). The correlation of 0.527 means $0.527^2 \times 100 = 28\%$ of the variance in dependent is "explained" or predicted by the independent variable. The reason why squaring a correlation results in a proportion of variance is a consequence of the way correlation is defined. The final answer is that the alternative hypothesis is supported with a higher correlated value which shows the strong relationship.

Hypothesis 2

H₂₁: There is a relationship between organizational capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka.

Table 3 - Organizational Capital Disclosure Practices and Credibility of Financial Statements

Control Variables			FCM
CVM	OCM	Correlation	.633
		Significance (2-tailed)	.000
		Df	147

CVM: Control Variable (Mean)

OCM: Organizational Capital (Mean)

FCM: Financial Credibility (Mean)

According to this, the significance is 0.000. The tested confidence level is 95%. The significance is $0.000 < 0.050$. Therefore hypothesis H_{21} is supported and H_{20} is not supported. It can be concluded that there is a relationship between organizational capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka. That means there the variables are highly correlated since the correlation is grater then 0.5. The strength of the relationship between independent and dependent variables is expressed by squaring the correlation coefficient and multiplying by 100. The resulting statistic is known as variance explained (or R^2). The correlation of 0.633 means $0.633^2 \times 100 = 40\%$ of the variance in dependent is "explained" or predicted by the independent variable. The reason why squaring a correlation results in a proportion of variance is a consequence of the way correlation is defined. The final answer is that the alternative hypothesis is supported with a higher correlated value which shows the strong relationship.

Hypothesis 3

H3₁: There is a relationship between customer capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka.

Table 4 - Customer Capital Disclosure Practices and Credibility of Financial Statements

Control Variables			FCM
CVM	CCM	Correlation	.527
		Significance (2-tailed)	.001
		Df	147

CVM: Control Variable (Mean)

CCM: Customer Capital (Mean)

FCM: Financial Credibility (Mean)

According to this the significance is 0.002. The tested confidence level is 95%. The significance is $0.002 < 0.050$. Therefore hypothesis H_{31} is supported and H_{30} is not supported. It can be concluded that there is a relationship between customer capital disclosure practices and credibility of financial statements of listed companies in Sri Lanka. That means there the variables are highly correlated since the correlation is grater then 0.5. The strength of the relationship between independent and dependent variables is expressed by squaring the correlation coefficient and multiplying by 100. The resulting statistic is known as variance explained (or R^2). The correlation of 0.653 means $0.653 \times 100 = 43\%$ of the variance in dependent is "explained" or predicted by the independent variable. The reason why squaring a correlation results in a proportion of variance is a consequence of the way correlation is defined. The final answer is that the alternative hypothesis is supported with a higher correlated value which shows the strong relationship.

Impact of Intellectual Capital on Financial Credibility

According to the given answers of the respondents for the questionnaire, a multiple regression model was developed using SPSS to find the impact of the independent variables on the dependent variable.

Table 5 - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.760 ^a	.578	.557	.43497

a. Predictors: (Constant), CVOF4, HCM, CVOF1, OCM, CVOF2, CCM, CVOF3

The "R" column represents the value of R, the multiple correlation coefficient. R can be considered to be one measure of the quality of the prediction of the dependent variable; in this case, financial credibility of financial statements. A value of 0.760, in this, indicates a good level of prediction. The "R Square" column represents the R² value (also called the coefficient of determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). The value is 0.578 that the independent variables explain 57.8% of the variability of our dependent variable, financial credibility of financial statements.

The F-ratio in the ANOVA tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, $F(7, 142) = 27.788$, $p < .05$. Therefore, the regression model is a good fit of the data.

Table 6 - ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.802	7	5.257	27.788	.000 ^a
	Residual	26.866	142	.189		
	Total	63.668	149			

a. Predictors: (Constant), CVOF4, HCM, CVOF1, OCM, CVOF2, CCM, CVOF3b. Dependent Variable: FCM

According to the estimated model coefficients, the following model equation can be developed.

$$\begin{aligned} \text{Predicted FCM} = & 1.020 + (0.102 \times \text{HCM}) + (0.254 \times \text{OCM}) - (0.322 \times \text{CCM}) \\ & + (0.206 \times \text{CVOF1}) - (0.034 \times \text{CVOF1}) - (0.124 \times \text{CVOF1}) \\ & + (0.023 \times \text{CVOF1}) + SE \end{aligned}$$

FCM: Financial Credibility – Dependent Variable

HCM: Human Capital – An Independent Variable

OCM: Organizational Capital – An Independent Variable

CCM: Customer Capital – An Independent Variable

CVOF1,2,3,4: Control Variable

SE: Standard Error

Unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant. Consider the effect of HCM in this example. The unstandardized coefficient B1, for HCM is equal to 0.025 (see coefficients table). This means that for each one unit increase in HCM, there is an increase in FCM of .025.

According to the model summary, it can be stated that there is an impact of the intellectual capital disclosure practices and the credibility of financial statements. According to the given opinion of the financial managers their responses proved that there is a significance impact. All the statistical test is shown that there is an impact of the independent variables on the dependent variable significantly. Controllable variable is also adjusted to the independent variables and to the model equation according to the statistical concept and the theory. In nutshell, a multiple regression was run to predict FCM from HCM, OCM and CCM. These variables statistically significantly predicted FCM, $F(4, 145) = 40.750, p < .05, R^2 = .516$. All four variables added statistically significantly to the prediction, $p < .05$.

RECOMMENDATIONS AND CONCLUSION

It was found that there is a relationship between the managerial perception of IC disclosure practices and financial credibility of financial statements. Therefore, all the organizations should identify the relationship of that. The organizations should be able to report the IC information by using a common method. A request should be done from the ICASL or any authorized body to interfere this matter to streamline the IC reporting process.

Developing of a method will be possible if there is a space for reporting the IC in the annual reports. There will be a possibility to find the relationships or link the variables with available data. Before, identifying a common method, the companies should attend and should have an interest on reporting the IC in their annual reports. Therefore, before formulating a framework, it is better to report the IC even using a descriptive method to identify the link between the IC and credibility of financial statements. Then a common method for descriptive data should be developed. If there are details and information, it is possible to for streamlining the reporting process.

Financial credibility of financial statements is a part of the financial statements, not a part of the disclosures in the annual reports. Therefore, finding a proper method is needed. There should be a method of measuring those using numerical figures at the initial stage. For example, employee satisfaction index, customer satisfaction index, number of customer complaints, number of qualified staffs, etc can be quantified. Then those things should be reported by linking the vales of the financial statements like the customer satisfaction with sales volume, etc. There should be a

method of reporting them even in the notes of financial statements before recognizing them on the face of the financial statements. Since there is a relationship between intellectual capital disclosures and financial credibility and as well as an impact of intellectual capital disclosures on financial credibility on the financial statements, companies should attend on reporting the intellectual capital in a proper manner to enhance the credibility of financial statements.

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Ownership Structure and Risk Management: Evidence from Sri Lanka

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Abstract

Today almost all business firms confront with an important issue that is conflict of interest between shareholders and management of the company. Corporate governance is a key mechanism that articulated to protect the interests of shareholders and all other stakeholders. As a part of corporate governance, the ownership structure performs a significant role in minimizing the cost related with the separation of ownership and control of the company. Different ownership structures take different dimensions and it affects to determine the directions of an entity. According to the ownership structure entities have to face various risks as well as challenges. Many researchers found that the way of accepting and managing risk is different according to the various structure of ownership. Country's social, economic, political and regulatory environment affects to determine the shape of ownership structure of an entity. So it should necessarily be investigated whether the ownership structure affects towards the risk management of the listed companies in Sri Lanka. This research focuses to investigate the effect of ownership structure on risk management while filling the contextual research gap. For this study, all companies listed in Colombo Stock Exchange (CSE) are considered as the population. Stratified sampling method was employed and 30 companies were selected. The analyzing time period was 2012 to 2017. Data was collected from annual reports of selected companies. Institutional Ownership, Family Ownership and Ownership Concentration are considered as independent variables. As the control variables Firm Size and Financial Leverage are taken into account in this study. Risk management is considered as the dependent variable. Risk management was measured by using beta value. Regression analysis was employed to analyze the data. The findings of this study revealed that ownership structure significantly affects on risk management. The results of this study will help entities to articulate and form their ownership structure so as to mitigate and manage the risk of that entity.

Keywords: Agency Theory, Colombo Stock Exchange, Ownership Structure, Risk Management

INTRODUCTION

In the late 19th century, ownership and management of business firms were belonging to same person, the capital provider. The owner of the firm managed whole entity as his or her own wish. Later, the set of business entities gradually widen and it was difficult to manage whole business

by owner sporadically. This emphasised the necessity of managers on behalf of the owners. Owners appoint managers to manage their business entities. This is the point where the separation of ownership has been occurred and it implemented the base for the agency theory (Jensen & Meckling, 1976). An agency relationship exists between the agent and the principal of the business entity. The conflict may arise when both parties concern about their wealth maximization. Managers may make decisions in order to maximize their own wealth and this may not necessarily be in the best interest of the principal. Then, the agency problem will arise. Jensen's and Meckling's (1976) original model illustrates how agency cost is occurred due to the agency theory. An important argument in their theory is that external stakeholders are unable to observe managers' tasks in the entity without bearing any cost. Agency costs are the costs of disagreement between shareholders and business managers, who may not agree on which actions are best for the business (Peavler, 2018). Agency cost can be categorized as an internal cost type relating to the agent and principal due to the misalignment of interest between agent and principal. In a business entity, Principals are the shareholders while managers play the agent role. Shareholders expect to maximize their wealth and they assign managers to do so on behalf of them. But managers try to make their own betterment while reinforcing personal power and wealth. This divergent phenomenon instigates to arise agency cost. Agency cost is an aggregation of monitoring cost, bonding cost and residual cost (Jensen & Meckling, 1976).

Agency theory plays a vital role in corporate governance since all most all business entities suffer from this issue in various dimensions. Corporate governance mechanisms have been articulated to protect the shareholders' interest. This mechanism assures the protection of shareholder's interest and adequate return for their investment (Shleifer and Vishny, 1997). Corporate governance concept emphasizes the managers' responsibility and accountability towards the protection of shareholders' interest. Good corporate governance result in to improve the country's economic development. Weak forms of corporate governance structures conduce higher problems of agency costs (Core et al., 1999). Ownership structure is a main aspect of corporate governance mechanism. Ownership Structure plays a vital role in reducing agency cost (Panda and Leepsa, 2017). Jensen's and Meckling's views illustrates the ownership structure of an entity which demonstrates how much the company insiders and out siders own. Simply, the ownership structure means the way of distribution of equity among various owners or shareholders. This concept is very much important in corporate governance since it determines managers' incentives and ultimately

economic efficiency of such entities (Jensen & Meckling, 1976). If business entity does not have a well-organized ownership structure, investors may not lend their money to buy shares in that company. So it will be a risk for the entity. Ownership structure can influence to the firms' performance whenever a conflict of interest occurs between management and shareholders and/or between controlling and minority shareholders. When managers allure to gain perquisites, it may result in to breach the protection of shareholders' interest. In the controlling and minority shareholder conflict, controlling shareholders enjoy private benefits by using their controlling power. Shareholders with higher level of shares may use their power to acquire private benefits, which are not enjoyed by other shareholders (Barclay and Holderness, 1989). This may result to leave minor shareholders from the entity. Then it may be a risk for the company because of the decrease of its' share capital. Solutions for this problem is establishing good corporate governance practices within entity and ensuring well established ownership structure. Theoretically, Block holders (large owners) interfere to reduce the conflict of interest between shareholders and managers. But some researchers found that block holders may arise conflict of interest with minority shareholders (Shleifer and Vishny, 1997).

In this study four ownership structure dimensions have been considered. They are institutional ownership, family ownership and ownership concentration. Many researchers found that, the ownership structure affects the performance of the business entity and the way of forming ownership structure result in to various risk conditions (Hoang et al.,2017; Mollah et al.,2012; Laiho, 2011;Chun et al.,2011; Yammeesri,2003; Core et al.,1999; Berkman and Bradbury,1998). According to the agency theory entities have to face various risks due to the agency problem. Hence the necessity of risk management may be varied as per the form of ownership structure. The purpose of this study is to examine, how various ownership structure dimensions demand the need of risk management in the context of Sri Lanka. Objective of this study is to examine whether there is an impact of institutional ownership, family ownership and ownership concentration on risk management in companies listed on CSE. Similar studies can be found in international context, but it is rear to find similar and up to date studies in Sri Lankan context, so this study tries to fill that contextual gap. The Findings of this study may contribute companies to articulate their ownership structure so as to mitigate the risk. This empirical results will help to conduct future researches, especially in Sri Lankan context.

LITERATURE REVIEW

Ownership Structure

There are various forms of ownership structures can be seen in the today's business environment. Institutional ownership, family ownership, managerial ownership, private and public ownership and diverse and concentrated ownership are some of them. Different firms have various types of ownership mix. So firms face various risk levels as per ownership structure that they have. Business entities with the form of limited liability are more efficient in risk managing than sole proprietorships and partnerships. Limited liability is an attractive aspect of the corporate form of an entity (Manne, 1967). Ownership is more concentrated when small number of shareholders own the majority of shares of an entity while ownership is dispersed when small number of shares are distributed among large number of shareholders. Demsetz, (1983) found that ownership structure is affected by decisions made by the shareholders. According to the theory, there is a negative relationship between agency cost and ownership share of the primary owner. Primary owners' incentives to consume perquisites decrease when increase of his ownership share as a result of increment of share of profit. When primary owner appoints an external manger, primary owner has to monitor that external manger so as to reduce the agency cost. Thus, primary owner plays the monitoring role similar to the block holders in larger public corporations.

Institutional Ownership:

In practice most institutional shareholders are profit oriented and they concern more about their investments. So institutional shareholders properly supervise and monitor firm. So firms with higher level of institutional shareholders generally have lower level of agency cost that firms with lower level of institutional shareholders. But literature relating to this relationship appears for both dimensions. Wu and Cui, (2002) found a positive relationship between institutional ownership and performance of the firm. Opposite to that findings, Bhattacharya and Graham, (2007) found that inverse relationship between institutional ownership and performance of the firm. Tsai and Gu, (2007) found that there is no relationship between institutional ownership and risk in the context of United States. Cash Flow measure is positively affected by the institutional ownership (Rashid,2015).

Management Ownership:

Agency problem emphasizes the conflict of interest between owners and managers due to the separation of ownership and control. Jensen and Meckling,(1976) viewed that an increase in management shareholding result in to reduce the agency problem. Gao and Song, (2008) found that there is a positive relationship between managerial ownership and firm performance in Chinese firms. Tsai et al.,(2009) found that managers always try to protect their wealth and increase their profit portion while monitoring firm's performance so as to decrease the default risk. Ahmed,(2009) found that higher level of managerial ownership reduces the agency conflict.

Family Ownership:

Single family controls, especially more than fifty percent of firm's equity necessarily reduce the agency cost (Ghoul et al.,2007). Controlling family fulfils the monitoring role similar to the block holders in corporate entity. But monitoring of family ownerships with high diffusion of ownership shares are less effective comparing to the sole owner monitoring.

Ownership Concentration:

Ownership concentration monitor and supervise managers' behaviour and performance in order to reduce the agency cost (Florackis,2008;Zeckhauser and Pound,1990; Shleifer and Vishny,1997). Opposite to this findings Hastori et al.,(2015) found that ownership concentration does not affect to agency cost of the firm.

Empirical Findings on Ownership Structure and Risk Management

When examining the literature, most researchers investigated the relationship between ownership structure and agency cost. If agency cost arises in business entity, obviously it will be a risk for the company. So the need of risk management arises when agency cost exists.

Ang et al.,(2002) investigated the measures of agency cost for corporations under different ownership structures by using a sample of 1708 small corporations. Findings revealed that agency cost is significantly higher when an outsider rather than an insider manages the firm and there is a negative relationship between mangers' ownership and agency cost,

Mustapha and Ahmad,(2011) found that managerial ownership has a negative relationship with total monitoring cost as mentioned in agency cost. This study used both primary and secondary data. The sample was 235 companies listed on Bursa Malaysia for the financial year 2006. Multiple regression was used as data analysis technique. This study provides a unique contribution to corporate governance by analysing the effect of ownership structure in relation to agency theory in Malaysian companies. Most previous empirical studies were conducted in the context of western countries and it was unknown that those findings have equal impact in Asian organizations. So the findings of this study can be generalized for Asian entities.

Berkman and Bradbury,(1998) investigated the influence of ownership structure on risk management by using a sample of all firms listed on the New Zealand Stock Exchange in 1994 and all State Owned Enterprises in New Zealand. This sample excludes firms in the financial services sector and foreign firms. The sample consists of 116 listed firms and 33 State Owned Enterprises. The findings of this study proved that government owned organizations have a lower need for risk management, compared to publicly listed firms. The reason was stakeholders are likely to rely on implicit guarantees arising from government ownership. In this study they have mentioned that government owned organizations make less use of financial derivatives to reduce the costs of financial distress and agency conflicts.

Chen et al.,(1998) examined the relationship between risk and ownership structure among depository institutions. The initial sample of this study was formed based on the Standard Industrial Classification (SIC) manual. For data analysis they used daily returns of commercial banks, savings institutions and bank holding companies from the Center for Research in Security Prices (CRSP) return files for the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and the over-the-counter (OTC) market for 1988 to 1993. This process results in a final sample of 1,812 observations, or 302 firms per year. The sample includes 1,566 observations for banks and 246 observations for savings institutions. The findings of this study revealed that there is a negative and significant relationship between managerial ownership and depository institution risk.

Chiang et al., (2015) studied the relationship between ownership structure, board characteristics and default risk in the context of Taiwan. Sample of this study was 438 companies listed in Taiwan Stock Exchange. Data was collected from year 1998 to 2009. Firms in the financial services

industries are omitted when selecting the sample. Researchers have adopted KMV model to estimate the default risk of firms. This model calculates the expected default frequency (EDF) based on a firm's capital structure, the volatility of its asset returns and the firm's current asset value. The findings of this study revealed that default risk has a negative relationship with institutional ownership and management share ownership. Furthermore it was found that a high level of shares held by internal shareholders is positively related to default risk.

Ownership structure and risk taking behaviour was examined by Chun et al.,(2011). This study examined the effects of managerial ownership on the risk-taking behavior of Korean and Japanese banks from 1990 to 2000. The results showed that managerial ownership does not affect either the risk or the profit levels of Korean banks. But it was found that there is positive relationship between managerial ownership and total risk of Japanese banks. The coefficients of the interaction term between franchise value and managerial ownership are negative and statistically significant for both the Korean and the Japanese banking industries. This means that an increase in managerial ownership in banks with high franchise values discourages risk-taking behavior. The results confirm the disciplinary role of franchise value on the risk-taking behavior of banks.

Cole et al.,(2011) investigated the implications for risk taking behaviour due to the separation of ownership and management. Data was collected from year 1996 to 2004. As the findings, it was clear that the ownership structures have a significant impact on firms' risk-taking behavior.

Thomsen and Pedersen,(2000) examined the association between ownership structure and economic performance by using 435 of the largest European companies. Basically researchers have used a data base containing information on ownership structures of the 100 largest nonfinancial companies in 1990 in each of 12 European nations: Austria, Belgium, Denmark, Finland, France, Germany, the United Kingdom, Italy, the Netherlands, Norway, Spain and Sweden. They linked this data base to performance measures for a subsample of 435 companies. Controlling for industry, capital structure and nation effects they found a positive effect of ownership concentration on shareholder value (market-to-book value of equity) and profitability (asset returns), but the effect levels off for high ownership shares. Furthermore it described that the identity of large owners family, bank, institutional investor, government, and other companies has important implications for corporate strategy and performance.

METHODOLOGY

All companies which are listed in Colombo Stock Exchange were the population for this research study. This study eliminates Banks, Finance and Insurance companies since the risk management of these companies are different from non-financial firms. For this study, 30 companies based on the highest market capitalization were selected as the sample. Stratified sampling method was employed in this study. Data was collected from the year 2012 to year 2017 using annual reports of selected companies.

Conceptual Framework

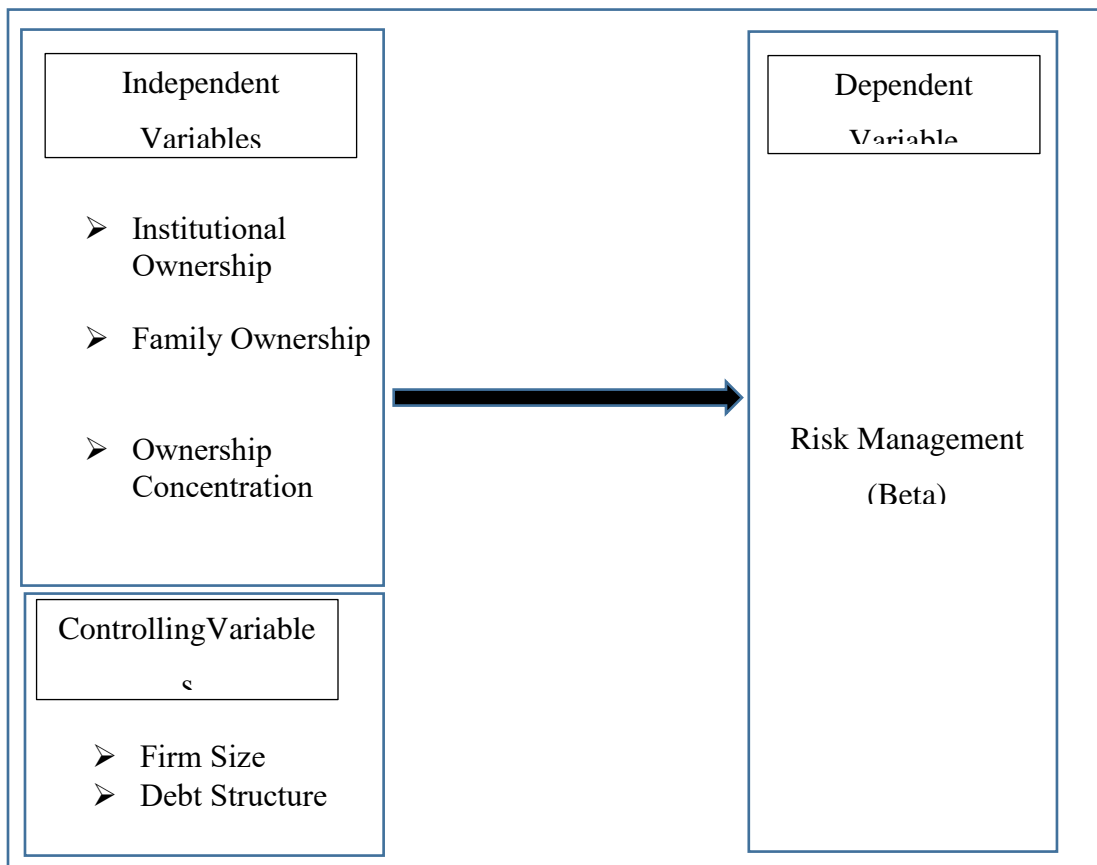


Figure 1 : Conceptual Framework Source : Author Constructed

Variables

Three types of variables such as dependent, independent and control have been used for this study. Dependent variables was risk management. As independent variables, institutional ownership,

family ownership and ownership concentration were used. Control variables were firm size and financial leverage.

Risk Management:

In this study risk management in the sense the need of risk management for the company. This variable was measured by using beta. Beta is a measure of volatility of security or a portfolio in comparison to the market as a whole. In this study an increase of beta means the need of risk management for the entity. Beta was measured by using daily share price changes of each company listed in CSE in relation to a benchmark equity index; All Share Price Index.

Institutional Ownership:

The percentage of institutional ownership was considered. Institutional shareholders always concern about the performance of the company. So they monitor and supervise firm.

Family Ownership:

Percentage of ownership of family members was considered. Single family controls, especially more than fifty percent of firm's equity necessarily reduce the agency cost (Ghoul et al., 2007). Controlling family fulfils the monitoring role similar to the block holders in corporate entity.

Ownership Concentration:

Ownership concentration is the diffusion of shares between investors of different companies. Ownership will be more concentrated when the number of shareholders is less. (Mcknight and Weir, 2009).

Firm Size:

This was measured by using the logarithm of total assets of company.

Financial Leverage:

The ratio of total debt to total equity is measured.

Research Hypotheses

Hypothesis 1: There is a significant impact of institutional ownership on risk management.

Hypothesis 2: There is a significant impact of family ownership on risk management.

Hypothesis 3: There is a significant impact of ownership concentration on risk management.

Research Models

$$RM_{it} = \alpha + \beta_1 INSOWN + \beta_2 FMOWN + \beta_3 OWNCON + \beta_4 FSZE + \beta_5 LEV$$

Where,

RM_{it} = Need of Risk Management in Year t for Firm i

$INSOWN$ = Institutional ownership

$FMOWN$ = Family Ownership

$OWNCON$ = Ownership Concentration

$FSZE$ = Firm Size

LEV = Leverage

DATA ANALYSIS

Regression analysis

The Pooled OLS regression model neglects the cross sections and time series nature of data. Therefore, this study rejects the pooled OLS regression model and pay attention toward other two models. The fixed effect model allows for heterogeneity or individuality among thirty companies by allowing to have its own intercept value. The term fixed effect is due to the fact that although the intercept may differ across companies, but intercept does not vary over time, that is it is time invariant. Random effect model suggest all thirty companies have a common mean value for the intercept. So hypotheses can be built as follows.

H_0 : Random effect model is more appropriate

H_1 : Fixed effect model is more appropriate

Hausman test was employed to test the hypotheses. The table 1 provides the details of Hausman test.

Table 1 :Hausman Test of Cross Section Random Effect

Test Summary	Chi-Sq statistic	Chi-Sq d.f.	Prob.
Cross-section random	2.524668	5	0.7728

Since P value is 0.7728 and it is more than 0.05, null hypotheses should be accepted while rejecting alternative hypothesis. So RandomEffect model is more appropriate for testing data.

Table2:Regression Analysis; Random Effect Model

Variable	Coefficient	Std.Error	Prob.
C	0.0182	0.0276	0.5265
Institutional ownership	-0.0654	0.0354	0.0498
Family Ownership	-0.0107	0.0082	0.0122
Ownership Concentration	-0.1419	0.0162	0.0029
Firm Size	0.0099	0.0043	0.0242
Leverage	0.0004	0.0004	0.3145
R- squared	0.4864	F-statistic	6.5523
Adj. R-squared	0.3396	Prob.(F-statistic)	0.0001
Durbin- Watson Stat	2.4417		

This model shows the interaction between beta and ownership structure. The R Squared in the regression model indicates that 48.64% of the variation in beta is explained by the variables in the model. So the fitness of the model is only 48.64%. The F-statistics (prob > chi 2) prove the

efficiency of the estimated models at 1% level of significance and the value was 0.0001. Durbin-Watson statistic of 2.44 ensure the unavailability of auto-correlation problem of this model.

According to the table 2, Institutional ownership, Family Ownership and Ownership Concentration have significant impact on beta since these three variables have p values less than 0.05. Institutional ownership variable has a negative coefficient of 0.0654, which means increase of one unit of institutional ownership result in to decrease the beta in 0.0654 units. That means, the increase of institutional ownership affects to decrease the need of risk management of the entity. Family ownership has a negative coefficient of 0.0107, which means increase of one unit of family ownership result in to decrease the beta in 0.0107 units. That means, the increase of family ownership affects to decrease the need of risk management of the entity. Ownership Concentration has a negative coefficient of 0.1419, which means increase of one unit of Ownership Concentration result in to decrease the beta in 0.1419 units. That means, the increase of Ownership concentration affects to decrease the need of risk management of the entity.

Summary of Hypotheses Testing

Table 3 : Hypotheses Tests Results

Hypothesis No	Hypothesis	Accept/Reject
Hypothesis1	There is a significant impact of institutional ownership on risk management.	Accepted
Hypothesis2	There is a significant impact of family ownership on risk management.	Accepted
Hypothesis3	There is a significant impact of ownership concentration on risk management.	Accepted

CONCLUSION

As per the findings of this study it was revealed that ownership structure significantly affects to determine the risk of an entity. Results depict that beta value is significantly affected by ownership structure variables. The necessity of risk management is occurred due to the form of ownership structure. Negative coefficient of institutional ownership implies that there is an inverse relationship between institutional ownership and beta of an entity. That means higher the

institutional ownership lower the necessity of risk management (Wu and Cui,2002; Rashid,2015). Generally institutional shareholders more likely to supervise and monitor the investing firm and this affects to reduce the agency problem due to close supervision. So firms with lower level of institutional shareholders may exposure to risk due to the availability of agency problem. That kind of firms should aware about such situations and implement necessary procedures so as to mitigate the risk. Negative coefficient of family ownership implies that there is an inverse relationship between family ownership and risk of an entity. That means higher the family ownership lower the necessity of risk management. Family ownership result in to reduce the agency cost since family ownership closely monitor and supervise the firms.Negative coefficient of ownership concentration implies that there is aninverse relationship between ownership concentration and risk of an entity. That means higher the ownership concentration lower the necessity of risk management.A higher level of ownership concentration or more block holders suggest a stronger monitoring power from investors over a firm's managerial decisions because of the incentives from these owners to proactively safeguard their investment.Owners with significant amount of shares always tend to take aggressive actions, either directly or indirectly, over firm decisions such as the election of board members and replacement of CEO or poor management with their voting power. So large block holders with higher level of ownership concentration have more incentives to monitor the invested firm and it will result in to reduce the agency problems. Ultimately it affects to reduce the risk. Thus, firms with higher level of ownership concentration need lower level of risk management. By considering the findings of current research and empirical findings it is clear that different ownership structures have different types of consequences towards the entity. So firms should try to articulate their ownership structure so as to minimize the risk level and enhance the performance. Sometimes mix of this various ownership structures may have superior consequences than continuing single ownership structure.

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Sustainability Reporting and Its Impact on Financial Performance: A Study of the Sri Lankan Financial Sector

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Abstract

Purpose: Sustainability reporting is a voluntary endeavor which involves publishing accounts that reflect the economic, environment and social performance of an organization (Isenmann and Kim, 2006). The absence of a compulsory set of sustainability reporting rules and standards have caused variances in reporting practices among the companies which consequently it has influenced on business value creation process differently. Therefore the purpose of this study is to identify whether there is a significant difference in sustainable disclosures among the financial institutes and how sustainability reporting influence on institutional performance.

Methodology: The disclosure index derived from the Global Reporting Initiative (GRI) guidelines which consist of 119 parameters is used to evaluate the content of the reports of listed banks and financial sector companies. An analysis results in a comparison between GRI guidelines and Generation four (G4) framework. Furthermore, the study investigated the causal relationship between the level of disclosures and financial performance. Data is obtained from annual reports compiled with the Security Exchange Commission (SEC), and companies' websites analyses using SPSS 16 data analysis package.

Analysis and Discussion: The results conclude that there's no significant difference in sustainability disclosures between listed banks and financial institutes and the amount of the disclosures have no significant influence on institutes' financial performance. Furthermore, the study confirmed that there's no significant difference between G4 framework disclosures (Adopted in 2016/2017 reporting period) and GRI guidelines (Adopted in 2017/2018 reporting period).

Research limitations/ implications: The sustainability theories and framework may provide a sensible explanation for sustainability reporting practices in Sri Lanka

Originality/value: The businesses including financial institutes consume scarce resources. But poor attention has been paid in reporting their accountability towards the sustenance. Therefore it is in need of recognizing sustainable responsibility.

Keywords:Corporate Disclosures; Financial Institutions; Sustainability/Integrated Reporting; Financial Performance

1.0 INTRODUCTION

Sustainability, as a contemporary topic associated with the conservation of scarce resources, while upgrading the standard of living of the current generation, has raised a significant global concern (James, 2014). In the modern business era, it has become the rule of thumb in gaining a competitive

advantage since it safeguards the business capacity in the value creation process. The integration of three dimensions; economic, environmental, and social uplift the business' efficiency, effectiveness and transparency and lead businesses towards long-term success (Michael and Gross, 2004). So, integrated reporting which communicates combination and the role of each pillar in confirming the sustenance of the business processes are being endorsed across the globe (Albetairi, et al., 2018).

The Global Sustainability Standards Board features a modular, robust structure, and exemplifies the best practice for global reporting on a range of interrelated economic, environmental and social effects. GRI 101 (2016) defines meeting with the sustainability reporting standards (GRI Standards) inspires firm accountability, manage risk, seize new opportunities and protect the environment, improve the society while thriving economy by improving governance, reputation, stakeholder relations, and building trust.

UsenkoandZenkina (2010) highlight the inability of financial performance measures in ascertaining the company's impact on the economy, environment, and society. Simply, the financial regulatory framework ignores the positive-negative environmental and societal externalities. It stimulates research on environmental, social, and sustainability reporting frameworks applicable to the financial sector. Importantly, by nature, the financial sector does not directly cause a negative impact on the environment and society as its involving in-service function (Nwobu, et al., 2017). However, the implication of banking operations with a diversified customer pool create demand for transparent disclosures for a broad range of stakeholders.

1.1 Objective

The objective of this study is to examine the sustainability report content which integrates aforementioned three pillars and sustainability practices of Colombo stock exchange listed banks and finance companies, and to measure the association of level of disclosures with the firm performance i.e. Return on Assets (ROA) and Return on Equity (ROE) of banking and finance companies. Secondly, it overlooks the trends of integrated reporting comparing 2017 with 2016 level of disclosures in the banking sector.

1.2 Theoretical Framework

1.2.1 Legitimacy Theory

Legitimacy is defined by Lindblom (1994) as the condition where the company's value system is compatible with the societal value system. This theory emphasizes the importance of meeting social expectations and standards to safeguard the long-term position. Align with the theory Faisal, et al., (2012) argues that sustainability reporting strengthen the firm's operative license in the society while reducing the risk. This explains the two-way relationships where the company stick to the social boundaries which are perceived as legitimate to gain the continual support from the society. (Khan, et al., 2013). However, the company has the discretion to operate within its institutionalized policies and constraints, but the failure to confirm the societal value of self-practices may threaten the firms' survival(Oliver, 1991). Lindblom (1994) further claims as if there's a disparity between the company's actual value and the expected value the company's legitimacy may jeopardizeresulting a legitimacy gap. Therefore, the communication of the true value to the society by adopting a globally accepted disclosure strategy is vital

1.2.2 Agency Theory

The theory explains principal-agent relationships between internal, connected and external stakeholders. Agency conflict which arises due to information asymmetry destructs the smoothness of the relationship. An adequate level of sustainable disclosures bridges the gap between insiders and the outsiders (Shamil , et al., 2014; Dhaliwal, et al., 2011).

1.2.3 Stakeholder Theory

Freeman (1984) stipulates the stakeholder theory which endorses firms accountability towards a range of stakeholders, i.e. suppliers, employees, community, environment etc. Harmoni(2013) explains that integrated reporting reinforces the firm's relationship with the society it operates.

2.0 LITERATURE REVIEW

The scope of literature covers the existing surveys on the level of sustainability disclosures and the association between sustainability disclosures and firm's performance because firm's environmental and societal concerns over the financial concerns have been extensively debated in the literature.

Abeywardana and Panditharathna (2016) pinpoint that there's no consensus between the firms about the level of voluntary disclosures including economic/ social performance. An empirical study conducted in Malaysia analyzing sustainable disclosures of 15 commercial banks reveals that social disclosures dominate the sustainability reporting framework (Harun, et al., 2013). The findings further explain banks tempt to disclose more on labour conditions and decent work. Yang and Yaacob (2012) describe that external pressure has promoted the level of social disclosures. Additionally, a survey conducted in the Mauritian banking industry using five disclosure index indicates human resource as the most favorite theme since the human resource is the most important asset in the service industry (Ramdhony, 2015)

Moreover, the study of 12 commercial banks listed on the Dhaka stock exchange concludes that societal information is most extensively addressed with respect to the extent of financial reporting (Khan, et al., 2010). The scholars classify GRI requirements into 5 components as environmental, labour practices and decent work, product responsibility, human rights, and the society. However, society disclosures lead with a percentage of 100% compared to 91.6% of labour practices and decent work disclosures.

In contrast, a survey conducted taking a sample of 26 listed private banks in Dhaka Stock Exchange divulges, outstandingly, energy reduction, and greenhouse gas emission disclosures report the status of 94.9% and 92.3% respectively (Akter, et al., 2017). The investigation of environmental disclosure trends via content analysis of annual reports published by 17 Ghana Stock Exchange Listed firms expose that the level of disclosures are very low and it is strongly associated with the environmental sensitivity ($p= 0.032$) (Welbeck, et al., 2017).

H1_a: There's a significant difference in the level of sustainable disclosures between banks and financial institutions.

Empirical study performs covering thirty banks enlisted in Bangladesh Chittagong Stock Exchange (CSE) and Dhaka Stock Exchange (DSE) has presented a year on year (2011-2015) analysis which emphasizes the yearly differences in sustainability reporting practices. Disclosure levels vary as; 0%, 3.33%, 6.67%, 6.67% and 10% from year 2011 to 2015 (Mahmud, et al., 2019). Sobhan, et al. (2011) perform trend analysis in two banks over ten years in Bangladesh presents a significant increase in the level of disclosures over the period of 2000 to 2009. Moreover, content analysis conduct in a sample which comprised of 20 Malaysian financial institutes over the period of 2008-2011 reveal an improvement of information disclosures with the passage of time (Darus, et al., 2015).

H2a: There's a significant difference between sustainable disclosures across the years.

Daub (2017) asserts that the quality of sustainable reporting depends on both qualitative and quantitative information, and on the level to which company succeeded economically along with the social and environmental efficiency and effectiveness. Therefore, a substantial amount of researches have been conducted recently to determine the relationship between sustainability reporting and the firm's performance.

The enormous studies provide evidence for a significant positive relationship between sustainability reporting and firm performance. According to Baumunk (2009), the primary advantage of sustainable disclosures is boosting demand for the firm's products and services. Consequently, the increase in demand increases the firm's return. Furthermore, Preston and O'bannon, (1997) explain social responsibility disclosures create higher value for stakeholder and craft internal capabilities while minimizing cost which leads the firm towards better financial results.

A study performs in Jordanian Islamic banks obtaining data from 2008-2014 ascertains the statistically significant relationship between the dimensions of sustainability with financial measures such as; ROA and ROE (Zyadat, 2017). A field survey conduct in 60 Nigerian manufacturing companies listed in Nigerian Stock Exchange and registered in Corporate Affairs Commission, administering questionnaire with financial statement analysis identifies a significant difference between environmental responsible firms and irresponsible firm's performance (Ngwakwe, 2010). So, it establishes a positive relationship between sustainability driven business

practices and ROA. Similarly, A panel data regressions analysis perform by Yılmaz (2013) in Turkey banking industry finds a significant financial result with some social indicator disclosures. Jones (2005) develops an index score based on GRI to determine the relationship between sustainability disclosures and financial performance which is measured by financial ratios and market adjusted returns study results mixed positive outcomes with different measures.

A study design in Greece identifies that the banks which adhere to GRI guidelines and who include in sustainability indices outperform in the market due to their environmental and social performance and these guidelines have created demand for sustainability reporting in terms of environmental and social performance (Skouloudis, et al., 2011).

All the studies that have been performed in relation to the impact of sustainable disclosure on financial performance do not produce consistent results. There is contrary evidence which shows no or negative relationship between variables. Aupperle, et al. (1985) relationship analysis between sustainability disclosures and profitability on companies enlisted in Forbes figure out no relationship between variables. Pearson correlation analysis and chi-square test fail to establish a relationship between the amount of social, environmental disclosures and financial performance ($p > 0.05$) in the study conduct by Murray, et al. (2006) using data of UK top 10 companies over 10 years period (1988-1997). Lopez, et al., (2007) divides 110 firms quoted in the Dow Jones Sustainability Index into two group to determine the impact of sustainability on the performance. The study derives negative results concluding that there is a negative impact on the performance. Similarly, Buys, et al. (2011) take data from McGregor BFA database from 2002-2009 to investigate the economic performance of sustainability reporting. T-test analysis performed to conclude that there's no relationship between sustainability reporting and performance.

H3_a: Level of sustainable disclosures (economic/ environmental and social disclosures) havean association with the bank's financial performance.

2.1 Sri Lankan context

Wijesinghe (2012) conducts a study in 75 companies which represent 14 industries to identify the current social responsibility reporting framework. As a result, GRI guidelines are used and the study shows a low level of disclosures in sustainability components including; governance, economy, environment, and society in Sri Lankan companies

Annual reports, sustainability reports and website content analysis of sixty public listed companies in Sri Lanka to examine the relationship between sustainability reporting /sustainability key performance indicator (KPI) reporting and company-specific characteristics namely; company size, company age and financial performance and the study affirm that company size as the most significant factor that effect on sustainability KPIs (Dissanayake, et al., 2016). In contrast to Wijesinghe (2012) large-scale corporations disclose the high level of disclosures to exploit performance benefits.

The in-depth interviews conducted with eighteen top managers of subsidiaries by Beddewela&Herzig (2013) seek out the reasons for the low level of social responsibility disclosures in the Sri Lankan context. Institutionalized processes along with the internal legitimacy distract the companies from social reporting.

However, the literature is lacking specific focus on Sri Lankan finance sector. Therefore the study fills the gap contributing to the literature by performing content analysis and considering the potential relationship between sustainability disclosures and the economic performance of listed banks and financial institutes in Sri Lanka as a developing economy in the Sri Lankan Content.

3.0 RESEARCH METHODOLOGY

3.1 Sampling and Data Collection

The central bank of Sri Lanka provides a list of registered banks and financial institutes. The list is comprised of 26 local banks and 43 financial companies. However, out of this 69 companies, 2 are state-owned and only 11 banks and 28 finance companies are listed in the Colombo Stock Exchange, All Share Price Index. The study sample consists of 2 state-owned banks, 10 private banks, and 20 finance companies which are selected based on the accessibility to the financial statements with sustainability reports. Hence, the data employed in this study are sourced from the annual reports and sustainability reports of selected banks and financial companies. Furthermore, the study considers annual reports and sustainability reports issued by the banks over two years 2016-2017 since the companies have been moved from G4 framework (2016-2017 reporting period) to GRI framework (2017-2018 reporting period)

3.2 Key Variables

Author has defined the variables considering the Sri Lankan context and they are listed below;

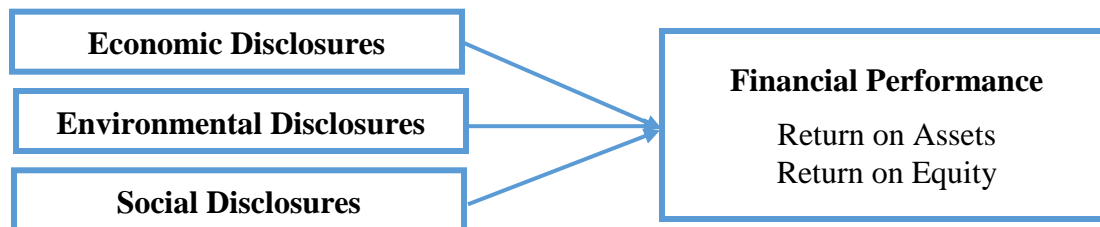


Figure 1: Conceptual Framework

3.2.1 Sustainability Reporting Index

SR index score is derived from the consolidated set of GRI Sustainability Reporting Standards which is effective from 2018. Accordingly, 56 general standards, 13 economic standards, 23 environment standards, and 27 social standards are used. The total compilation of each component convert to 100% scale using the following formula;

$$\text{Score } (s) = \frac{\text{Amount of compilation } (n)}{\text{Number of standards considered}} \times 100\%$$

However, the new set of standards is only applied in the sustainability reports published for 2017/2018 reporting period. Therefore, the alternative index is developed only for the banks based on previous reporting guidelines (G4 guidelines) to perform a comparative analysis between years 2017/2018 reporting period with 2016/2017 reporting period. (General 59 standards: $s = \frac{n}{59} \times 100\%$, Economic 13 standards: $s = \frac{n}{13} \times 100\%$, Environment 26 standards : $s = \frac{n}{26} \times 100\%$, Social 30 standards: $s = \frac{n}{30} \times 100\%$).

3.2.2 Return on Assets (ROA)

ROA indicates the profitability of the firm relative to the total assets employed in the firm (Kabajeh, et al., 2012). It is widely used as a comparative measure because it substantially depends on the industry considered. It assesses how effective a firm is in converting the amount invested in the assets through equity or debt financing into net income (Saragih, 2018). Consistent with the prior research (Garg, 2015; Griffin and Mahon, 1997; Zyada, 2017; Alshehhi, et al., 2018) ROA computes as;

$$ROA = \frac{\text{net income} + \text{interest expense (PBT)}}{\text{Average total assets}}$$

3.2.3 Return on Equity (ROE)

ROE as a profitability ratio measures the amount of profits returned as a percentage of shareholders' investments (Kabajeh, et al., 2012). It reveals the company's profit generation ability with the shareholder equity. ROE is a useful ratio in comparing company net income with the others in the industry. It illustrates the efficiency and effectiveness of the company turning money into gains for the investors (Saragih, 2018). Consistent with the prior research (Zyada, 2017; Alshehhi, et al., 2018) ROE computes as;

$$ROE = \frac{\text{Net Income adjusted for tax}}{\text{Shareholder equity}}$$

3.3 Data Analysis

Descriptive statistical analysis, independent sampling test, paired sampling t-test, correlation and regression analysis are performed to analyze the data collected on the aforementioned variables in order to conduct the analysis. Moreover, the Statistical Package for Social Sciences Version 16 (SPSS 16) is used to analyze the data.

4.0 FINDINGS AND ANALYSIS

The banks and finance companies degree of adherence to the global reporting initiatives in 2017 is depicted in table 1.²

Table 1: Application of GRI Guidelines (Reporting Period 2017-2018)

2017 - GRI Initiatives								
	General - 56 standards		Economic - 13 Standards		Environment - 23 Standards		Social -27 standards	
	Compliance	Score	Compliance	Score	Compliance	Score	Compliance	Score
Banks								
Commercial Bank	42	75%	7	54%	4	17%	21	78%
Peoples Bank	38	68%	8	62%	4	17%	21	78%
PABC	31	55%	2	15%	0	0%	11	41%
Amana	28	50%	1	8%	0	0%	7	26%

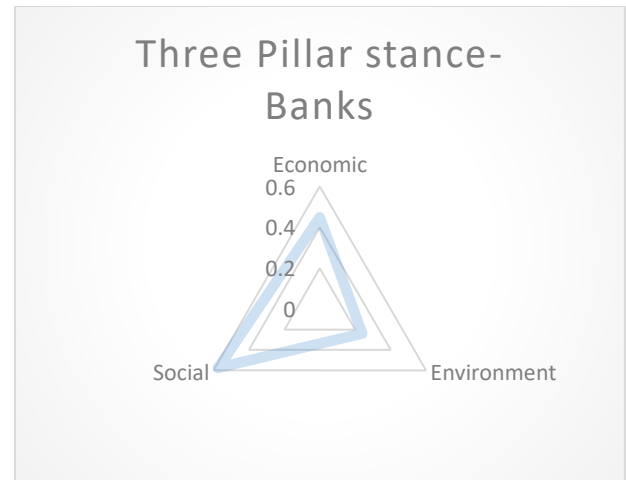
² The author has considered 56 general disclosures, 13 economic disclosures, 23 environmental disclosures and 27 social disclosures presented in the GRI guidelines. The number of standards satisfied by each institute is presented under the compliance column and score is awarded based on the degree of compliance using the SR index presented in the pg.08

Sampath Bank	56	100%	11	85%	17	74%	21	78%
DFCC	33	59%	3	23%	0	0%	6	22%
HNB	52	93%	6	46%	3	13%	8	30%
MBSL	32	57%	6	46%	5	22%	12	44%
NSB	44	79%	9	69%	1	4%	22	81%
NTB	45	80%	2	15%	9	39%	11	41%
Seylan Bank	45	80%	9	69%	22	96%	27	100%
BOC	44	79%	6	46%	1	4%	19	70%
Finance Companies								
AMW	32	57%	4	31%	1	4%	9	33%
Arpico Finance	42	75%	6	46%	8	35%	14	52%
Asia Asset	31	55%	0	0%	1	4%	8	30%
Asian Alliance	38	68%	2	15%	6	26%	14	52%
Associated Motors	34	61%	0	0%	1	4%	9	33%
Bimputh	32	57%	4	31%	1	4%	9	33%
CDB	40	71%	10	77%	9	39%	20	74%
Commercial Credit	40	71%	10	77%	1	4%	18	67%
LB Finance	56	100%	8	62%	12	52%	12	44%
LOLC	40	71%	10	77%	1	4%	18	67%
Peoples Leasing	52	93%	13	100%	23	100%	24	89%

Vallible Finance	31	55%	0	0%	1	4%	8	30%
Central Finance	32	57%	4	31%	1	4%	9	33%
BRAC Lanka Finance	32	57%	4	31%	1	4%	9	33%
Colombo Trust	32	57%	4	31%	1	4%	9	33%
Commercial Leasing	31	55%	0	0%	1	4%	8	30%
Orient Finance	32	57%	4	31%	1	4%	9	33%
Softlogic Finance	31	55%	0	0%	1	4%	8	30%
The Finance	32	57%	4	31%	1	4%	9	33%
Mercantile Investments and Finance PLC	52	93%	13	100%	24	100%	24	89%

The study presents that banks mostly report social indicators including; terms and conditions of employment, manager-employee relations, occupational health and safety, training and education, diversity, equal opportunities, non-discrimination and compliance with the labour laws, which are associated with the employee well-being. Moreover, social disclosures cover interactions with local communities, ethical marketing, and labeling practices, supplier assessment, and customer privacy.

Figure 2: Economic, Environmental and Social Performance of Banks

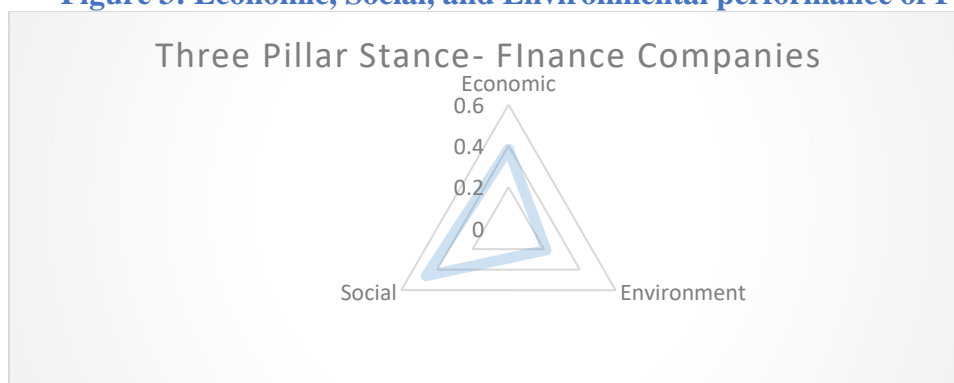


The economic disclosure stands behind the social disclosures. Even though banks disclose their direct economic impact and economic value it has failed to disclose the market presence, indirect economic impact, procurement practices, and anti-corruption policies.

Banks reporting on environmental disclosures are very poor. Banks are reluctant to disclose information on energy consumption, gas emission, effluents of waste, and supplier environmental assessment.

The study presents a similar trend in the financial companies, it discloses more on social performance but less on environmental performance.

Figure 3: Economic, Social, and Environmental performance of Finance Companies



³ The aggregate of compliance of economic, social and environmental disclosures by banks and finance companies are considered separately to construct the figure 2 and 3 graphs

Table 2: Application of G4 Guidelines (Reporting Period 2016-2017)

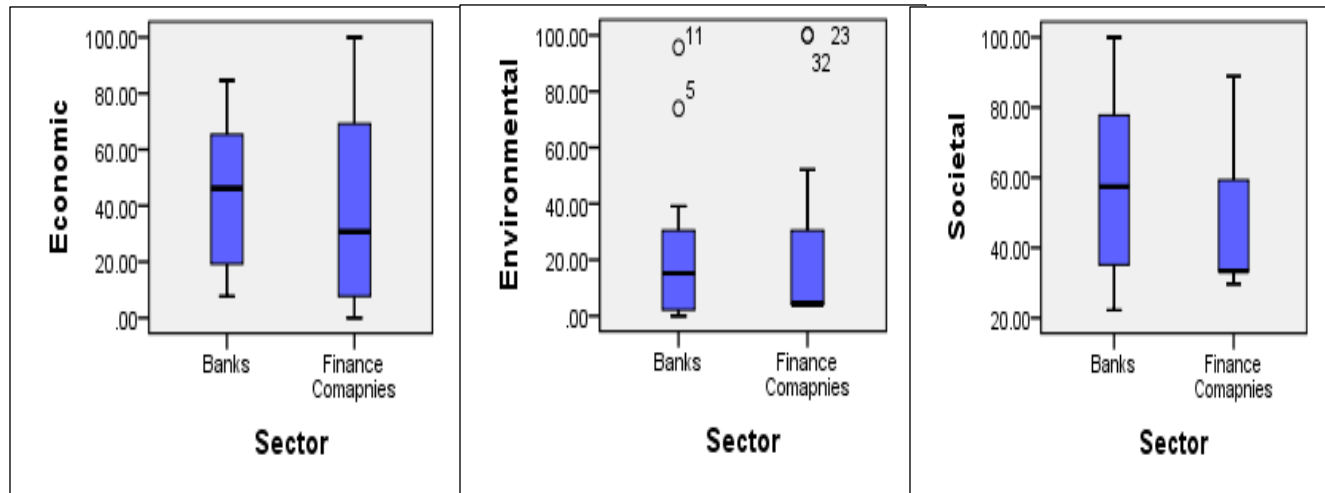
2016- G4 Standard system								
	General - 59 standards		Economic - 13 standards		Environment - 26 standards		Social -30 standards	
	Compliance	Score	Compliance	Score	Compliance	Score	Compliance	Score
Commercial Bank	49	0.875	7	0.5384615	3	0.115384615	18	0.6
Peoples Bank	45	0.8035714	8	0.6153846	2	0.076923077	19	0.633333
PABC	39	0.6964286	3	0.2307692	1	0.038461538	11	0.366667
Amana	30	0.5357143	3	0.2307692	1	0.038461538	6	0.2
Sampath Bank	57	1.0178571	13	1	26	1	30	1
DFCC	30	0.5357143	3	0.2307692	1	0.038461538	8	0.266667
HNB	31	0.5535714	5	0.3846154	7	0.269230769	9	0.3
MBSL	57	1.0178571	9	0.6923077	26	1	27	0.9
NSB	52	0.9285714	9	0.6923077	2	0.076923077	19	0.633333
NTB	49	0.875	2	0.1538462	10	0.384615385	13	0.433333
Seylan Bank	48	0.8571429	13	1	26	1	30	1
BOC	33	0.5892857	3	0.2307692	2	0.076923077	20	0.666667

As aforementioned consolidated integrated reporting standards are introduced in the year 2016 and it's effective from 2018. Therefore in the 2016-2017 reporting period companies applied G4 guidelines. Banks compliance with the G4 guidelines is presented above. The level of disclosures follows the similar pattern as 2017. Mostly bank discloses their social performance. Then economic performance and enviromental disclosures stand at the last.

Table 3: Descriptive Statistical Analysis of level of disclosures between banks and finance companies

Group Statistics					
	Sector	N	Mean	Std. Deviation	Std. Error Mean
Economic	Banks	12	44.8708	24.72908	7.13867
	Finance Companies	20	38.461	33.20287	7.42439
Environmental	Banks	12	23.9125	30.99327	8.94699
	Finance Companies	20	20.6535	30.67382	6.85887
Societal	Banks	12	57.4075	26.16573	7.5534
	Finance Companies	20	45.9245	20.19436	4.5156

Social disclosures of the banks reported the highest mean score of 57.41 ($\sigma = 26.17$). Similarly, finance companies also reported the highest mean score with the social disclosures ($\mu=45.92$, $\sigma = 20.19$). The mean scores of all three pillars indicate no significant difference between banks and Finance Companies.

**Figure 4: Presentation of reporting practices differences in the box plot**

The box plot graphs endorse the descriptive statistical results. However, 2 banks and 2 finance companies (Sampath Bank, Seylan Bank, Peoples Leasing Finance Company and Mercantile Investment) present as outliers due to their level of environmental disclosures compared to others in the sector.

Independent Sample T-Test is performed to determine whether there is a statistically significant difference between banks and finance companies.

Table 4: Independent sample test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Economic	Equal variances assumed	1.390	.248	.578	30	.568	6.40983	11.09013	-16.23924	29.05890
	Equal variances not assumed			.622	28.417	.539	6.40983	10.29962	-14.67403	27.49369
Environmental	Equal variances assumed	.000	1.000	.290	30	.774	3.25900	11.24341	-19.70310	26.22110
	Equal variances not assumed			.289	23.108	.775	3.25900	11.27354	-20.05607	26.57407
Societal	Equal variances assumed	3.305	.079	1.393	30	.174	11.48300	8.24069	-5.34674	28.31274
	Equal variances not assumed			1.305	18.872	.208	11.48300	8.80025	-6.94459	29.91059

Levene's Test with a p-value of 0.248 for economic disclosures indicates that variances are equal across the two groups (Banks and Finance Companies). The $t = 0.578$ with a p-value of 0.568 ($p > 0.05$) deduce that there is no statistically significant difference in economic disclosures between banks and finance companies. Test results are similar to environmental and social disclosures. Levene's Test p values of 1.000 and 0.079 confirm the assumption of equal variances are assumed. Then, the respective t values 0.029 and 1.393 with p-values of 0.074 and 0.174 concludes that there's no statistically significant difference in the amount of environmental and social disclosures between banks and finance companies. Each variable 95% Confidence Interval for mean values contain zeros; Economic -16.2392 : 29.05890, Environmental -19.70310 : 26.22110 , and Social - 5.34674 : 28.31274, ratify that the results are not significant at the given significance levels.

Paired Sample T-Test results are analyzed to compare the banks' sustainability content between two years 2016/2017 and 2017/2018.

Table 5: Paired Sample Correlation Analysis

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	Economic 2017 and Economic 2016	12	.882	.000
Pair 2	Environmental 2017 and Environmental 2016	12	.827	.001
Pair 3	Social 2017 and Social 2016	12	.784	.003

2017 economic, environmental, and social disclosures and 2016 economic, environmental, and social disclosures are statistically correlated with the respective r values of 0.882, 0.827, and 0.784 (p -values 0.000, 0.001, and 0.003).

Table 6: Paired Sample Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Economic 2017 and Economic 2016	-5.13000	14.42134	4.16308	-14.29288	4.03288	1.232	11	.244
Pair 2	Environmental 2017 and Environmental 2016	10.38250	23.19655	6.69627	-25.12088	4.35588	1.550	11	.149
Pair 3	Social 2017 and Social 2016	-.92583	17.85186	5.15339	-12.26836	10.41670	-.180	11	.861

The economic disclosures ($t = -1.232, p > 0.05$) environmental disclosures ($t = -1.550, p > 0.05$) social disclosures ($t = -.180, p > 0.05$) are not significantly differ between two years.

Table 7 ascertains the relationship between the level of disclosures and the financial performance.

Table 7: Pearson Correlation Analysis

		General	Economic	Environmental	Societal
ROE	Pearson Correlation	.240	.141	-.061	.137
	Sig. (2-tailed)	.185	.442	.741	.454
	N	32	32	32	32
ROA	Pearson Correlation	-.010	.015	-.034	-.135
	Sig. (2-tailed)	.955	.935	.854	.463
	N	32	32	32	32

**. Correlation is significant at the 0.01 level (2-tailed).

Economic disclosures with ROE / ROA results p-value of 0.185 and 0.442 respectively, which indicate that the level of disclosures do not statistically influence on performance. Likewise, the degree of environmental and social disclosures do not significantly influence financial measures; ROA and ROE with respective p- Values of 0.741 and 0.454.

**Table 8: Linear Regression Analysis
ANOVA^a**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.900	3	.967	.750	.531 ^b
Residual	36.073	28	1.288		
Total	38.973	31			

a. Dependent Variable: ROA

b. Predictors: (Constant), Societal, Environmental, Economic

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	140.787	3	46.929	.750	.531 ^b
Residual	1751.283	28	62.546		
Total	1892.071	31			

a. Dependent Variable: ROE

b. Predictors: (Constant), Societal, Environmental, Economic

The regression model developed to measure the association of level of general, social, environmental, and social disclosures fails to ascertain a relationship with the financial measures (ROA and ROE) with p values of 0.531 and 0.531

5.0 DISCUSSION

Majority of the banks and finance companies in Sri Lanka adhere to the Consolidated GRI Sustainability Reporting Standards issued by the Global Sustainability Standards Board (GSSB). Sustainability reporting practices are concentrated on the social disclosures rather environmental risk disclosures. Similar results have been observed in Malaysian Banking sector by Harun, et al. (2013). The issues bothering on employee/ community investment such as training and development, equal opportunities, defined benefit plans, employee health and safety and

interactions with the local community has gained more attention in terms of sustainability disclosures (Khan, et al., 2010; Nwobu, et al., 2017). The precedent statement reflects the poor understanding of environmental risk associated with contemporary environmental issues such as global warming, climate change, waste disposal etc. Therefore, Sri Lankan banking and finance sector disclosures are inconsistent with the disclosures produce by Dhaka Stock Exchange-listed banks (Akter, et al., 2017).

The comparative analysis of two level of disclosures; G4 standards and GRI standards over two years period 2016/2017 and 2017/2018 shows no improvement over the period. 2016/2017 level of disclosures is equal to the 2017/2018 level of disclosures. Therefore, the findings of the study do not agree with the (Mahmud, et al., 2019; Garg, 2015; Sobhan, et al., 2011).

Because of the growing interest in reporting economic, social, and environmental performance, the study is concerned with measuring the relationship between sustainability disclosures and financial performance. It concludes that the level of disclosures has no correlation or association with the financial performance measure. Aupperle, et al., (1985) report the similar results in a study of firms listed in the Forbes. Investigation of UK top 10 companies over 1988-1997 period fail to ascertain a relationship between the variables since $p\text{-value} > 0.05$.

6.0 CONCLUSION

The study aims to discover the pattern of sustainability disclosure practices of companies in the finance sector in Sri Lanka. The results elucidate that financial companies are more interested in social disclosures than disclosing indirect economic impact and environmental performance. Moreover, the study confirms that there is no improvement in the level of disclosures over the period of time. In addition, the analysis reveals sustainability disclosures of a firm create no impact on the Return on Equity and Return on Assets. Therefore, the findings resulted in rejection of the hypotheses developed.

7.0 RECOMMENDATIONS

Regulators continuous monitoring of sustainability disclosure practices is required to maintain a balance between each layer/pillar. Besides, banks and financial institutes require self-governance

in order to contribute towards social, economic and environmental performance. Reporting on sustainability does not provide immediate benefits, enhanced transparency, reduced risk, increased stakeholder involvement will produce benefits in the long-run.

This paper provides inference for future studies. Future scholars can determine causes for sustainability reporting while analyzing the disclosures over the extended period. Additionally, cross-sectional analysis across the different industries can be performed by identifying challenges encountered by banks in reporting social, economic and environmental performance.

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Appendix A

Disclosure Index		
G4 Guidelines	GRI Guidelines	
General Disclosures		
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1	102-14	Statement from senior decision-maker
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EC 3	201-3	Defined benefit plan obligations and other retirement plans
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EC 5	202-1	Ratios of standard entry level wage by gender compared to local minimum wage
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LA 5	403-1	Workers representation in formal joint management-worker health and safety committees
LA 6	403-2	Types of injury and rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities
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LA 8	403-4	Health and safety topics covered in formal agreements with trade unions
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PR5		Results of surveys measuring customer satisfaction
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PR 9	419-1	Non-compliance with laws and regulations in the social and economic area

The Dividend Puzzle: A Review

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Abstract

The purpose of this study is to comprehensively review the determinants and explanations of dividend policy. Using systematic literature review approach, 355 research studies in dividend policy have been reviewed and a sample of 185 studies was selected based on the importance they ascribed to the dividend puzzle. A crossover analysis was carried out critically reviewing 123 research articles from the final sample. The results presented in this study revealed contradiction with a high level of discrepancy amongst studies both in terms of theories and determinants of dividend policy. Moreover, there is no published research study focused on all determinants and explanations, and there were no distinctive factors which affect the dividend policy alone and it is suggested to proceed with the dividend decision model for a single consensus of the dividend puzzle. It is notable that, researchers should have balanced focus on organizational, market and behavioral determinants when examining dividend policy. Management and investors should consider all the imperfections or factors, their interactions and consequences when making important dividend and/or stock decisions. The future studies conducted in the same phenomenon should be more comprehensive and should be carried out through the dividend decision model in a mixed method approach in order to overcome the research gaps arisen within the current paradigm. Otherwise, they are likely to result in a blind search. This study is conducted comprehensively reviewing all available theories and empirical determinants of corporate dividend policy and emphasize on the dividend decision model to deal with the dividend puzzle.

Key Words: Dividend policy, dividend puzzle, dividend decision model

INTRODUCTION

Various research studies have focused on dividend policy issues. The determinants of dividend policy were first investigated in early corporate financial studies. In 1956, Lintner pointed to existing dividend decision, its payout and firm's earnings as the benchmarks for future dividend decisions and the major determinants of corporate dividend policy. Miller and Modigliani (1961) suggested that in a perfect market the differential taxation of dividends could generate an 'affinity effect' whereby each firm would attract a fastidious clientele with a preference for its dividend policy. Elton and Gruber (1970) proposed that taxation has a negative impact on firm's dividend policy, which would equally lead to different tax clienteles. Higgins (1972) identified that firm's fund requirement for investments also has a significant impact on dividend policy. Bhattacharya (1979) identified profitability as a determinant of dividend policy and argued that managers could use dividend to communicate firm's profitability to outside investors. Rozeff (1982) identified agency cost as a major determinant of corporate dividend policy. Donaldson's (1990) stewardship theory suggested that corporate governance plays a positive role in diminishing agency costs while Jensen's (1986) free cash flow theory proposed that growth in dividend payouts may help to mitigate free cash flow under managers' control, therefore implying that free cash flow is also a determinant of corporate dividend policy. Mueller (1972) argued that dividend decision is based on the life cycle of the organization, and therefore life cycle variables such as size, growth opportunities and retained earnings to common equity ratio (Fama and French, 2001) can also be interpreted as determinants of corporate dividend policy. Baker and Wurgler (2004) stated that the decision to pay dividends is driven by current investor demand, which establishes market dividend premium as a determinant of corporate dividend policy. Shefrin (2009) investigated different behavioural accounts of dividends and posit that demographic factors such as low income, retired and older households as the actual determinants of dividend policy.

Even in the multi factor explanation context, findings of the different scholars are contradictory. For instance, Boțoc and Pirtea (2014) investigated dividend policy in sixteen emerging countries and findings implored that size, corporate governance, profitability, cash needs and liquidity as the determinants which have positive impact on dividend policy while growth is identified as a determinant which has a negative impact on dividend policy. Kuzucu (2015) studied the determinants of dividend policy in the Turkish listed firms. His findings revealed that the leverage, growth rate, profitability, earnings and family control as negative determinants, whereas

the size, age and P/E ratio as positive determinants and liquidity as insignificant variable. In terms of profitability and liquidity, his findings are contrary to Boțoc and Pirtea's (2014) results. Yusof and Ismail (2016) identified that firm size, earnings, and investment have a positive significant effect, whereas debt and large shareholders have a negative impact on dividend policy in the Malaysian context. Further, they revealed that growth, free cash flow and lagged dividends are insignificant which is contrary to previous findings. Baker and Jabbouri (2016) implored that the earnings, shareholder needs and the past dividends as key factors influencing corporate dividend policy. It seems that lagged dividends played a contradictory role in Yusof and Ismail's (2016) and Baker and Jabbouri's (2016, 2017) studies.

Bhattacharyya (2007) reviewed dividend policy focusing on clientele, signalling, agency and free cash flow hypotheses and results emphasized the future research studies should take all the empirical implications of all the theories while testing them simultaneously. Al-Malkawi et al. (2010) reviewed six major theories and their empirical stance on dividend policy. They concluded that the Fisher Black's statement of dividend puzzle is still valid; "the harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together" (Black, 1976, p. 5). Baker and Weigand (2015) revisited the dividend policy focusing seven explanations on paying dividends; bird in the hand, taxes and tax clienteles, asymmetric information, agency cost, catering, behavioural and firm life cycle theories. They suggested developing a new paradigm or model to compact the dividend puzzle. Addressing the aforementioned gaps in literature, this study focuses on all available explanations (twelve theories) based on dividend policy using the theoretical triangulation approach. Here, the aim of the study is to identify a possibly universal set of determinants of dividend policy, and to develop a new model to deal with the dividend puzzle as suggested by Baker and Weigand (2015). The contrasting views of aforesaid previous studies and lack of comprehensive reviews of dividend policy are the main justification for our study.

LITERATURE REVIEW

A number of theories of dividend policy were proposed in the past decades. Lintner (1956) reviewed available information from 600 listed companies and selected 28 firms for detailed investigation as the first attempt to study dividend policy determinants. After a detailed financial analysis, in-depth interviews were conducted and identified existing dividend decision, dividend

payout and net earnings as the key determinants of dividend policy, while liquidity and debts were identified as secondary factors.

Dividend Irrelevance Theory

In 1961, Miller and Modigliani criticized the bird-in-the-hand explanation theory and championed a view based on the concept of “dividend irrelevance.” They suggested that dividends have no impact on firm value under perfect and frictionless market conditions. Relying on quantitative modeling, they emphasized that given a certain investment policy, the firm’s dividend becomes irrelevant to its current valuation. Finally they identified tax differences and brokerage fees as major imperfections in the market place. Miller and Scholes (1978) argued that limitations such as interest deductions to investment income and tax free accumulation of wealth would cause taxable investors to be indifferent to dividends, despite tax differentials in favor of capital gains (Strong Invariance Proposition). The dividend irrelevance theory was highly criticized over the past decades even under the assumption of a perfect market. For example, De Angelo et al. (2006) criticized the theory by arguing that payout policy is not irrelevant to firm valuation in any market. After the irrelevance argument, there are multiple theories aroused supporting the relevance argument as stated below.

Bird-in-the-hand Theory

Lintner (1956) proposed that dividend payments were associated with lower risk. His argument was backed by Gordon (1959) who argued that dividends are valued above retained earnings. Lintner and Gordon consolidated the view that a ‘bird-in-the-hand’ is more valuable than “two in the bush” when it comes to capital gains.

Tax Preference Theory

The first attempt to investigate the impact of tax on dividend was provided by Lintner (1956). He argued that the higher the tax liability, the smaller the paid dividend. Miller and Modigliani (1961) identified tax as a major factor of imperfection and concluded that different tax brackets may lead to a particular clientele manifesting a preference for a given dividend policy. They were however unable to provide a mechanism for the phenomenon. Elton and Gruber (1970) supported the idea of a clientele effect by suggesting that higher firm's dividend payout ratios correspond to the lower tax brackets, thereby leading to different clienteles. Miller and

Scholes (1978) confirmed the findings in a seminal article. In summary, under the tax preference theory, tax is considered as a determinant of dividend policy. More recently, Deslandes et al. (2015) corroborated this view by identifying tax cuts as a key determinant of dividend policy.

Signalling Theory

Bhattacharya (1979) proposed the ‘signaling hypothesis’ based on the idea of imperfect information to account for the dividend puzzle. Assuming that investors have asymmetric information about firms while managers have inside information about profitability, managers can be seen as signaling information on profitability to the market via dividends. Bhattacharya argued that higher support value is informed by higher dividends. Although Lintner’s (1956) and Pettit’s (1972) findings were compatible with the idea of a signaling equilibrium, unfortunately their findings were not fully developed into a theory. Al Deehani (2003) emphasized the significance of the signaling theory by stating that the indication of future profitability is a key motivation for the payment of dividends. The debate continues, as Al-Malkawi (2007) found no support for the signaling theory while in contrast Basil Al-Najjar (2011), Patra et al. (2012) and Botocand Pirtea (2014) produced supporting evidence for the theory.

Agency Cost Theory

Rozeff (1982) argued that increased dividend premiums could reduce agency costs, but did not expand on the details of the process. Easterbrook (1984) did a survey to investigate the mechanisms relating dividends and agency costs. He identified a negative relationship between dividends and agency cost, and provided a convincing explanation for the dividend puzzle, which was strongly supported by Al-Malkawi (2007) and Patra et al. (2012). In contrast to those conclusions, Brav et al. (2005) and Maditinos et al. (2007) argued that there is no significant relationship between agency cost and dividend payout.

Substitution Theory and Outcome Theory

La Porta et al. (2000) investigated the agency cost theory using two alternative dividend models. In the first model, dividends are identified as a result of effective legal protection while in the second model dividends were identified as a substitute for effective legal protection in order to create corporate governance or reputation. Sawicki (2009) studied corporate governance in East Asian countries and found mixed results when using pre- vs. post-crisis as a dummy variable.

Setiawan and Phua (2013) confirmed the substitution model by identifying a negative impact from corporate governance on dividend policy. Botoc and Pirtea(2014) also supported the substitution model providing evidence that dividends are a substitute for effective legal protection. Benjamin and Zain (2015) also identified corporate governance as a substitute determining reductions in agency cost. Contrary to these findings, Yarram (2015) posit that corporate governance has a positive impact on dividend policy, supporting the outcome model. Yarram and Dollery(2015), Ashraf and Zheng (2015) and Shamsabadi et al. (2016) also supported the outcome model of dividends.

Stakeholder Theory

Cornell and Shapiro (1987) proposed the stakeholder theory expanding on the proposals by Titman (1984). They described non-investor stakeholder influence as net-organizational capital (NOC), proposing that management can indicate their capability to make payoffs on implicit claims through paying higher dividends. Holder et al. (1998) confirmed the stakeholder theory by revealing an impact from non-stakeholder influence on corporate dividend policy. Hence non-investor influence was also identified as a key determinant of dividend policy.

Free Cash Flow Theory

Jensen (1986) developed free cash flow theory with the purpose of encouraging managers to distribute cash rather than invest in negative NPV (Net Present value) projects or wasting it. Hence payment in increased dividends may reduce the agency costs and mitigate the agency problem.

Rent Extraction Hypothesis

In contrast to the free cash flow theory, Shleifer and Vishny (1997) developed the “Rent Extraction Hypothesis” with the proposal that major shareholders prefer private benefits and control of the firm over receiving dividends bringing advantages to all stockholders. Faccio et al. (2001) and Gugler and Yutoglu (2003) findings were consistent with the rent extraction hypothesis, as well as the study by Harada and Nguyen (2011) in Japan.

Pecking Order Theory

Following the pecking order hypothesis developed by Myers (1984), Fama and French (2002) proposed that, more profitable firms are less levered, and firms with higher level of investment have lower long-term dividend payouts, thereby concluding that investment opportunities were another determinant of dividend policy. The pecking order hypothesis was provided strong support by Al-Malkawi (2007).

Life Cycle Theory of Dividends

Mueller (1972) proposed that as large and mature firms realize investment opportunities, investors may face a reduction in dividends. According to Mueller's argument, dividend policy is therefore based on the life cycle of the firm. Fama and French (2001) later supported those views.

Catering Theory of Dividends

In a seminal study and through comprehensive analysis of published data, Baker and Wurgler (2004) stated that the decision to pay dividends, and hence dividend policy itself, is based on the current investor demand for dividend payments. Tangjitprom (2013) confirmed the catering theory of dividends by suggesting that dividend premium is a key determinant of dividend policy. Wang et al. (2016) and Dereeper and Turki (2016) also confirmed the catering theory by stating that firms continuously change their dividend policy in order to cater for investor's demands.

Liquidity Hypothesis

In 1956, Lintner identified liquidity as a less important determinant of corporate dividend policy. When there is trading friction in financial markets, an immediate implication of Miller and Modigliani's (1961) view is that, firms with less liquid shares (i.e., shares with higher trading friction) are more inclined to pay dividends. Banerjee et al. (2007) termed this implication the "liquidity hypothesis of dividends", and provided further evidence that firms with less liquid stocks are more likely to initiate or continue dividend payments. Ye et al. (2015) also observed that stock dividends policy has a negative relationship with liquidity, and that the relationship between stock dividends and liquidity of ex ante announcement is influenced by the time choice of stock dividends. In 2015, Baker and Kapoor found the highest support for the liquidity hypothesis among other possible motives for stock splits (Stock dividends).

Behavioural Explanations

Shefrin and Statman (1984) made the point that financial theory has ignored the question of how individual investors actually behave with regards to dividends. They argued that standard models or theories seem incapable of accounting for inclusion of behavioral elements, thereby identifying a substantial 'behavioral gap' in the finance literature. From their perspective, demographic attributes of investors such as their preference for high or low dividend payouts play a vital role in determining dividend policy. Accordingly, some investors would prefer a premium for cash dividends for self-control reasons (Thaler and Shefrin, 1981). Miller (1986) also argued that behavioral/cognitive elements play a vital role at the most micro decision level, but was unable to pinpoint the specific behavioral elements bearing on dividend policy. Jirporn (2016) et al. emphasized that firms with more talented executives are more likely to pay larger dividends, thus identifying managerial ability as a behavioral determinant of dividend policy.

Multiple-factor empirical review

Dickens et al (2002) emphasized that five of the seven variables originally identified by Lintner (1956) can explain dividend policy to a large extent: investment opportunities, profitability, ownership, risk size and past dividend. Thesis and Dutta (2009) pointed at capital to assets ratio and prior year dividends as positive determinants, and to earnings volatility and natural log of revenue as negative determinants, and concluded that the findings by Dickens et al (2002) were robust. Al- Malkawi's (2007) quantitative analysis of published data revealed that size, age and profitability were the determinants of dividend policy in the Jordanian market. Pandey and Ramesh (2007) investigated dividend policy under restricted monetary policy and identified restricted monetary policy as a key determinant, highlighting the importance of investigating multiple macro-economic variables. Basse and Reddemann (2011) identified inflation as a macroeconomic determinant of dividend policy in the USA context.

On one hand, Dutta (1999) investigated managerial ownership as a possible dividend determinant and identified insider ownership as a key negative determinant, a finding confirmed by Benjamin et al. (2016) in the Malaysian context. On the other hand, Al Najjar and Hussainey (2009) identified outside directorship as a key determinant of dividend policy. Al-Najjar and Kilincarslan (2016) posit that ownership structure has an overall negative impact on dividend policy. Benjamin et al. (2016) identified family share ownership as key determinant for the firms

with low debt, smaller total assets and low-growth opportunities. Setiawan et al. (2016) found that government- and foreign-controlled firms have a positive impact on corporate dividend policy, and a negative effect from family firms. Hoje and Pan (2009) identified managerial enrichment as another key determinant of corporate dividend policy. Booth and Zhou (2015) identified the market power as another key determinant of corporate dividend policy.

Abor and Bokpin (2010) investigated the dividend policy in 34 emerging countries. They identified that investment opportunity, profitability and stock market capitalization as main determinants and leverage, debt and external financing as less important determinants of dividend policy. Al-Ajmi and Hussain (2011) investigated the dividend policy in Saudi Arabia and identified that existing dividend payments, profitability, cash flows, and life cycle as core determinants of dividend policy. Khan et al. (2011) investigated the determinants of dividend policy through a qualitative approach. Interviewing 23 corporate managers, they argued that past dividends and profitability do not influence current dividend policy. Current earnings and liquidity were identified as determinants of dividend policy in Pakistan. Baker and Powell (2012) investigated dividend policy in Indonesia using a survey technique and revealed that earnings stability, current and future earnings, shareholder preferences and impact of dividends on stock prices were the key determinants of corporate dividend policy. Perret et al. (2013) identified size, earned and contributed capital mix, and growth opportunities as key determinants of dividend policy in ADR firms (American depository receipts). Arko et al. (2014) studied the dividend policy in Sub Saharan African countries and revealed that profitability, investment opportunity, taxation, Institutional shareholding, leverage and earning volatility (risk) were the key determinants of dividend policy. Yarram (2015) studied the dividend policy in Australia and identified corporate governance, profitability and growth opportunities as the determinants of corporate dividend policy.

Patra et al. (2012) identified size, liquidity, profitability, investment opportunities, leverage and risk as the determinants of dividend policy. Jiraporn et al. (2016) identified that organizations with more capable executives exhibit a high propensity to pay dividends, pointing to managerial ability as a key determinant of dividend policy.

Ozoet al. (2015) studied dividend policy using a qualitative methodology and identified current earnings and their stability, availability of cash, and past dividends as the determinants of

dividend policy. Ankudinov and Lebedev(2016) studied the dividend policy in Russian markets and revealed that profitability, firm size, investing opportunities, financial structure of the firm and sectorial affiliation were key determinants of corporate dividend policy. Yusof and Ismail (2016) investigated the determinants of dividend policy in Malaysia. They identified earnings, size of the firm and investment as positive significant variables, while debt and large shareholders as negative significant determinants. Baker and Jabbouri (2016) identified level and stability of current earnings and investor's need as the most important determinants of corporate dividend policy. Al-Kayed (2017) studied the dividend determinants in Islamic and conventional banks and identified profitability, growth, liquidity, previous year dividend and leverage as key determinants of corporate dividend policy. The above review shows that the determinants of dividend policy remain an open question with multiple theories and potential factors being still debated as possible solutions to the puzzle. This situation seems to require a more general reflection on approaches to the problem.

RESEARCH METHODOLOGY

When investigating dividend policy, researchers can rely on two broader methodologies: epistemological and phenomenological paradigms. Epistemologists use the quantitative methodology based on data collection, analysis and interpretation. Phenomenologists approach the topic using a qualitative ethnomethodology position (Uyangoda; 2010). From a set of 355 research studies in dividend policy, 185 studies were selected as the final sample on the basis of study relevance to the dividend puzzle. Even though the entire research study is based on 185 research articles, the crossover analysis was carried out reviewing 123 articles considering the direct relevancy to the dividend puzzle and the year of publication. In this study, the methodology adopted for the systematic literature review was proposed by Kumar and Goyal (2015) considering the fact that it has emphasized the use of systematic literature review method in the area of behavioural and corporate finance. The systematic literature review allows the researchers to identify, select and critically evaluate previous research studies in order to answer a clearly formulated research question/s. Accordingly, the data base search was conducted through key words, publication year, publisher, and the journal. A crossover analysis was used as the main data analysis approach.

DATA ANALYSIS AND DISCUSSION

The data analysis and discussion was carried out through three stages. First, a descriptive analysis was carried out discussing the sample profile and classifying the literature. Second, a crossover analysis was carried out identifying the research gaps in dividend puzzle. Finally, a holistic model is proposed to deal with the gaps which has arisen within the dividend puzzle.

Description and classification of literature

The literature review was conducted reviewing 185 articles in dividend policy. These studies were descriptively analyzed with special reference to the year of the publication, publisher, and the journal.

Sample profile by the year of the publication

The literature survey was carried out based on selected 185 publications from 1956 to 2017. Out of the final sample, 143 articles were published after 2000 whereas 42 studies were carried out amongst 1956-1999. It is vital to note that 111 publications (60 % from the sample) were published in the past decade (2007-2017). Table 1 depicts the sample profile by the year of publication.

Table 1.0: Sample profile by the year of publication

This table shows the sample breakdown based on the year of publication.

Year	No of research articles		
		2010	07
2017	12	2009	13
2016	12	2008	05
2015	14	2007	13
2014	07	2000-2006	32
2013	06	1956-1999	42
2012	08		
2011	14	Total	185
Year	No of research articles		

Sample profile by the publisher

The descriptive analysis of the sample revealed that 47.57% of the sampled studies were published by Emerald Group Publishing Limited whereas 14.59% of the studies were published by John Wiley and Sons Inc. It is vital to highlight that less than 5% of the sampled studies are published by unknown publishers. Table 2 shows the sample profile by the publisher.

Table 2.0: Sample profile by the Publisher

This table shows the sample breakdown by the publisher and it shows the no of selected articles against the no of screened articles produced by the respective publishers.

Publisher	No of screened articles	No of Selected Articles	Percentage (N=185)
Emerald	149	88	47.57%
Wiley	44	27	14.59%
Taylor and Francis	34	14	7.57%
Elsevier	29	13	7.03%
JSTOR (Online Publisher)	19	8	4.32%
Oxford University Press	12	6	3.24%
American Economic Association	6	4	2.16%
Cambridge University Press	5	3	1.62%
Springer	4	2	1.08%
SAGE	4	2	1.08%
Inderscience	5	2	1.08%
University of Chicago Press	3	2	1.08%

Financial Management Association	2	1	0.54%
Institutional Investor Journals	2	1	0.54%
American Accounting Association	2	1	0.54%
Macrothink	3	1	0.54%
Macmillan Publishing Co	1	1	0.54%
Social Science Association	1	1	0.54%
Other	30	8	4.32%
Total	355	185	100%

Sample profile by the Journal of publication

The final sample is spread over 82 academic journals and 50.81% of the sampled studies were selected from ten journals as depicted in Table 3. The descriptive analysis revealed that top five journals in terms of number of selected studies are Managerial Finance (40 research articles), International Journal of Managerial Finance (9 research articles), The Journal of Finance (8 research studies), Financial Management (8 research articles), and Journal of Financial Economics (8research studies).

Table 3.0: Sample profile by the Journal

This table shows the sample breakdown by the journal. The entire list is not included due to length constraints and the full list is available on request.

No	Journal	No of articles	% (N=196)
1	Managerial Finance	40	21.62%
2	International Journal of Managerial Finance	9	4.86%
3	The Journal of Finance	8	4.32%
4	Financial Management	8	4.32%
5	Journal of Financial Economics	8	4.32%
6	Studies in Economics and Finance	6	3.24%
7	The Review of Financial Studies	5	2.70%
8	American Economic Review	4	2.16%
9	The Journal of Risk Finance	3	1.62%
10	China Finance Review International	3	1.62%
Total		94	50.81%

Crossover Analysis and Discussion

The crossover analysis was conducted in three stages. First, methodologies applied by the sampled studies were critically analyzed and summarized in Table 5⁴.

Table 5. Summary of methodologies applied by sampled studies

This table shows the summary of methodologies used by the sampled studies in explaining the dividend policy.

Methodology	Number of Studies	Percentage (N=123)
Quantitative Published data	97	78.86%
Quantitative Survey Data	14	11.38%
Quantitative Modelling	8	6.50%
Qualitative Methodology	4	3.25%
Triangulation Approach	0	0.00%
Total	123	100%

Regarding sample composition, 78.86% of the studies were based on published data analysis, 11.38% on survey data, 6.50% on quantitative modeling and 3.25% on the qualitative approach. There is no single published study based on the triangulation approach. When the used methodologies of the sample are considered, most of the studies

⁴ A detailed analysis of the methodologies used in the sampled 123 studies is available on request.

used (78.86%) proxy variables and 96.75% of the studies were based on the quantitative methodology in order to explain the dividend policy. It is debatable if the researchers tend to use only the proxy explanations in order to elucidate an explanation which has implications for behavioural decisions. Even though 96.75% of the methodologies on quantitative approach and contradictory in their findings, at least a single researcher did not show a positive signal to use triangulation approach in order to have more validity and completeness of their findings. Hence, it has been identified as a methodological research gap. Accordingly, the explanations based on published numerical data or survey results data could be validated through a triangulation approach; otherwise, the deduction results of various explanations based on such approaches under different conditions or contexts are inconclusive and inconsistent as same as today (Dewasiri and Weerakoon, 2016).

The second stage of data analysis was the investigation of common determinants of the corporate dividend policy cited in the sampled studies, summarized in Table 6. Notice that since a study can indicate more than one determinant, the total number of references to a determinant factor and the percentages do not add up to 123 (the number of sampled studies). For the same reason, percentages do not add up to 100%.

As shown in Table 6, most of the studies (35%) investigated investment opportunities as a key determinant. Moreover, profitability, earnings, company size, leverage, liquidity, ownership structure, and past dividends were investigated as key determinants by over 15% of the sample studies. There was no single published research study investigating all the determinants, even after correlation, validity and reliability analysis.

Table 6. Determinants of dividend policy in sampled studies (N=123).

This tables shows the determinants of dividend policy investigated in the sampled 123 studies.

Determinant	Number research studies #	Percentage
Growth Opportunities	43	35%
Profitability	38	31%
Earnings	29	24%
Company Size	27	22%
Leverage	22	18%
Liquidity	21	17%
Ownership Structure	19	15%
Past Dividends	18	15%
Shareholder preference	17	14%
Tax	16	13%
Corporate Governance	15	12%
Free Cash Flow	13	11%
Business Risk	12	10%
Industry Influence	9	7%
Life Cycle of the firm	8	7%
Rent Extraction	5	4%
Demographic Influence	3	2%

Table 7 displays the acceptance and rejection rate of dividend determinants across the sampled studies⁵. As mentioned above, 24% of the research studies investigated earnings as a key determinant; amongst those, 97% accepted earnings as a main determinant. Likewise, all the other proposed variables were accepted by over 50 % of the studies referring to them as key determinants of corporate dividend policy except free cash flow (46%). Even though, rent extraction and demographic variables scored 100% acceptance, it were investigated only in few studies out of the sample as mentioned in

⁵ A detailed analysis of the determinants investigated in sampled 123 studies is available on request

table 3. Moreover, it is noticed that all of the dividend determinants and its relationships were contradictory in different studies in different contexts. Hence, it implied that there is no single consensus of dividend determinant puzzle.

Table 7. Acceptance and rejection rate of major dividend determinants

This table shows the acceptance of the dividend determinants investigated in the sampled studies.

Determinant	Number		Rejected #	Mix #	Acceptance Rate
	research studies	Accepted #			
	#				
Growth Opportunities	43	35	4	4	81%
Profitability	38	36	1	1	95%
Earnings	29	28	1		97%
Company Size	27	26	1		96%
Leverage	22	17	3	2	77%
Liquidity	21	15	2	4	71%
Past Dividends	18	16	2		89%
Share holder preference	17	15		2	88%
Tax	16	9	6	1	56%
Business Risk	12	10	1	1	83%
Free Cash Flow	13	6	7		46%
Life Cycle of the firm	8	6	1	1	75%
Industry Influence	9	6	2	1	67%
Rent Extraction	5	5			100%
Demographic Influence	3	3			100%
		Dispersed:			
Ownership Structure	19	5	1		26%
		Concentrated:			
		13			68%
		Substitute:			
Corporate Governance	15	7			47%
		Outcome:			
		8			53%

The third stage of the analysis was the deduction of dividend theories put forward by the sampled studies, with the breakdown presented in Table 8. Most research studies focused on testing the signaling (49%), agency cost (33%), tax preference (20%), catering (17%), outcome/substitute (15%), and life cycle (15%) theories, while other theories were comparatively neglected. Once again, as more than one theory can be addressed in a single study, totals do not add up to 123 studies or 100% frequency. Moreover, no published research study focused on testing all of the dividend theories simultaneously, even after controlling for respective assumptions which could be considered as another research gap of dividend policy⁶.

Table 8. Dividend theories tested in sample studies.

This table shows the theories of dividend policy investigated in the sampled 123 studies.

Theory or Hypothesis	Number research studies #	Percentage (N=123)
Signaling Theory	60	49%
Agency Cost Theory	40	33%
Tax Preference Theory	24	20%
Catering Theory	21	17%
Outcome/Substitute Theory	19	15%
Life Cycle Theory	18	15%
Free Cash Flow Theory	13	11%
Pecking Order Theory	11	9%
Bird in the Hand Explanation	11	9%
Rent Extraction Hypothesis	6	5%
Stakeholder Theory	3	2%
Behavioral Explanations	3	2%

Table 9 displays the acceptance rate of dividend theories in the sampled studies. The highest acceptance rates were achieved by the life cycle (94.4%), pecking order, catering, signaling and agency cost theories. Even though the rent extraction,

⁶ A detailed analysis of the theories investigated in sampled 123 studies is available on request

stakeholder, and behavioral acceptance rate is high, those theories are investigated only in few studies (less than 10 studies). Overall, there is a high percentage of hypothesis rejections, which points to contradictory findings of the explanations which could be considered as another research gap in dividend policy.

Table 9. Acceptance rates of the dividend theories in sampled studies.

This table shows the acceptance of the dividend theories investigated in the sampled studies

Theory or Hypothesis	Number	Accepted #	Rejected #	Mix #	Acceptance Rate
	research studies #				
Signalling Theory	60	46	11	3	76.7%
Agency Cost Theory	40	30	5	5	75.0%
Catering Theory	21	19	1	1	90.5%
Tax Preference Theory	24	11	9	4	45.8%
Life Cycle Theory	18	17	1	-	94.4%
Pecking Order Theory	11	10	1	-	90.9%
Free Cash Flow Theory	13	8	5	-	61.5%
Bird in the Hand Explanation	11	4	5	2	36.4%
Rent Extraction Hypothesis	6	6		-	100.0%
Stakeholder Theory	3	3		-	100.0%
Behavioural Explanations	3	3		-	100.0%
Outcome/Substitute Theory	19	Substitute -10 Outcome - 9		-	52.6% 47.4%

The crossover analysis revealed that there are contradictions in both theories and determinants, it is important to develop a new model to deal with the dividend puzzle as emphasized by Baker and Weigand (2015). The findings divulge that both behavioural, firm and market characteristics influence the corporate dividend policy. Hence, an integrated explanation could be discussed as a cause and effect model as emphasized by Covalleski et al. (2010). Figure 1, represents a simple generic dividend decision model

(DDM), which could be taken as a template for developing more specific paradigms. The DDM emphasizes on the causal relationship between firm and market variables at the firm/ market level while impact of behavioural determinants and individual mental states showing at the individual level showing how organizational, market and behavioral factors effect firms' corporate dividend decisions.

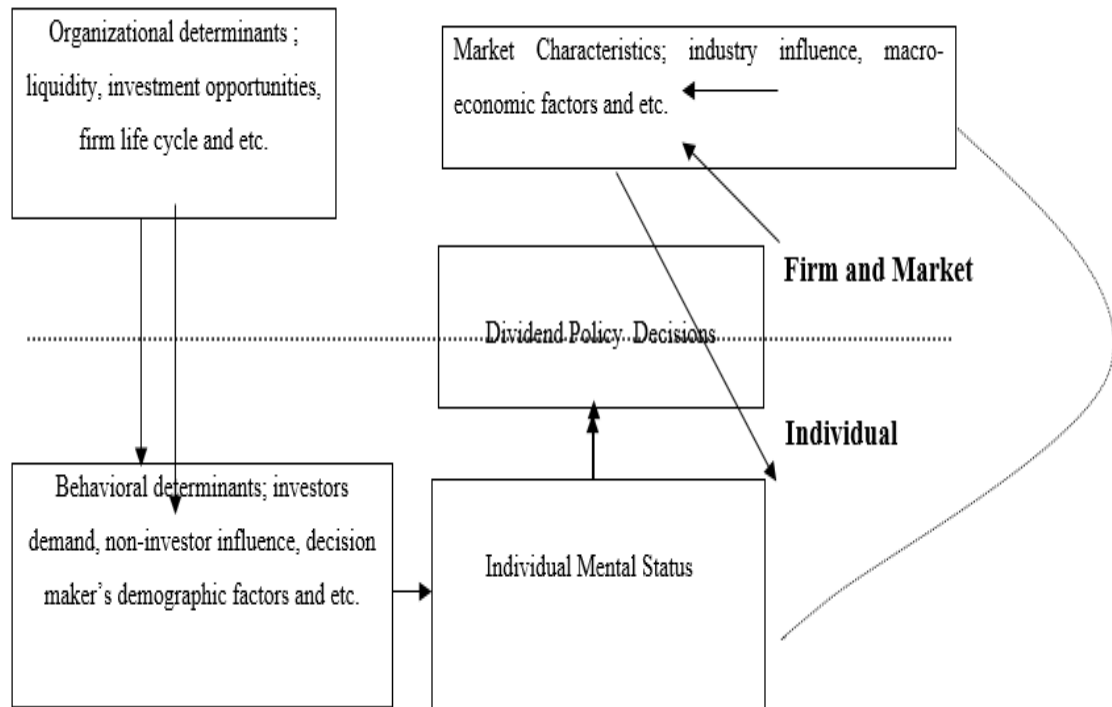


Figure 1. Dividend Decision Model

CONCLUSION

It is notable that, more than 12% of the sampled studies investigated investment opportunities, profitability, earnings, company size, leverage, liquidity, ownership structure, past dividends, investor preference, tax, and corporate governance, as key variables, amongst those, more than 50 % accepted the same factors in determining corporate dividend policy. Moreover, there was no single research study investigating all the determinants, even after correlation, validity and reliability analysis. The theoretical triangulation revealed that more than 75% accepted that signaling, agency cost, life cycle,

catering, pecking order, and rent extraction theories explain the dividend policy. Besides, there is a high usage rate (78.86% of the published data based studies) of proxy variables to explain determinants which is problematic in determining dividend policy. The results presented in this study revealed contradiction with high level of discrepancy between studies both in terms of theories and determinants of dividend policies. Even though the dividend puzzle has been investigated for decades, researchers have not yet attempted to test and discuss all available theories and it is proposed to study determinants simultaneously in a single study. Here it is argued that the suggested DDM is the key to a consensual solution to the puzzle of dividend policy.

IMPLICATIONS OF THE STUDY

As practical implications, two main suggestions are made, aimed at promoting more widespread agreement over theories and determinants.

1. In reality, dividend decisions are based on variety of conflicting forces between organizational, market and individual dilemmas. Hence the researchers should have balanced focus on firm, market and behavioral determinants as emphasized in dividend decision model when examining the dividend policy.
2. Management and investors should consider all of the imperfections or factors, their interactions and consequences when making important dividend and/or stock decisions.

AVENUES FOR THE FUTURE RESEARCH

As future directions, it is imperative for researchers to investigate all variables in a single study after a careful evaluation of multicollinearity, validity and reliability analysis, and to use a triangulation approach to enhance the validity and completeness of conclusions while reducing potential contradictions (Yesmin & Rahman (2012)). It is imperative to note that most of the dividend studies (e.g. Al-Malkawi, 2007; Al-Kayed, 2017; Al-Najjar and Kilincarslan, 2016, 2017; Baker and Jabbouri, 2016, 2017; Baker and Kapoor, 2015) focused on two major research questions in a single study; what are the determinants of dividend policy and why do companies pay dividends (theoretical explanations). Teddlie and Tashakkori (2003) stated that mixed methods studies are

superior as they can answer research problems/questions that the other approaches/methodologies cannot. Onwuegbuzie (2006, p.483) argued that “mixed methods studies embed both a quantitative research question and a qualitative research question within the same study”. Accordingly, the research study which need a triangulated or mixed method inquiry are combined with both qualitative and quantitative aspects (Dewasiri et al, 2018). For instance, Creswell &Tashakkori, 2007 emphasized that “when a project explores mixed research questions with interconnected qualitative and quantitative components or aspects (e.g., questions including “what and how” or “what and why”), the end product of the study (conclusions and inferences) will also include both approaches”. Hence, this study recommends the future researchers to especially focus on methodological triangulation when investigating the dividend puzzle since it includes both qualitative and quantitative (what and why) research questions. Moreover, if a researcher has taken a proxy variable, triangulation/mixed methods can provide a dual confirmation on behavioral reality. Hence, the results do not recommend the design of studies with few theories or determinants and too many symptoms, as they are likely to result in a search in the darkness. It is suggested to proceed with the dividend decision model to have a single consensus of the dividend puzzle.

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Economics, Public Policy, Law & Education

A Study on Identifying Writing Errors Pertaining to Number Agreement

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Abstract

This study investigated errors committed by first year undergraduates pertaining to number agreement. The study examined the corpus of 60 test papers written by 30 participants. Through the study, the types of errors were identified in relation to number agreement and were classified into various categories. The most common errors committed by the participants were number agreement issues with the use of nouns, pronouns and subject and verb. The study is important to educators and study material developers who should become aware of the kind of errors that their target learners make, so that they are in a better position to put appropriate intervention strategies into place. For learners, error analysis is important as it shows the areas of difficulty in their writing. The limitations and some pedagogical implications for future studies are included at the end of this research paper.

Key words: errors, undergraduates, second language, number agreement, writing skills

INTRODUCTION

For many years, there have been many studies in the process of the first language acquisition and second language learning. Findings about first language acquisition have been adapted to second language learning and it has been concluded that second language acquisition occurs in a similar way that children learning their native mother tongues since making plenty of mistakes is a natural section of language acquisition process. They lack great deal of information about subject-verb agreement. As they got feedback from adults, they learn how to produce grammatically and semantically acceptable sentences in their native language. What a second language learner does in operating on the target language is not different from that of a child acquiring his first language. It is inevitable that all learners make mistakes and commit errors. Mostly they use the number distinction in their expressions, both spoken and written, incorrectly. However, the process can be

impeded through realizing the errors and operating on them according to the feedbacks given. Identifying the steps through proper analysis that learners follow to acquire their second language would be helpful for the researcher and language teachers realize the mistakes and errors of language learners in constructing the new language system.

Error analysis enables teachers to find out the sources of errors and take pedagogical precautions towards them. Thus, the analysis of learner language has become an essential need to overcome some questions and propose solutions regarding different aspects. This study focuses on the types of error analysis and the frequency of their appearance in the learners' writings. Accordingly, the study aims to examine the following research questions:

1. What are the types of errors the ESL students make pertaining to number agreement in their writings?
2. How frequent do these errors occur in their English L2 written work?

There are internal and external factors that influence a learner's performance in a second language. Unlike previous studies which have paid more attention to diverse areas in error analysis, very little attention has been paid to the errors that are made due to number distinction. The findings can contribute to eliminate the errors learners make in relation to number distinction since the teachers can also be made aware of the types and patterns of errors in relation to number distinction which would encourage them to come up with new strategies for teaching. Further it's a clearly known fact that errors in writing can contribute to less number of pass rates in examinations and even less growth in both academic and professional fields. This is really a very alarming situation and everyone should pay attention to this grave problem. Having realized this big issue, this study explores the main reasons that caused the learners to make errors in relation to number agreement in English language.

LITERATURE REVIEW

English is one of the mandatory subjects a student has to pass during various stages in tertiary education. English is considered as an international language which is more essential to be learnt by students. The importance of English Language is highly discussed with relevance to each and every subject. Based on the previous error analysis done, it can be identified that there are many issues and difficulties which can affect the errors learners make in relation to number distinction in English language. The present study deals with the errors committed by first year undergraduates of an institute providing tertiary education in Sri Lanka. It tries to explore the weak areas of students' language use in written form. It draws light on the importance of doing an error analysis-based on number distinction. It provides various strategies to the language teachers for using in language classrooms. This study would analyze different categories of errors in relation to number distinction committed by the first year students. It would focus on the frequency of the errors and would also make the students aware about the mistakes that they made in the process of language learning and would explore the underlying processes that are involved in language learning. The focus of this study is to identify the errors that learners make in applying agreement rules pertaining to number distinction and the frequency of the types of errors they make.

This chapter focuses on the theoretical framework in relation to error analysis. It discusses the theories presented by various scholars such as Skinner, Corder, Chomsky and Ellis. It also discusses the studies that have been done on error analysis based on Sri Lankan context. Further this chapter provides extensive details of the rules that come under the area of error analysis in English language.

In the past, the field of error analysis was highly influenced by the behaviorist learning theory of language, and the learner's errors were considered the result of the existence and interference of the rules of the first language. It was considered that language learning is a process of habit formation and once the habits of one language are being formed, they put resistance in learning the rules of the second and foreign language.

Behaviorist Approach

One of the earliest scientific explanations of language acquisition was provided by Skinner. As one of the pioneers of behaviorism, he accounted for language development by means of environmental influence. Skinner argued that children learn language based on behaviorist reinforcement principles by associating words with meanings (Skinner, 1976). Correct utterances are positively reinforced when the child realizes the communicative value of words and phrases.

Universal Grammar

However, Skinner's approach was soon heavily criticized by Noam Chomsky. In the spirit of cognitive revolution in the 1950's, Chomsky argued that children will never acquire the tools needed for processing an infinite number of sentences if the language acquisition mechanism was dependent on language input alone.

Consequently, he proposed the theory of Universal Grammar: an idea of innate, biological grammatical categories, such as a noun category and a verb category that facilitate the entire language development in children and overall language processing in adults (Chomsky, 2015). Universal Grammar is considered to contain all the grammatical information needed to combine these categories, e.g. noun and verb, into phrases.

Contrastive Analysis

The contrastive analysis was formed for understanding the errors committed by the learners in the light of the rules of both languages. On the basis of similarities of the rules of two languages, when there was a positive and constructive effect on the learning, it was considered the positive transfer, and on the basis of difference of rules, when there was resistance in language learning, it was considered the negative transfer (Ellis, 1994).

Teachers and linguists focused on contrastively analyzing two languages. And the errors of the learners were taken into account based on contrastive analysis of languages. However, the contrastive analysis could not define all the causes of the errors and it was realized that the process is not as simple as elaborated by contrastive analysis, rather there are various underlying processes

that are working behind the language learning. Language learning is a very complicated and complex phenomenon and error analysis is basically the linguistic analysis.

Evolution of Error Analysis

It was realized that the errors are not only the result of the interference of the mother tongue rather many other universal and underlying structures are responsible for the errors of the learners. The cognition of the learner and many other factors are responsible for the errors and mistakes of the learners. According to linguist Corder (1981), the following are the steps in any typical error analysis research:

1. Collecting samples of learner language
2. Identifying the errors
3. Describing the errors
4. Explaining the errors
5. Evaluating/ Correcting the errors

Corder distinguished two kinds of elicitation which are known as clinical and experimental elicitation. Clinical elicitation involves getting the informant to produce data of any sort, for example by means of general interview or writing a composition. Experimental elicitation involves the use of special instrument to elicit data containing the linguistic features such as a series of pictures which had been designed to elicit specific features.

Later on, Chomsky's nativist theory gave the new direction to the study of error analysis and language learning. According to that theory, language learning is not simply the process of habit formation rather there is a universal grammar and learners have the capacity of learning any language rules. This theory proposed that there are many cognitive processes that are involved in language learning. In this perspective, Corder points out that some of the learning techniques and strategies that are being used by the second and foreign language learners are the same as the learners of the first language used during the process of first language acquisition (Corder, as cited in Richards, 1971).

This is a brief overview of the area of error analysis. Now, the current study would take into account of all these reasons and causes of error analysis in relation to number distinction and would analyze the errors made by the first year undergraduates in National Institute of Business

Management, Kurunegala. This study attempts to throw light on the significance of identifying errors pertaining to number distinction that would be helpful in teaching and learning a second or a foreign language.

METHODOLOGY

This empirical study was conducted at National Institute of Business Management, Kurunegala with the sample of 30 students (both males and females). The researcher conducted two tests to gauge the levels of proficiency of English of the students and the errors that students make in relation to number distinction.

Then the researcher has done a quantitative analysis in each essay tracing errors they have done in terms of number distinction in their writing. The papers were analyzed separately and then compared and contrasted to see the similarities and differences of errors they had made. The main purpose of the research is to examine the reason as to identify the types of errors they make pertaining to number distinction and the most common errors the learners make out of them.

This chapter is mainly devoted to outline the research design and methodology applied in this study. The main aim of the study is to identify the writing errors the undergraduates make in relation to number distinction. Moreover, it is designed to identify the demands of the writing population, to address their language needs and requirements. And then the analysis is done in order to recognize their requirements. Finally, the researcher addresses them in a logical manner.

Total target population of this study was first year students following a management degree program at National Institute of Business Management, Kurunegala. The age range of the research sample was from 20 to 22. Among the thirty participants, 19 were females and 11 were boys and they all were from diverse social backgrounds ranging from Kurunegala to Anuradhapura.

Test Paper 01

The multiple choice question section consists of ten questions where the participants had to select the correct answer by underlining it from the choices of answers provided. The multiple choice question set was created with the intention of measuring the participants' understanding of the diverse aspects of grammar knowledge in English language.

The structure of the multiple choice question paper is given in Table 01.

Table 01: Structure of Test Paper 01 – Section 01

Question no.	Grammar Component
01	Indefinite Pronouns
02	Punctuations
03	Tenses
04	Adverbs
05	Tenses
06	Prepositions
07	Nouns
08	Phrases
09	Conditionals
10	prepositions

The section 02 of the test paper 01 was a writing task where the participants had to write paragraph containing 50-60 words. The task provided in the paper is mentioned below

Write a paragraph on one of the following topics in the space given below. (50-60 words)

- Facebook and younger generation
- Peace in Sri Lanka
- Education – is it necessary?
- Tele dramas in Sri Lanka

Test Paper 02

The test paper 02 was provided to the participants to identify the errors they make in English language in relation to number distinction and frequency of errors they make in relation to them.

The paper consisted of four sections and it has been described below.

- Section 01 – Multiple choice questions
- Section 02 – Essay writing
- Section 03 – Picture description

Section 01 – Multiple Choice Questions

The section 01 of the paper consisted of 14 multiple choice questions which have been created based on the rules that are available in English language in relation to number distinction.

Multiple choice questions are often called fixed choice, selected response or multiple choice items because they are not always questions, and they require students to select from among various options that are presented to them.

The structure of the multiple choice question paper is mentioned in Table 04. **Table**

02: Structure of Test Paper 02 – Section 01

Question no.	Grammar Component
01	Subject verb agreement
02	Use of 'and'
03	Collective nouns
04	Indefinite pronouns
05	Indefinite pronouns
06	Indefinite pronouns
07	Verb following the noun
08	Collective nouns
09	Collective nouns
10	Subject verb agreement
11	Quantity nouns
12	Relative pronouns
13	Proper nouns

Section 02 – Essay Writing

Essay questions require students to write answers to statements or questions. To complete a successful essay exam, one needs to be able to recall relevant information and to organize it in a clear way, generating a thesis and building to a conclusion.

The focus of this task provided in the paper was to identify the errors the learners make in relation to number distinction when they produce language in writing and how often these errors are made by them.

Section 03 –Picture Description

Picture Description allows the participants to describe a given picture with the use of their imagination. The focus of this task provided in the paper was to identify the errors the learners make in relation to number distinction when they produce language in writing and how often these errors are made by them.

Limitations

This study has several limitations that can be addressed in future research. Although the present sample is sufficient for exploratory research, future research should aim for a large sample size. Because the findings of the research are limited to that particular area when it comes to small sample size.

Also the research was conducted basically based on students' perception. Therefore, it cannot be identified the way that teachers' perception regarding the particular research problem. Therefore, it can be suggested that future research should analyze the teachers' perception regarding above problem.

Furthermore, this study is based on one particular institution and its target group was taken from only one discipline and it will bring limited information to the reader and further research should pay more attention to have a larger sample size and it will be highly beneficial if the sample consists of learners from diverse disciplines.

Except these unavoidable limitations, other issues were attempted to be resolved with the expectation of deriving solid and accurate conclusion based on the sample.

ATA ANALYSIS AND FINDINGS

The participants were provided two test papers: the first paper was provided with the intention of identifying the error types students commit due to the violation of number agreement rules and the second paper was provided to identify the frequency of the errors relating to number agreement that occur in L2 writing of the study participants.

The proficiency test paper consisted of two sections : It included a set of multiple choice questions and paragraph writing. The results of the test paper 01 aided to find out the most commonly made error types due to number and those areas are subject verb agreement, the use of coordinating conjunction ‘and’, collective nouns, indefinite pronouns and relative pronouns.

The test paper II consisted of three types of questions such as multiple choice questions, picture description and essay writing. By analyzing the performance of participants, it was noted that their awareness in the usage of the conjunction ‘and’ is quite good since 90% of the participants were capable choosing the correct answer and further there were not any noticeable errors with the use of the conjunction ‘and’ in relation to number agreement in question no.2 and 3 where they had to produce language in written form.

However in relation to the use of different types of nouns according to the number agreement rules, it is clearly understandable that the participants’ understanding in the use of nouns is varied. For instance, in the section where multiple choice questions were provided, it was noted that 93% of the participants were able to choose the correct answer which indicates that majority of them have a fairly good knowledge on the use of plural nouns as a title where the verb is conjugated in the singular form. Nevertheless, only 16% was able to identify the correct use of relative pronoun and only 7% was able to select the appropriate form of the verb in relation to the number agreement of collective nouns. Further in the sections where the learners had to produce language, in the essay writing section, 60% of the errors were based on the use of nouns whereas in the section where they had to describe a picture, 24 % of the errors were made based on the use of nouns and it is important to note that all the errors made in relation to the use of nouns in number agreement have

been based on the use of indefinite pronouns. Further as a whole, 76% of the errors have been made in relation to the subject verb agreement errors in the picture description section and 32% of the errors in the essay section have been made due to subject verb agreement errors as well.

CONCLUSION

In second language teaching and learning, errors tend to be viewed negatively. Errors are usually considered to be a sign of inadequacy of the teaching and learning. However, it is now generally accepted that error making is a necessary section of learning and language teachers should use the errors with a view of improving teaching.

This study identified errors in the participants' written work, but did not stipulate reasons why these errors were made. My first recommendation is that this study be extended to investigating the origin of certain error patterns found in L2 written work.

This study also did not look into the areas that discuss the strategies the learners use to acquire and learn L2. Thus, in order to learn more about L2 writers' usage of language I would recommend that further research be conducted in this area

Finally, I concede that research of this nature is on-going and therefore no definite conclusions can be made because teaching and learning are both complex processes. While the results of the present study have given an insight into what types of errors are made by different participants and their frequency of occurrence, the findings can only be considered as suggestive and I am hopeful that the findings would benefit both the learners and the world of academia.

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An analysis of Visionary Leadership in Sri Lankan University Education through Modern Leadership Theories: A case study of Rev. Welivitiye Sri Soratha Thero

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Abstract

Rev. Welivitiye Sri Soratha Thero, the founding father of the Vidyodaya University⁷; known as University of Sri Jayewardenepura today contributed to the success of the Sri Lankan education system and language and culture of Sri Lanka. He took leadership to create many changes in the educational system in Sri Lanka especially in terms of Higher Education. Through his leadership, he was able to cater to the majority of the Nation and to preserve the identity of the country and its people. It is mentioned in the Mahavansa that the Vidyodaya University under the guidance of Rev. Welivitiye Sri Soratha Thero provided students with the facilities of learning subject areas such as “Business Administration”, and “Public Administration” at the University. These introductions to a former Pirivena were seen in the negative light in 1960. However, it has benefited many generations and is still in use in the University. Similarly in creating a University out of a Pirivena in 1959 he was able to continue the work of Rev. Hikkaduwe Sri Sumangala Thero providing the Sinhalese an opportunity to gain a recognized education. He opened the doors not only to the Sinhalese but also to the Tamils and the Muslims by later introducing the Tamil Language. His foresight of identifying needs and the ability to adapt and create an environment that will facilitate such needs was one of his most significant features of his leadership. This case study was conducted for the purpose of analyzing Rev. Welivitiye Sri Soratha Thero’s leadership in a more theoretical perspective. The paper will analyze his visionary leadership through the services he has rendered for the development of education. His services to the Sri Lankan education system will be analyzed through content analysis. His visionary thinking has been praised but a case study basing his leadership qualities on modern leadership theories has not been conducted. This paper uses the method of descriptive research to analyses Rev. Welivitiye Thero’s visionary leadership through modern leadership theories and the traits within him that enable him to lead the way to make new and necessary changes. While many historically important individuals are celebrated and commemorated it is seldom that studies are conducted to discuss their services and what prompted their effective leadership, this is mainly because many believe that the methodologies used are outdated. However this paper discusses modern leadership theories that are considered suitable leadership methods for modern organizations in relation to the methods used by Rev. Welivitiye Sri

⁷The roots of Vidyodaya University can be traced back to the Vidyodaya Pirivena of Maligakanda established by Rev. Hikkaduwe Sri Sumangala Thero in 1873

Soratha Thero. Thereby the paper creates a discourse for leaders and aspiring leaders in Higher education to follow and improve.

Key words: Rev. Welivitiye Sri Soratha Thero, Transformational Leadership, Transactional Leadership, University Leaders

Introduction

The most venerable Welivitiye Soratha Thero was Chandradasa Kumarasiri Jayewardene by birth. He was born on the 23rd of May 1897 in Galle. Chandradasa became a Bikku under the name of Welivitiye Sri Soratha Thero on the 15th of December 1912. It is a known fact that Ven. Welivitiye Sri Soratha Thero had a keen intellect; he was able to study all 423 Gatha of the Dhammapadaya in a matter of days. He also was able to become the Island first facing the “Praccheena Prarambha” exam.

In 1917, Soratha samanera received his higher ordination from the Malwatu Chapter, Kandy and entered the Vidyodaya Pirivena. He was then able to receive the “Swarna Mudrika” award for the “Pracheena Panditha” Exam. Thus, having performed excellently he joined the staff of the pirivena in 1932. He was then selected for a scholarship to continue his higher studies in Kolkata.

Having completed his education and returning back to his motherland, he was nominated as the main author of the translating panel of the Pali-Sinhala Thripitaka for the 2500 Buddha Jayanthi, to which he contributed for many years. In 1936 March he was made the “Deputy Chief Preceptor” of the Vidyodaya Pirivena.

The term leadership is often perceived under various connotations, Susan R. Komives and John P. Dugan in their article *‘Contemporary Leadership Theories’* states that “for some, this represents an internalized identity, shared process, or civic engagement grounded in experiences as social activities with development mentors, or from positive group experiences. For others, the term may elicit a more negative interpretation associated with abuses of power, positionality, or an interpersonal focus on end goals” (Dugan & Komives, 2010: 11).

Oxford English Dictionary defines ‘leadership’ as the action of leading a group of people or an organization (Oxford Dictionary of English, 2010) (Placeholder1). Though the definitions of leadership tend to vary in different fields the premise still refers to the basic definition proposed by the Oxford English Dictionary. Dr. Henerath H.D.N.P. Opatha during an informal interview

on the subject matter provided a more acronymically justified definition for leadership in terms of Organizational Behavior through a traits analysis.

He states that the letter ‘L’ stands for ‘liberal’ which may indicate that a leader is both general and not politically inclined; ‘E’ as ‘efficient and effective’ thus a leader is able to achieve set goals with efficient and effective use of resources; ‘A’ as ‘active and assertive’, a leader will be physically active and would take action, s/he will also be forthright; ‘D’ as ‘dependable’, a leader is trustworthy, there is consistency between his behavior and ideals; ‘E’ as ‘educated’ a leader would have an above average education; ‘R’ as ‘responsible’, a leader will take decisions and will be responsible for its outcome, he will not betray his subordinates; ‘S’ as ‘sensitivity’ leadership is not complete without subordinates, therefore a leader must be sensitive to the needs of his people; ‘H’ as ‘honesty’, a leader will not indulge in falsehood, he will fulfill promises and will be consistent in his preaching and behavior; ‘I’ as ‘Initiative and Intelligence’, He will not hesitate to begin what is needed, he will possess both cognitive intelligence which will aid him in rational thinking and emotional intelligence which will help him control his emotions while understanding others; ‘P’ as ‘patience’, ‘persistence’ and ‘power’ (Opatha, 2018).

The above explanation brings together a more holistic explanation of leadership. The above mentioned characteristics are part and parcel of any theory of Leadership. These characteristics will be seen in Rev. Welivitiye Sri Soratha Thero’s character through his many contributions to language and education. In our analysis of Rev. Welivitiye Sri Soratha Thero, we will be looking at a few modern leadership theories such as Charismatic leadership, Transformational leadership, Moral leadership, and Strategic leadership.

Before plunging into the discussion of modern leadership it is apt to discuss why they were chosen in order to examine Rev. Welivitiye Sri Soratha Thero’s leadership. In the early 20th Century leadership theories such as the ‘Great man Theory’ and “Trait theory” were more focused on the leader and his role; the models often linked the leader with the extraordinary. However the theories of leadership and the models of leadership dramatically changed with the publishing of ‘*Leadership*’ by Macgregor Burns. His publication highlighted the relationship between the leader and the followers (Dugan & Komives, 2010). Thus in order to examine the true extent of a leader’s role the paper will examine a few modern leadership theories.

Charisma is a natural personal characteristic, it refers to the ability to attract and inspire subordinates, and it is a form of interpersonal attraction. A charismatic leader would have high self-confidence, a clear vision and extraordinary behavior. S/He would use leadership styles of envisioning a desired future, energizing his/her subordinates to act towards gaining such a future and enabling subordinates to face challenges (Opatha H. , 2015).

It is mentioned in '*Charismatic leadership and organizational outcomes: The mediating role of employees' work-group identification*' by Lavinia Cicero and Antonio Pierro "Charismatic leaders are able to formulate and articulate inspirational vision and behaviours that foster an impression that they and their mission are extraordinary" (Cicero & Pierro, 2007)

Transformational leaders are agents of positive change. This form of leadership empowers and inspires followers to achieve a collective goal. Positive change is a factor that drives a transformational leader; s/he sees the need to change an existing organizational framework by generating a higher organizational effectiveness.(Opatha H. , 2015) S/He would introduce innovative ideas and concepts that will be beneficial for the future. A transformational leader would possess charisma but his/her characteristics will not depend solely on it. (Johnson, 2007)

A transactional leader is a person who would opt for stability. Stability is essential continue day-to-day functions smoothly. Stability according to Opatha (2015) is related to 'routine work related transactions'. It is a quintessential fact that would encourage followers to do routine but necessary tasks successfully so as to hold an organization together (Opatha H, 2015).

Moral leadership concerns itself with the right and wrong of a transaction. S/He would consider the realities of greed, competition, productivity, etc., yet s/he would strive to do what he believes is the rightful action. (Daft, 2008)

Strategic leadership considers the complexities of both the organization and the environment. Its role is more akin to the top level of management therefore; their relationship with the said environment is superior for the purpose of gaining a sustainable and competitive advantage from the environment (Moorhead & Griffin, 2009).

Proper leadership within institutions of higher educations is one of the key components that aid the success of the said institution. There have been several researches conducted on this regard

such as *Leadership in Educational Administration: Concepts, Theories and Perspectives* by Saeid Farahbakhsh, *Analysis of Head of Departments Leadership Styles: Implication for Improving Research University Management Practices* by Zaidatol Akmaliah, LopePihie, AmirSadeghi and HabibahElias, *Competencies for effective leadership in higher education* by Marion Spendlove.

Similarly there have also been several case studies that look at various leaders through theories of leadership, for the purpose of this study the authors have considered the following research papers: *Leadership change: A case study analysis of strategy and control systems development* by Alaudin Ahmadasiri, Zarifah Abdullah, and Marhaiza Ibrahim, *Toward post heroic leadership: A case study of Gezi's collaborating multiple leaders* by Hande Eslen-Ziya and Itr Erhart *Creating Effective Leaders Through Situational Leadership Approach* by M.A.W.I. Easther and *Advising Jay: A Case Study Using a Situational Leadership Approach* by Alan C. Lerstrom and Luther College. These studies have been examined as to understand various leadership styles and methods of analysis.

These papers look at the effective styles of leadership that help in achieving goals. Similarly this paper analyses the leadership styles used by one of the most popular leaders in the history of Higher Education: Rev. Welivitiye Sri Soratha Thero.

Methodology

Rev. Welivitiye Sri Soratha Thero was an iconic leader at the time. He took the challenge of providing a higher education institution to an independent Sri Lanka when the only other institution of Higher education in the country was reluctant to offer Sinhala medium instruction. While he has taken a leadership position to provide many services to the country, his contribution to higher education is significant and its results are visible even today. Thus it is evident that he has made a lasting impact through his leadership, through this paper the personal characteristics, and what fueled his ideology will be analyzed.

The country saw the demise of Rev. Welivitiye Sri Soratha Thero in 1963. Thus the case study is built upon the literature written by personnel who have associated Rev. Welivitiye Sri Soratha Theo and historical literature of the University of Sri Jayewardenepura. This descriptive research analyses the content of books such as the *Sri Soratha Sahithyaya* by Hikkaduwe Revatha and Hikkaduwe Uditha, *Vidudaya Sambawana*, a compilation by Sunil Ariyaratne, *Sri*

Jayewardenepura Vishwavidyala Wruthantha by Sunil Ariyaratne, the *Socio-cultural background to the evaluation of Vidyalandara and Vidyodaya Universities* by Ananda Guruge and *Welivitiye Sri Soratha Prathyawalokanaya etc.* While the authors are aware that these literature adopts a persuasive writing style apt for commemoration this study uses the facts and some of the sentiments expressed to analyze his method of leadership through the distinct actions taken for the development of Higher Education in Sri Lanka. The authors have applied several modern theories of leadership so as to analyze Rev. Welivitiye Sri Soratha Thero's leadership role in terms of his services for the development of higher education in the country, thereby creating a discourse of leadership styles that is apt for leaders in the field of education in the country to use and apply.

The paper speaks of a host of leadership theories which has been studied from various titles. The authors have also taken measures to interview one of the leading specialists in subject of Human Recourses, Prof. H. Opatha about leadership and organizational behavior. Rev. Prof. Vijithadhamma too was interviewed regarding a language theories and how certain language elements are symbolic of personality.

Analysis

Many of the modern leadership styles fall in place with the tactics taken by Rev. Welivitiye Sri Soratha Thero, it was identified that many of these theories have overlapping characteristics. Therefore, after careful analysis the paper has selected Transformational and Transactional leadership as theories that capture the extent of his leadership as his goal was to create positive change through stability. It is interesting to note that though many theorists have carefully segregated these two theories of leadership, they both collide in union at certain sentiments. The two features that are dominantly discussed in this paper: 'Positive change' and 'stability' are found in both theories in unison, yet the paper has attempted to provide the theories certain individuality prior to its collision that can be seen as the paper proceeds.

These elements were the foundation of the services rendered by Rev. Welivitiye Sri Soratha Thero. Furthermore these elements are what modern leadership in Higher Education should be based on. While curricular and knowledge evolves with time, it is necessary to create a lasting change that will be able grasp these changes so as to better prepare its chief stakeholders: students to serve the nation and the world.

It is the foresight and the visionary thinking of Rev. Welivitiye Sri Soratha Thero that led this paper to identify features of Transformational and Transactional leadership within him. He was foresighted in his decisions and the result was a long lasting contribution to language and education.

It is also important to note that while Rev. Welivitiye Sri Soratha Thero had many admirable characteristics and has done many renowned deeds, this paper will look at only his contribution to the higher education of Sri Lanka which also aided in revitalizing the country's mother tongue. A leader processes certain traits or characteristics within his personality to drive him towards a set goal. Leadership is the pinnacle of Human Resources. The Leader is constantly required to manage his chief resource Humans so as to ensure that his goals and targets are reached effectively and efficiently. While the authors acknowledge that these characteristics could be analyzed through trait theory, this study employs language theory as language was one of Rev. Welivitiye Sri Soratha Thero's skills and the basis of his services to education.

Thus having established the leadership traits that the case study would utilize it is apt to discuss about the two theories as they will be the essence of this case study.

Transformational leadership as defined by Opatha is the "Ability to recognize the need for positive change, to create a vision to guide that change, and to execute the change effectively" (Opatha H. , 2015). It is his view that that a transformational leader will inspire his followers to achieve progress and would expect go beyond expectations. A Transactional leader has the "ability to focus on clarifying duties, roles and responsibilities to subordinates and providing them with rewards and punishment contingent on job performance" (Opatha H. , 2015). The main focus of a Transaction leader is the stability; he would set targets and promote followers to reach the set targets. (Opatha H. , 2015).

A transformative leader through his leadership inspires his followers to become their better selves. Their aim is to create a positive change (Johnson, 2007). According to the characterization of Transformational leadership by Bass et al; the first point of characterization 'Idealized influence' discusses how "Transformational leaders become role models for followers who admire, respect and trust them. They put followers needs above their own and their behavior is consistent with the values and principles of the group" (Bass, Avolio, Jung, & Bernson, 2003). Transactional leaders

while motivating the followers to reach the end goal of the institution plays little attention to the goals of the follower (Opatha H. , 2015).

Thus though Transactional leadership concerns itself with stability it neglects the development of a follower, who will succeed the leader after he steps down from the leadership position. Developing the follower while continuously working to reach the set goal or surpass the goal will in turn make the follower an effective candidate to take the place of the leader so that the institution can continue its path to success.

According to Opatha's description the culture these two would create is either an adaptive and flexible environment or a rigid and bureaucratic environment. Each environment has its merits but its effect could be made more effective by utilizing selective features if both theories of leadership to establish both positive change and stability.

This concept is taken into consideration by Bernard Bass. He questions Burns' belief that most leaders portray either transactional or transformational characteristics. He therefore further developed Burns' Transformational theory as Transforming theory suggesting that it consists of both characteristics of transformational leadership and active elements of the transactional leadership such as the contingent reward and management by exception(Johnson, 2007).

In the following sections of the paper it will be made evident that Rev. Welivitiye Sri Soratha incorporated the best features of Transformational theory and Transactional leadership in creating in creating a sustainable educational system and providing a lasting development to the then deteriorating Sinhala language.

The paper has so far discussed the premise of the theories, the proceeding paragraphs will portray the services rendered by Rev. Welivitiye Sri Soratha Thero and his leadership in creating a positive change by said services that aided to uplift the education in Sri Lanka, the following section 'Discussion' will look at these services through the theoretical lenses.

As a leader in charge of the wellbeing of students, he had a very open mindset. The present statue of Rev. Welivitiye Sri Soratha Thero that greets those who enter the University was built in a manner that would highlight this feature in him. Rev. Welivitiye Sri Soratha Thero is portrayed

reading a book with his legs crossed and without a ‘Muthu Kudaya’ over his head. This stands to symbolize his revolutionary thinking and open-mindedness.

Rev. Welivitiye Sri Soratha Thero endorsed the argumentative nature within students. As mentioned in the university anthem of the University of Sri Jayewardenepura “Ayuthiyedi Viwadeshili Asathyayedhi Vicharashilee” (Argumentative ant moments of injustice and critical at moments untruth). He endorsed radicalism in students, however he stated “Students should be radical, but they should also work with intelligence” (Wanarathana, 2013).

Rev, Welivitiye Sri Soratha Thero during his time proved to be more than an intelligent scholar. His admirable organizational skills and dedication helped him build a university that was large enough to provide for the ever multiplying students. He had a keen sense of practicality. He avoided spending on carvings and instead focused on using the expense saved on creating a practical environment for the students (Wanarathana, 2013).

Vidyodaya Pirivena which became Vidyodaya University in 1959 it had three faculties; Arts (Economics, Geography, History, mathematics), Buddhism (Buddhism, Indian Philosophy, Western Philosophy) Languages (Eastern Languages, Pali, Sanskrit, Sinhala, Western Languages). Later however a few more departments were added to the Faculty of Arts such as Archeology, Education, Astrology and Ayurveda. Psychology was added to the Faculty of Buddhism. In 1960 The Faculty of Applied Sciences was created with departments of Biology, Chemistry and Mathematics. In the same year Business and Public Administration was introduced to the Department of Economics. (Wijetunga, 1984)

He was the guiding hand behind providing higher education for women. As a solution for the increasing demand for education for women he managed to gain approval to provide lectures to female students in an institution parallel to Anula Vidyalaya without a special fee. He was also able to lead the way to the creation of External degrees that allowed individuals to gain an education regardless of gender barriers (Wanarathana, 2013)

In establishing Vidyodaya University, he was catering to the need of many Sinhalese students who have received preliminary education in Sinhala. This was a vacuum created by the Government of S.W.R.D. Bandaranayke who brought forth a reform in claim of revitalizing the Sinhala Language. However, though Rev. Welivitiye Sri Soratha Thero facilitated towards this need he also provided

instruction in Tamil medium so as to cater not only to the Sinhalese but for the Tamils and Muslims as well. He made English a compulsory subject which every student must pass so as to be on par with educated individuals of the world.

Not all of these changes were welcomed, many believed that subjects like Business and Public Administration was not suitable for the Pirivena culture, yet, Ven. Welivitiye Sri Soratha Thero identified that the Pirivena culture was saturating and was on a mission to create a positive change to cater to the national need. His goal was to serve the nation and the pressing needs of the nation at a time when the country was lagging behind after many years of colonial rule.

The changes he brought were revolutionary, he was not just catering for the present, he was also catering for the future as well. The Departments of Public Administration and Business Administration grew to be a Faculty that is considered as the best Faculty of Management Studies and Commerce in the country.

To become a Transformational leader, to be the agent of positive change and stability he would need certain tools that would assist him in guiding his subordinates through the decisions he made. Rev. Welivitiye Thero was able to identify a person's talents and had an inbuilt sense of making use of the talents he saw in individuals for the reaching of the ultimate goal as well as to improve the person.

Developing a University is a difficult task that requires immense assistance. His character enabled people to reach out to him. It is mentioned in one of the articles that he possessed the ability to gain the service of others by effortlessly reaching out to them. The event of converting the Vidyodaya Pirivena to Vidyodaya University was not a single handed effort. It was the effort of individuals such as Dr. Ananda Guruge, Mr. D.J. Kumara and Prof. Senerath Paranavithana, yet they were just scattered talents that came under one common goal under the leadership of Rev. Welivitiye Soratha Thero.

Being the hand behind the infamous the *Sri Sumangala Shabdakosaya*, and the translation of the *Thripitaka* to Sinhala it is evident that Rev. Welivitiye Sri Soratha Thero had a firm grasp of language. In order develop the Nation's mother tongue that was given a secondary position during the colonial era, he with the support of the government took on responsibility of creating the dictionary so that the language can be preserved for the future generations.

Martin Wickramasinghe in his article on Rev. Welivitiye Sri Soratha Thero, *Soratha Nahimiyange Aaswada Wngnanaya* in *Sri Soratha Sahithyayaby* Rev. Hikkaduwe Revatha and Rev. Hikkaduwe Uditha states that that Rev. Welivitiye Sri Soratha Thero has a gained a firm knowledge of language through his learning and critical analysis of ‘shila lekana’, he states that this can be clearly seen in his *Sumangala Dictionary* and other translations. He stated that he had an admirable sense of how to use components of language in his work (Wickramasinghe, 1964).

He was versatile in a many languages that include: Sinhala, Pali, Sanskrit and English. Thereby it is apt that his character is viewed through the very elements of language, Nirukthi and Wyakarana. Nirukthi or Etymology looks deep into the formation of the word. A personification of this component will imply that a person who has the capability of understanding people and identifying their capacity and delegating tasks that were most appropriate for them (Vijithadhamma).

It is mentioned in the section: *Venerable Welivitiye Soratha: An Inspiring Scholar Monk with a flair for action* in *Welivitiye Sri Soratha nahimi Prathyawalokanaya* that Ven. Welivitiye Soratha Thero was able to assume that the author had the capacity to translate the Sri Sumangala Dictionary to English. (Sthivira, Sumana, Palihapitiya, & Kumarapeeli, 2013) This implies that having understood the capacity of how his Dictionary can aid the society he reached out to the author who according to the article was introduced by a mutual friend. The author states that this request was made while he visited Rev. Welivitiye Sri Soratha Thero at the hospital a few days prior to his demise.

The Wyakarana or Grammar component of languages brings together individual words to make meaningful sentences. Rev.Prof. Medagampitiye Vijithadhamma Thero believes that only person who has both of these personified components of language as qualities can properly govern a set of individuals in such a manner that they would be motivated to achieve the set goal. (Vijithadhamma)

Thus these two features of language were two personified traits that were ever present within Rev. Welivitiye Sri Soratha Thero. They formed a sense of balance and aided him in his leadership towards creating a stable and positive change.

As mentioned earlier his service in creating Vidyodaya University was a combined effort of some of the greatest minds in the country at the time. Yet these minds alone could not have heaved such

a task, their true potential was realized through the leadership given by Rev. Welivitiye Sri Soratha Thero.

Discussion

Rev. Welivitiye Sri Soratha Thero is considered a leader who identified the needs of the time and acted accordingly to fulfill the needs of the nation. The Vidyodaya Pirivena established by Rev. Hikkaduwe Sri Sumangala Thero in 1863 revitalized the dying culture of Pirivena education. The Vidyodaya Pirivena flourished for many years and Rev. Welivitiye Sri Soratha Thero was appointed the Deputy Chief Preceptor in 1936. However due to the failing health of the Chief Preceptor Baddegama Piyarathna Thero, he was entrusted with many duties of the Chief Preceptor. Upon the death of Rev. Baddegama Piyarathna Thero in 1958, Rev. Welivitiye Sri Soratha Thero was entrusted with a responsibility that was the need of the nation.

This refers to the establishment and the conversion of the Vidyodaya Pirivena to Vidyodaya University. The Pirivena Culture of the country can be dated back to 24 centuries, yet this long established and developed tradition was slowly dismantled during colonization and revived as mentioned by Rev. Hikkaduwe Sri Sumangala Thero. During the years that followed 'The University of Sri Lanka' was home for those who sought higher education within the country. The medium of instruction was English. However, in 1945 the preliminary education was made Sinhala and in 1956 the National Language was declared to be Sinhala. Thus gaining education from the 'The University of Sri Lanka' was limited to a fair few. Therefore, the need of the Nation at the time was to create an education institution where higher education in Sinhala was possible. It was this need that Rev. Welivitiye Sri Soratha Thero catered for. (Aandagama, 2015)

Thus, it is evident that Rev. Welivitiye Sri Soratha Thero saw the need of creating a positive change that will facilitate many students at the time, this falls in line with the characteristics of a Transformational leadership

Rev. Welivitiye Sri Soratha Thero according to many character portrayals showed a keen understanding of the intricate needs for a properly functioning Institute of Higher education. His aim was not just to create an environment that befits the present needs but to also create an environment that will cater to the needs of the generations yet to come. His methods and initiations were highly criticized yet he put the needs of the nation before his.

He displays a feature of transactional leadership by making the education of English by undergraduates compulsory. Here he wished to provide the students and the institution with a stable future in a world where he knew English is the language of opportunity. He further went on to provide instruction by Tamil medium within the University thus enabling Muslim and Tamil students of the nation to gain higher education (Ariyaratne, 2009). These aspects ensure that the students of the University were exposed to tools that will aid them to be effective citizens and leaders who will help develop the nation.

In the Speech made by Professor Malini Aandagama, Former Head of the Department of History and Archaeology of University of Sri Jayewardenepura and the Secretary of the Mahavansa Editorial Board of the Department of Cultural Studies on the 17th of June 2015 for the Commemoration of Rev. Welivitiye Sri Soratha Thero it was mentioned that Rev. Welivitiye Soratha Thero in proposing the introduction of a series of subjects (Public Administration, Business Administration, Modern Science) that were deemed unsuitable at the time has expressed his views on the type of graduate he wishes to create.

“It is our mission to present the society with intellectual and not merely to breed graduates. If one endeavors to transform this sacred abode to a place where degrees are sold, or to a place in which student are given degrees in a mere mechanical fashion that will only lead the University as well as the country to be dragged in disgrace. If our graduates are not proven with the expected intellectualism that their degree claims them to possess, people will indubitably arrive at the conclusion that our University is a ‘store’ where degrees are ‘sold’. Thus everybody affiliated to the University should keep in mind not to engage in any act that will undermine the quality of our degree and the research work” (Aandagama, 2015).

Thus he displays a clear vision of the goal. Johnson in his chapter ‘*Normative Leadership Theories*’ in his book ‘*Meeting the Ethical Challenges: Casting Light or Shadow*’ says that transformational leaders “Use persuasive appeal based reason” in their leadership

His initiatives were not limited only to the education. A university is not merely what is taught and learnt, though they are the fabric of it. For the education to take place a structure should be built

an excellent foundation should be laid so as to ensure that infrastructure and administration will aid rather than obstruct the process of education.

This could be seen clearly with reference to the construction of the initial buildings of the university. The structure of the university was built with precision, having travelled to India to gain an understanding about University structures. After careful examination Rev. Welivitiye Sri Soratha Thero was able to create an auditorium 12,000 square feet in time for the very first convocation, this hall is used even today by the students of the University of Sri Jayewardenepura (Ariyaratne, 2009).

During the building of the Vidyodaya University in Maligakanda, Rev. Welivitiye Sri Soratha Thero had very limited resources. Dr. Praneeth Abeysundera, Senior Lecturer of The Department of Sociology, University of Sri Jayewardenepura in his commemoration speech given at the 55th Commemoration of Rev. Welivitiye Sri Soratha Thero stated that he did not waste a single grain of sand, a single brick or even a little cement. He stated that he utilized the land in a practical method devoid of any sort of wastage. (Abeysundara, 2018).

Rev. Welivitiye Soratha Thero is known for his massive contribution for the Sinhala Language and the country's higher education. Any leadership role involves working with a group of people who will be the primary resource to accomplish a task. Proper management of people and resources enable one to accomplish the task and reach the ultimate goal in an efficient manner.

He can be considered as one of the most inclusive leaders in Sri Lanka. Having gained the majority of his education from the Buddhist doctrine, he did not hesitate to learn the values explained in others. He urged his followers to take heed in educating themselves in a similar manner.

A significant feature in his religious teachings is the presentation of facts to benefit the current society; yet he never distorted Buddhist teachings. Sri Soratha Thero has highlighted the importance of learning religion with a shrewd and balanced judgment while being on par with the teachings of other religions. In a document written for the 1947 Gunasena Vesak Programme he has mentioned that: "wise Buddhist priests should enhance their knowledge and religious perspective by perusing documents of other religions such as the Holy Bible and the Koran". (Aandagama, 2015)

Leaders, according to Opatha in his book *Organizational Behavior* are a group of people essential for stability and positive change (Opatha H. , 2015). It is his view that a leader should be able to motivate his followers to obtain his goal.

Thereby, it is necessary to identify Ven. Welivitiye Sri Soratha Thero's goal behind his dedication. Rev. Welivitiye Soratha Thero like Rev. Hikkaduwe Sumangala Thero both began their journey of Service to the country at a time when Sinhala as a language was fast depleting. It was Rev. Welivitiye Sri Soratha Thero's view that:

The language of a community is an indicator of the development of that community. In the present world there are many developments; developments did not come through the community known as Sinhalese. Therefore these developments cannot enrich the Sinhala Language. It was his belief that if Sinhalese are to move with the pace of the world, it is necessary to coin words to befit these developments of the world so that the Sinhalese too will have a language that will help them understand the wonders of these developments. (Translated, Sri Soratha Sambawana 2013).

His intention was to provide a nation which was falling behind a chance to reach its true potential. This was made impossible at the time because there weren't higher education institutes at that provided students education in the county's national language which has become the language of instruction in Schools due to the Swabasha act of 1956. Identifying this national need he took initiative to create a positive change and thereby develop a group of people who were worldly enough to tackle the changing world.

Conclusion

Transformational Leadership is the "Ability to recognize the need for positive Change, to create a vision to guide that change and execute the change effectively." (Opatha H. , 2015). Opatha also states that the leadership of this sort of personality will encourage the followers to do exceptional things to achieve the goal. Transactional leadership as Opatha defines is the 'Leadership that is needed for stability' (Opatha H. , 2015). According to Burns in his seminal text, *Leadership*: "Such

leadership occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and mortality,” (Burns, 1978). Many of the Modern Leadership theories share similar characteristics and bring the role of the follower into the discussion. In the case of Transformational Leadership and Transactional leadership there is an overwhelming desire within the leaders to guide the followers towards the goal. The difference between the two theories lies in the intentions within them.

A Transformational Leader will concern himself with positive change (Opatha H. , 2015). He will inspire the follower to work towards this goal while encouraging them to surpass the goal. A Transactional leader too will encourage the followers to reach a goal. This may not necessarily be towards a positive change but he will set target and encourage the follower to reach the set target. The methods used would be methodical and rigid, but with the positive factor that the path towards the target will properly plotted and thereby easy to follow.

Higher education is necessarily the task of educating, motivating and moulding an influx of young adults to be responsible individuals who will be future leaders. However it is also an institution that functions under a National agenda using the funds provided by the government. It hosts many students, educators and other individuals. It is a multitude of systems that must work as cogs of clockwork to function smoothly. Thus the incorporation of both methods of leadership is suitable in this endeavor.

It could be clearly seen in many instances of his character portrayals. Rev. Welivitiye Sri Soratha Thero was able to motivate people such as Ananda Guruge into achieving the immense task of bringing a Pirivena to the status of a University. He was catering to a present need but in his desire for longstanding stability he was also able to see the need of students gaining a basic knowledge of English and creating avenues to teach modern subjects. The motivation or creating positive change can be clearly seen through the following translated passage taken from *Sri Soratha Sambawana*

We once discussed which tradition should be used in forming the Vidyodaya University. We wanted to create a university that will aid the development of the Sinhala-Buddhist culture⁸ and will facilitate the country’s needs. Though there were some who had no

⁸Rev. Welivitiye Sri SorathaThero embarked on a journey to uphold the Sinhala culture because it was a time when Sinhala and

analytical knowledge and those who wished to get their degrees in an easier manner said nonsensical statements about it, those who had a working knowledge of the world were aware that it was difficult to gain a higher education befitting the modern times without the knowledge of English. Therefore we took measures to teach English to everyone who was studying in the University from the time of its inception. We did not object to create new methods in our university that were not found in Universities in other parts of the world, nor were we obliged to include all methods found in those Universities here” (Translated, Sri Soratha Sambawana, 2013).

Thereby, it is evident both by analysis and the results of his efforts that is enjoyed by many today, that Rev. Welivitiye Sri Soratha Thero took initiative to create a positive change and laid a stable system that lead to the further and continued development of education and language of the country. His leadership resulted in the development of an entire nation.

In close examination of his character it is visible that although Rev. Welivitiye Sri Soratha Thero uses features of both Transformational and Transactional leadership, his method of leadership is more akin to Transformational leadership. This is enabled through his inbuilt personified traits of language; Nirukthi and Wyakarana. However, this is not to say that there are no features of Transactional leadership in his method of leading. He incorporated the main and most dominant feature of Transactional leadership as he laid down a stable system that was able fully function after his demise but this too was influenced by Transformational Leadership. By the time of his demise in 1964 he has motivated and trained Dr. Ananda Guruge and Mr. Kumarage by example to continue the work of developing the university and thereby education in the country.

The University of Sri Jayewardenepura, the ultimate output of the Leadership of Rev. Welivitiye Sri Soratha Thero, today is the largest university in terms of student population. Keeping true to the legacy of its founding father the University has expanded its knowledge base by creating new faculties such as the Faculty of Medicine, Faculty of Technology, and Faculty of Engineering. The

the Sinhala culture were being downtrodden in a society which was holding on to the remnants of a colonial past. He was also catering to the need created by the Swabasha act of 1956 which generated students who were intelligent but was not given the tools to handle the available higher education avenues at the time. While he took leadership to cater to these students, he also made sure that the students were given the chance to learn English by making it a compulsory course. He also was insistent on including Tamil medium which aided both Tamil and Muslim students (Mukarji, 1964)

expansion has resulted in providing the country with youth who is armed with the most updated knowledge so as to serve the country.

Though historically celebrated individuals such as Rev. Welivitiye Sri Soratha Thero is often appreciated and remembered, their leadership, their characters are seldom looked analytically. Many of these individuals begin from humble backgrounds no different to more than 90% of the population of the world. Yet through their lives they make decisions to lead, to make a change. Identifying the reasons behind their shift of personality and how they managed to achieve great feats aids the development of the future. Thus through this study aspiring leaders no longer need to reinvent the wheel but follow in the footsteps of those who have achieved a great deal. Though their success may have been decades before, as this study clearly portrays their methods benefit even the most modern of theories and therefore modern times.

The Transformational and Transactional theories are widely perceived as ‘ideal’ leadership methods for modern leadership. Yet Rev. Welivitiye Sri Soratha Thero used a combination of these theories when he took up the challenge of creating a positive Change in the Higher Education of Sri Lanka.

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Critical Success Factors Affecting E-Procurement Adoption in Public Sector Organizations in Sri Lanka

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Abstract

E-procurement is one of the ICT applications utilized in both public and private sector organizations. Many countries all over the world benefited through the government procurement using electronic means as it enables the government to offer more convenient and widespread accessible government services in an efficient, cost-effective and participatory manner. The main purpose of the study are to identify the most significant factors which affect on public sector e-Procurement adoption in Sri Lanka; to identify the level of using electronic methods in procurement function of those organizations and to identify the barriers in adopting e-Procurement in those organizations. The data was collected through a structured questionnaire and interviews were conducted with officers who involved in the procurement function of selected public-sector organizations. The population of the study comprises of the national level public sector entities; Ministries, Departments, Statutory Boards and Public Companies. The sample of 114 officers was selected as key informants based on stratified random sampling method. Both qualitative and quantitative methods were utilized in this study. Quantitative research approach was utilized to identify the determinants of successful e-procurement adoption and the level of e-Procurement usage. The qualitative approach was employed to identify issues in e-Procurement adoption. It was found that Relative Advantage, Compatibility, Complexity, Top Management Support, Employee Knowledge and skills and Supplier Readiness are statistically significantly (at $p < 0.01$) affecting e-Procurement adoption. Those variables altogether explain 66.2% of variance in e-Procurement adoption in the public sector organizations in Sri Lanka. Among them, Top Management Support and Relative Advantage can have 70.2% and 60.2% impact on successful e-Procurement adoption. Weak procurement guidelines, Weak Legal framework and ICT infrastructure, and Lack of IT knowledge and experience of employees are the present barriers to e-Procurement adoption in national level public sector organizations in Sri Lanka. Policy recommendations for the e-Procurement adoption are proposed in the paper.

Keywords: e-Procurement, e-Procurement adoption, Critical success factors, National level public sector organizations

1. INTRODUCTION

With the globalization, the usage of Information and Communication Technology (ICT) has been intensified in both public and private sector organizations. In competitive business environment, organizations either in government or private ownership seeks to maximize capabilities and resources properly to increase productivity. In this regard, ICT facilitates to explore new business opportunities while accelerating competition among businesses all over the world.

E-Procurement is one of the latest technologies utilized by modern day organizations in order to reduce time, cost and effort (Baternburg 2007). E-Procurement has evolved into the use of electronic technologies to streamline and enable procurement activities of an organization. Many countries all over the world have gained benefits through the application of e-Procurement systems into their business operations.

Sri Lanka in its development agenda identifies, ICT as a key driver in economic development. However, e-Procurement is a new phenomenon to the most government sector organizations in the country. Moe (2004) mentions that in contrast to the business organizations, the adoption of e-Procurement systems by the governments are more influenced by political and institutional commitments (Baternburg 2007). Different studies have suggested that the real challenge of the public e-Procurement is not technical but managerial (Ramanathan & Somasundaram 2004). Hence, adoption of e-Procurement in the public sector is challenging.

2. IMPORTANCE OF THE STUDY

The government is the largest procurement agency in any country which needs to fulfil the expectations of citizens by providing goods and services. Thai (2001), mentions public procurement is an important function of the government where it needs to satisfy requirement for goods, systems and services in a timely manner. Value for Money (VFM) is the core principle governing public procurement and is supported by the underpinning principles of efficiency and effectiveness, competition, accountability and transparency, ethics and industry development (Commonwealth Procurement Guidelines (2005) as cited by Raymond 2008).

Sri Lanka as a developing country, procurement is one of the key functions of government as well as a key determinant in the delivery of quality services to the citizens. According to Ekanayaka

(2015), public procurement in Sri Lanka is one of the key areas of the last regime where there were serious lapses costing billions of dollars and damaging the whole Sri Lankan economy, environment and society. This statement clearly illustrates the magnitude of the procurement function for the whole economy. Ekanayaka (2015) mentions that the operational management in procurement is in a feeble state in Sri Lanka due to lack of good governance. Liyanage (2005) discussed several weaknesses of the Sri Lankan Government Procurement System such as extensive delays in contract awards and non-compliance with rules and regulations (cited by Samarasingha 2009). An interview conducted with Algama (2017) quoted that “Some of the contracts appear to have been awarded without observing the fundamental principles of governance in procurement such as transparency, accountability and VFM”. Verité (2016) shows that introducing an efficient procurement system will empower the businesses and reduce wastage in public funds in public procurement in Sri Lanka. These factors highlight the importance of moving into automated systems of procurement function in Sri Lanka.

3. BENEFITS OF THE STUDY

The findings of the study will be important for the heads of public sectors organizations to identify the most influential factors that determine e-Procurement adoption in public sector organizations in Sri Lanka. Further, the findings could be taken as inputs to the policy decision making process.

The findings of the study will add new knowledge to the existing literature as there is no research related to information technology adoption theories to determine e-procurement adoption in Public Sector Organizations in Sri Lanka.

4. OBJECTIVES

The research is sought to achieve the following objectives;

- i. To examine the level of e-Procurement usage among selected public-sector organizations in Sri Lanka
- ii. To determine the critical success factors in the adoption of e-Procurement in public sector organizations in Sri Lanka.
- iii. To identify the challenges and barriers that face e-Procurement adoption in public sector organizations in Sri Lanka.

5. LITERATURE REVIEW

5.1. Theoretical concepts

Procurement means acquiring of goods and services and is a business-to-business (B2B) transaction. Procurement guidelines (2006) issued by the National Procurement Agency in Sri Lanka, defines Procurement as “obtaining by Procuring Entities of Goods, Services or Works by the most appropriate means, with public fund or funds from any other source whether local or foreign received by way of loans, grants, gifts, donations, contributions and similar receipts”.

Government procurement is the process by which government buys goods and services from suppliers (from both public and private) for the needs of its people (Cardapan-Antonio (2003 as cited by Samarasinghe 2009).

Government Procurement in Sri Lanka: Procurement guidelines and the procurement manual issued by National Procurement Agency (NPA) in 2006, for goods and works are the main compliances that need to be adhered in government procurement in Sri Lanka. Procurement methods used in government procurement have been specified in the procurement guidelines issued in 2006.

Weaknesses of Traditional Procurement in Sri Lanka: Government Procurement in Sri Lanka requires adhering to many rules and regulations according to the procurement guidelines issued by the National Procuring Agency in 2006. Liyanage (2005) discussed several weaknesses in government procurement of Sri Lanka as extensive delays in awarding contracts and non-compliance to rules and regulations. This has been exacerbated by frequently changing suppliers, poor monitoring, inadequate knowledge and skills, lack of expert advice and institutional support, non-availability of standard contract documents and specifications and weak contract administration. This has direct negative consequences on critical economic development (Samarasingha 2009). Delays in procurement process are the major concerns which hinder the performance of government organizations.

E-Procurement: Electronic procurement is the use of information and communication technology (especially internet) by organizations for concluding their procurement relationships with suppliers

and for acquisition of goods and services. Lusons & Gillingham (2003 cited by Samarasinghe 2009) defined electronic procurement as the combined use of information and communication technology to enhance the internal and external purchasing and supply management processes.

Electronic Government Procurement in Sri Lanka: The usage of electronic methods in procurement function in public sector organizations in Sri Lanka is at minimal level. Procurement guidelines (2006) have given few provisions to facilitate adopting e-Procurement. Any procuring entity who wishes to carry out procurement by means of electronic form has to obtain prior concurrence from the Procurement Committee. Procurement guidelines allow Procuring Entities to Publish Procurement invitations on website; to inspect pre-qualification (PQ) applications and bidding documents electronically or otherwise; to obtain clarifications through electronic media. However, electronic submissions of Bids are not allowed.

E-Procurement functionalities: Lefebvre et al., (2005) classified e-Procurement functionalities in detail considering information and transaction perspective as a part of B2B e-commerce study. As per his findings, searching for new suppliers and searching for goods and services is considered as “electronic information search”; purchasing via e-catalogues, placing and managing orders with suppliers and accessing suppliers’ goods or services database as “simple electronic transactions”, purchasing via e-auctions, e-tenders, negotiating contracts with suppliers, making payments to suppliers, accessing suppliers’ inventories and allowing suppliers to access the buyers’ inventories as “complex electronic transactions”; and sending documents to suppliers, doing collaborative online engineering with suppliers’ and tracking goods purchased during transportation as “electronic collaboration” (Hasan 2013).

5.2.Theoretical Background to the Research

This study reviewed several related theories, namely, Diffusion of Innovation (DOI) theory, Resource Based View (RBV) theory, Network Effect Theory, Institutional Theory, Path Dependency Theory and Technology, Organization and Environment Context (TOE) Framework.

Oliveira (2011) mentions DOI and TOE framework (Tornatzky & Fleischer 1990) are the most commonly used models on IT adoption at the firm level and most studies on IT adoption at the firm level are derived from these two theories. Soares-Aguiar & Palma dos- Reis (2008) explicitly relied on the TOE framework, institutional theory, and RBV theory to formulate hypotheses

regarding factors affecting e-Procurement adoption. Results of the study reveal that firm size, industry and top management support from the organizational context, information technology infrastructure, information technology expertise, B to B know-how from technological context, perceived indirect benefits, perceived success of competitors and trading partner readiness from environmental context are positively and significantly associated with the e-Procurement adoption. Teo et al., (2009) explicitly relied on TOE framework in order to formulate hypotheses regarding factors affecting e-Procurement adoption.

DOI theory, RBV theory, Network Effect Theory, Institutional Theory and Path Dependency Theory were compared with the TOE framework to eliminate the redundant variables. According to the comparison, technological context is addressed by both DOI and RBV theory. Organizational context is addressed by DOI theory, RBV theory and path dependency theory.

Mohammadi (2001) conducted a study on Ranking of Critical Success Factors for e-Procurement implementation based on thirty-five (35) previous research studies. Out of the top ten critical factors, most critical factors are synonym with the information technology adoption theories. Accordingly, Top Management commitment and Trained and Skillful employees are similar to the organizational context in the TOE framework; Security, IT infrastructure and resources are similar to the technology context in TOE framework and RBV theory.

Vaidya et al., (2006) assert that there are a number of requirements relating to the adoption of an e-Procurement system. They include technology, objectives, information, staffing and skills. Several researchers such as Birks et al., (2001), considers the determinants of e-Procurement success such as; staff training; top management support; users and buyers; selection of the actual e-Procurement system (Cited by Vaidya et al., 2006).

Mose et.al. (2013) suggested five most critical factors which affect e-Procurement adoption among large scale manufacturing firms in Kenya. Accordingly, Employees and Management Commitment is the most critical factor for e-Procurement adoption. E-Procurement success is closely related to early supplier involvement. It is important to demonstrate the proposed solution to the suppliers and discuss any necessary changes, issues, and concerns such as various options in developing and maintaining supplier catalogues (Birks et al., 2001 cited by Vaidya et al., 2006).

The conceptual framework of the study has been derived as follows.

6. CONCEPTUAL FRAMEWORK

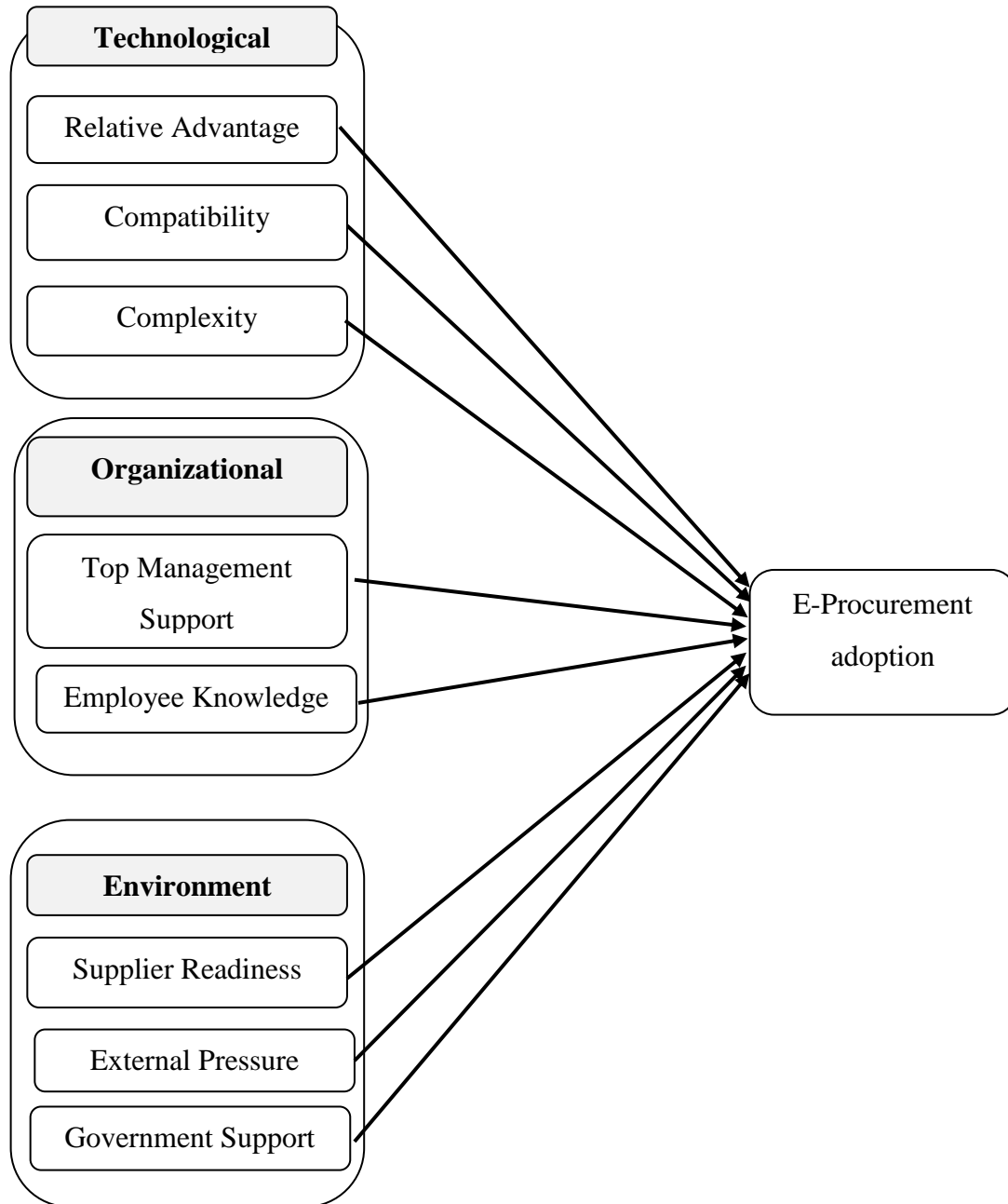


Figure 2: Conceptual Framework

7. MAIN HYPOTHESES OF THE STUDY

E-procurement adoption in public sector organizations in Sri Lanka is significantly and positively associated with the variables identified from the literature review. Hypotheses can be drawn as follows;

- H1: Higher the perceived relative advantage among the procuring officers, the more the organization will adopt e-Procurement.
- H2: Higher the perception of compatibility, the more the organization will adopt e-Procurement
- H3: Higher the perception as fewer complexes in e-Procurement technology, the more the organization will adopt e-Procurement
- H4: Higher the support from top management, more the organization will adopt e-Procurement
- H5: Higher the employee knowledge and skills on information technology, more the organization will adopt e-Procurement
- H6: Higher the supplier is willing to engage in e-Procurement; more the organization will adopt e-Procurement
- H7: Higher the external pressure, the more the organization will adopt e - procurement
- H8: Higher the government support, more the organization will adopt e-Procurement

8. METHODOLOGY OF THE STUDY

This study employed Quantitative Research Approach to achieve first and second objectives of the study and Qualitative research approach to determine the barriers for e-Procurement adoption in public sector organizations in Sri Lanka. The unit of analysis of the study was “national level public sector organizations” and the key informant is the person who entrust the duties of procuring activities of the organization. The population of the study comprised of national level public sector organizations; Government Ministries, Departments, Statutory Boards and Public Companies. 114

organizations considered as the sample which is 39% of the population. Of that, 74 responses were received with a response rate of 65%. Stratified random sampling method was used to select the sample under proportionate allocation.

Data was collected from both Primary and Secondary sources. Primary data of the study was collected through the questionnaires and from the interviews conducted with selected officials. Secondary data was collected by reviewing the existing literature. Quantitative data collected through questionnaires was analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Both descriptive statistics and inferential statistics were used for quantitative data analysis. Statistical tools such as frequency analysis, reliability analysis, factor analysis, correlation analysis and regression analysis were used. Reliability analysis used to ensure the scale of reliability. Factor analysis was used to ensure construct validity of the measures. Correlation analysis used to describe the relationship among the variables and regression analysis was used to find out casual relationships among dependent and independent variables.

Qualitative data was gathered from the interviews conducted with the officers who are directly involved in the procurement function of the organization and through the questionnaires. Ten structured interviews were conducted to avoid biasness in responses. Open ended questions were asked form the interviewers to obtain the true view of the existing phenomenon. Collected data was recorded and sorted into meaningful categories. The results were interpreted and reviewed with the co-author to avoid ambiguity and to avoid influencing the biasness. Content analysis employed to analyze data to identify the basic patterns and themes related to issues of e-procurement adoption.

9. VALIDITY AND RELIABILITY OF MEASURES

The dependent variable of the study is the e-Procurement adoption among public sector organizations in Sri Lanka. All independent variables and dependent variable were derived from the literature and measured by using five-point Likert scale and asked them to answer each item to get the respondents' preference from mostly agreed to mostly disagreed.

9.1. Validity

Validity of data was measured using construct validity. As construct validity cannot be measured directly; convergent validity and discriminant validity were employed. All independent variables and dependent variable were based on strong literature to support the theoretical validity of the study. Therefore, content validity of the data was ensured. Convergent validity of the data was ensured through Exploratory Factor Analysis. KMO and Bartlett's test carried out to verify the adequacy of sample for each variable and the suitability of the data for Factor Analysis. Discriminant and convergent validity (Construct validity) of the measures were ensured considering the Square roots of Average Variance of Extracted (AVE).

9.2. Reliability

For ensuring the reliability of the variables; Cronbach's coefficient alpha was employed. Alpha coefficient ranges from 0 to 1 may be used to describe the reliability of factors extracted from various types of questionnaires or scales (Khalid K. et al, 2012). As alpha values are greater than .50, they can be considered as acceptably reliable in general; thus, those coefficients seem satisfactory enough to be included in further analysis of the study.

9.3. Factor Analysis

As shown in table 1, Factor Analysis was used to ensure the validity of each factor. Item loading of dependent variable and independent variables were greater than .05. Also, total variance explained by each variable were greater than 50% and initial Eigen values were greater than 1 show an acceptable validity in each variable.

Table 9: Results of Factor Analysis of Dependent Variable

Item	Alpha	Absolute Loading*
E-Procurement Adoption	.857	
Employees aware on automated processes in procurement function		.852
Employees accept fully automated e-Procurement system		.842

Employees use existing e-Procurement system	.859
Employees willing to use fully automated e-Procurement system	.794
Total Variance Explained – 70.116%	
Initial Eigenvalues – 2.805	

Table 10: Results of Factor Analysis of Independent Variables

Item	Alpha	Absolute Loading*
Relative Advantage	.873	
RA 01- E-Procurement makes the procurement process faster		.955
RA 02- E-Procurement facilitates better management of purchasing function		.934
RA 03- E-Procurement improves relationship with suppliers		.817
Total Variance Explained – 81.731%		
Initial Eigenvalues – 2.452		
Compatibility	.919	
E-Procurement system appropriate with existing information technology infrastructure		.857
E-Procurement system appropriate with organisation's preferred way for conducting purchasing activities		.913
E-Procurement adoption is consistent with organisation's business strategy		.886

Item	Alpha	Absolute Loading*
E-Procurement adoption is consistent with organisation's values		.940
Total Variance Explained – 80.923%		
Initial Eigenvalues – 3.237		
Complexity	.712	
Learning to operate e-Procurement is easy		.710
Interaction with e-Procurement system is clear		.647
e-Procurement is flexible to interact with		.740
Easy to become skillful at using e-Procurement		.851
Total Variance Explained – 54.865%		
Initial Eigenvalues – 2.195		
Top Management Support	.878	
Top management considers e-Procurement adoption is important		.890
Top management considers e-Procurement adoption as a part of business strategy		.982
Top Management is willing to take risks involved in the adoption of e-Procurement		.933
Top Management sets goals to achieve e-Procurement		.835
Top Management is committed to use e-Procurement		.857

Item	Alpha	Absolute Loading*
Top Management is willing to change organisational structure required to adopt e-Procurement		.675
Top Management is willing to change business processes required to adopt e-Procurement		.517
Top Management is capable of formulating policies required to adopt e-Procurement		.555
Total Variance Explained – 60.078%		
Initial Eigenvalues – 4.806		
Employee Knowledge	.851	
Employees aware on process improvements		.852
Employees have an overall knowledge on e-Procurement		.924
Employees have technical knowledge to start e-Procurement		.864
Total Variance Explained – 77.519%		
Initial Eigenvalues – 2.326		
Supplier Readiness	.738	
Suppliers willing to automate supply process		.792
Suppliers trust organisation's system		.908
Suppliers have automated systems		.749
Total Variance Explained – 67.109%		
Initial Eigenvalues – 2.013		

Item	Alpha	Absolute Loading*
External Pressure	.936	
Organisation is forced to e-Procurement to meet suppliers requirements		.969
Pressure to use e-Procurement as a standard purchasing practice		.969
Total Variance Explained – 93.95%		
Initial Eigenvalues - 1.879		
Government Support	.936	
Government is supportive to adopt e-Procurement		.865
Legal framework is sufficient to adopt e-Procurement		.865
Total Variance Explained – 74.796%		
Initial Eigenvalues – 1.496		

**Absolute loading of .50 or higher were significant*

10. ANALYSIS OF DATA

Following section presents the demographic analysis of the characteristics of the sample. Subsequent section presents and analyses the correlation and regression among variables. Finally, identified problems were presented and categorized using content analysis.

10.1. Demographic characteristics of the sample

Demographic characteristics were considered for age, gender, educational and professional qualifications, and working experience. 42% of the sample is within the age range of 31-40. Majority of the respondents in the sample are male and it is accounted for 55% of the sample. Female respondents accounted for 45% of the total respondents. Highest responses received from

the Ministries category. 49% of the respondents are graduates and about 36% of the sample has fully qualified professional examinations and 49% of the respondents possess a range of two to four years' experience in the procurement function.

In organizational analysis, 65% of the respondents prefer to use automated system for procurement function of their organizations.

Table 11: Demographic Characteristics of the Sample (N=74)

Demographic Variable	Frequency	As a %	Cumulative %
Gender			
Male	41	55%	55%
Female	33	45%	100%
Total	74		
Age			
25-30	6	8%	8%
31-40	31	42%	50%
41-50	26	35%	85%
above 50	11	15%	100%
Total	74		
Type of organization			
Ministries	31	42%	42%
Departments	20	27%	69%
Statutory Boards	23	31%	100%
Total	74		
Education Level			
Master Level	27	36%	36%
Postgraduate Diploma	0	0%	36%
Degree	36	49%	85%
G.C.E A/L	11	15%	100%
Total	74		
Professional Level			
Fully qualified	27	36%	36%
Partly qualified	25	34%	70%
Reading	20	27%	975
No professional qualification	2	3%	100%
	74		
Working Experience			

Demographic Variable	Frequency	As a %	Cumulative %
Less than 1	20	27%	27%
2 - 4	48	65%	92%
5 - 9	6	8%	100%
More than 10	0	0%	100%
	74		

Source: Field Data

Table 12: Number of organizations having separate purchasing department (N=74)

Is procurement function of the organization operating through separate purchasing department?	No=1		Yes=2	
	No. of Organizations	%	No. of Organizations	%
Ministries	05	20	18	37
Statutory Boards	13	52	18	37
Departments	07	28	13	27
Total	25	100	39	100

Source: Field Data

Table 13: Employee's preference on using automated systems than manual systems (N=74)

Do employees prefer to use automated systems than manual systems?	No=1		Yes=2	
	No. of Organizations	%	No. of Organizations	%
Ministries	12	46	11	23
Statutory Boards	09	35	21	44
Departments	05	19	16	33
Total	26	100	48	100

Source: Field Data

10.2. Analysis of Level of automation in procurement process

The study examined the current level of ICT usage under four categories as “Information search and exchange”, “Conducting simple e-Procurement transactions”, “Fully automated e-Procurement transactions” and “Electronic collaboration in e-Procurement”. Likert scale was used to determine the level of e-Procurement usage using total of 22 questions. The level of e-Procurement usage in the national level public sector organizations was analyzed considering the Mean and Standard deviation of SPSS version 20.

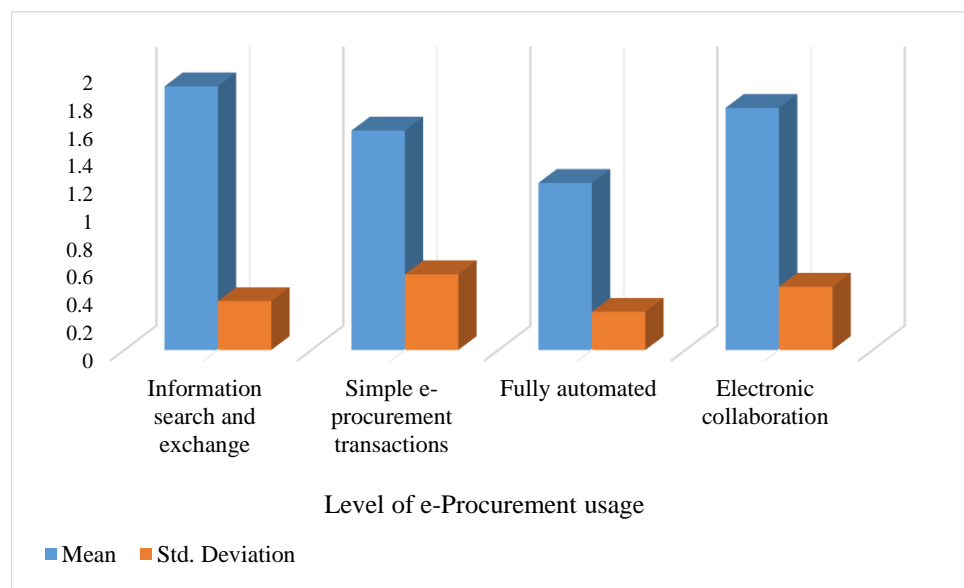


Figure 3: The level of e-Procurement usage in the national level public sector organizations

According to the results, mean value of all four levels is below 2.33. Hence, organizations in the sample are under lower level in using electronic methods in their procurement function.

10.3. Correlation of the Research Variables

Before analyzing the regression model, Multicollinearity analysis performed to identify how much the variance of an estimated regression coefficient increases if the predictors are correlated. VIF is the collinearity statistics utilized to measure the impact of Multicollinearity among variables. As Denis (2011) has mentioned, If VIF for one of the variables is around or greater than 5, there is Multicollinearity associated with that variable (Cited by Bush, 2009). According to the test results, there is no Multicollinearity issue in the model. A correlation analysis was used to examine the strength of the relationship between independent variables.

Table 14: Pearson Product Moment Correlation Matrix for the Research Variables

Correlations									
Variables	EPA	RA	COM	COX	TMS	EK	SR	EP	GS
EPA	1								
RA	.416**	1							
COM	.593**	.405**	1						
COX	.493**	.329**	.411**	1					
TMS	.636**	.360**	.591**	.398**	1				
EK	.515**	.386**	.330**	.277*	.288*	1			
SR	.125**	-.336**	.180	.179	.270*	.522**	1		
EP	.313	.141	.209	.312**	.661**	.374**	.548**	1	
GS	.213	-.238*	.058	-.044	.458**	.301**	.515**	.644**	1

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

There is a significant correlation between e-Procurement adoption and Relative Advantage, Compatibility, Complexity, Top Management support, Employee knowledge and Supplier readiness at the 0.01 level.

10.4. Regression Coefficients

Table 15: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.271	1.117		2.032	.046
Relative Advantage	.602	.219	.419	2.752	.008
Compatibility	.218	.103	.213	2.127	.037

Complexity	.341	.119	.239	2.873	.005
Top Management Support	.702	.159	.566	4.419	.000
Employee Knowledge	.705	.130	.705	5.422	.000
Supplier Readiness	-.917	.243	-.573	-3.776	.000
External Pressure	-.059	.164	-.049	-.358	.722
Government Support	-.038	.136	-.034	-.282	.779

a. Dependent Variable: E-Procurement adoption

Employee knowledge and skills, compatibility, complexity, relative advantage, top management support, supplier readiness significantly affect on e-Procurement adoption.

Table 16: Model Summary

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin –Watson
1	.836 ^a	.699	.662	.49172	2.144

a. Predictors: (Constant), Government Support, Complexity, Supplier readiness, External Pressure, Compatibility, Top Management Support, Employee knowledge and skills

b. Dependent Variable: E-Procurement adoption

All these factors explain 66.2% variance on the dependent variable of e-Procurement adoption. External pressure and government support are not significantly affect on the e-procurement adoption.

10.5. Qualitative Analysis

Qualitative findings are based on the responses given by the respondents for the questionnaire and responses received derived from the structured interviews conducted with the selected officers. Following specific issues were identified.

10.5.1. Weak Procurement Guidelines

According to the analysis of responses received from the interview, all respondents highlighted the weaknesses in the existing procurement guidelines. Procurement guidelines obstruct moving into automated systems in procurement function as suppliers are not allowed to submit bids in electronic form, purchasing via e-auctions or e-tenders, making payments electronically and sending documents to suppliers in electronic means. The same issue was highlighted by the responses received through questionnaires. Accordingly, 88% of the respondents mentioned that strengthening and revising existing guidelines is a must to facilitate e-Procurement adoption.

10.5.2. Weak Legal framework

From the interviewees four officers discussed the weaknesses in the existing legal framework of the country to adopt e-Procurement. Laws and regulations facilitating electronic transactions and other IT related laws can be identified as the major constraint in establishing an e-Procurement System. It was revealed that in the long term, absence of a national procurement law will diminish the stakeholders' trust, transparency, accountability and efficiency in procurement operations. Implementation of Electronic Transactions Act, No. 19 of 2006 and Computer Crime Act, No. 24 of 2007 are some of the positive tendencies on creating legal framework in the country. However, those laws should be revisited to facilitate towards implementing e-Procurement systems. 53% of the respondents highlighted the weak IT related laws through the questionnaires.

10.5.3. ICT infrastructure

Along with the strengthening legal framework, ICT infrastructure is required to facilitate those Acts and regulations should be established and maintained. All interviewees mentioned that existing ICT infrastructure does not facilitate in adopting e-Procurement systems in their organizations. 95% of the respondents confirmed the same issue through the responses received from the questionnaire. As e-Procurement System is highly relies on cryptography to establish Confidentiality, Integrity and Availability, it is required relevant cryptographic protocols, algorithms and techniques to establish a secure e-Procurement System. Standard Bidding Documents (SBD) should be modified and standardized to facilitate use of e-procurement.

According to the respondents, lack of Public Key Infrastructure (PKI) facilities is a key barrier in determining e-Procurement adoption.

10.5.4. Lack of IT knowledge and experience

Lack of IT knowledge and experience among public sector officials appeared as a key issue in e-Procurement adoption. Initiation of such a change would be challengeable without sufficient knowledge on IT. Officials engaged in procurement function does not know on laws and regulations facilitating electronic transactions and other IT related laws. 81% of the respondents highlighted the issue through the questionnaires.

11. DISCUSSION

First objective of the study is to find out the present level of automation in the procurement function in selected public-sector organizations. The four levels were defined based on the literature as “Information Search and Exchange”, “Conducting simple e-Procurement transactions”, “Automated e-Procurement transactions” and “Electronic collaboration”. Findings of the study show that organizations in the sample is at lower level in using automated processes in the procurement function.

Relative Advantage, Compatibility, Complexity, Top Management Support, Employee knowledge and Supplier readiness are critical determinants of e-Procurement adoption in public sector organizations in Sri Lanka. Relative advantage was found to have effect on e-Procurement adoption in the studies by Min and Galle (2003), Teo, et al (2009), Li (2008), Hasan (2013), Soares - Aguiar & Palma dos-Reis (2008).

Organizations are more likely to adopt and use innovation when it is compatible with their existing practices and values (Rogers 2003). Teo et al., (2009) and Soares - Aguiar, and Palma-dos-Reis (2008) presented evidence suggesting that organizations are more likely to adopt and use technology that is compatible with the organizations’ existing information technology infrastructure, business processes and value systems.

An innovation that is perceived as easy to use and understand is more likely to be adopted and used by an organization (Rogers 2003). Further, author suggested that organizations are more likely to adopt and use technology that is perceived as less complex. Difficulty in understanding and applying a new technology increases the risk associated with its adoption (Teo, et al., 2009).

Top Management support is a critical factor in both e-Procurement implementation and adoption as identified by many scholars. Support from top management is vital to ensure that resources needed to adopt a technology (Griver 1993 (as cited in Hassan 2013) or to expand its use are available and to overcome resistance to change.

Employee knowledge is more likely to result in e-Procurement adoption. Prior studies presented evidence that organizations are more likely to adopt and use technology when their employees have knowledge and expertise relevant to technology. Mata, et al., (1995) illustrate that knowledge about technology enables organizations to manage effectively the risks associated with investing in a technology (as cited in Hassan 2013). The findings are associated with the qualitative findings revealed through the interviews conducted with the officers of public sector organizations.

The benefits of e-Procurement can be realized by an organization only if its suppliers are ready to engage in information exchanges or transactions via procurement (Hassan 2013). Soares - Aguiar & Palma-dos-Reis (2008) presented evidence that organizations are more likely to adopt and use inter-organizational information systems when their trading partners are ready to use such systems. However, supplier readiness has a negative relationship with e-Procurement adoption due to suppliers' unwillingness to trust electronic systems in public sector organizations.

In Sri Lanka, most of the supplier contracts depend on personal relationships and have been awarded without observing the fundamental principles of governance in procurement (Verité 2016). Therefore, both buyer and seller do not wish to maintain electronic business relationships. ECOM (2002) provides constructive opinion on the same stating that suppliers may be unwilling to conduct businesses electronically with public sector agencies because they are unclear about the benefits to be gained, and they might see e-Procurement as a means by which public sector agencies will simply attempt to force down prices.

12. CONCLUSION

This study makes a significant contribution to the applicability of e-Procurement adoption theories to the public-sector organizations in Sri Lanka. Accordingly, technology and organization context variables were significantly affect on e-Procurement adoption in public sector organizations in Sri Lanka. Some of the qualitative findings such as employee IT knowledge and experience and IT infrastructure also compatible with the complexity in the technological environment and employee knowledge and skills in the organizational context. However, Supplier readiness from the external environment has a negative impact on e-Procurement adoption.

Therefore, top managers should more concern about organizational level factors to strengthen those factors. Top management support and employee knowledge have the highest impact on e-Procurement adoption in the organizational context. As suppliers' readiness negatively effects on e-Procurement adoption, managers should provide opportunities for them to offer their feedback and suggestions for the improvement and adjustment of practices.

13. RECOMMENDATIONS

E-Procurement adoption is possible when the users of the organization perceive its benefits such as performing procurement process faster, better management of procurement activities and improving relationship with suppliers. Therefore, users should make aware on the expected benefits of adopting e-procurement system.

E-procurement systems should be compatible with the existing information technology infrastructure. Then the additional cost and training can be minimized as users familiar with the existing information technology infrastructure. Further, users preferred method of doing their day to day activities should not diverge with the new e-procurement systems. End user participation is required from the beginning of such implementation to avoid resistance. E-procurement systems should be easy to learn and operate for end users. It should be provided with user friendly interface to interact with.

Top management support is a vital factor on e-procurement adoption. They should perceive moving to an automated solution is important to the organization. They should set goals and

formulate policies necessary for e-Procurement adoption. To accomplish the goal, they should identify e-Procurement system adoption as a part of their business strategy and they should be willing to change necessary changes required in the present organizational set up and business processes.

Employee knowledge and skills is another supportive hypothesis for e-Procurement adoption. Employee should be made aware of the process improvements and changes to the existing processes. User Acceptance Testing (UAT) should be conducted before implementation of e-Procurement systems.

Supplier readiness to perform purchase contracts based on automated process is another factor on e-Procurement adoption. As it is negatively correlated with e-procurement adoption in Sri Lankan context, suppliers should be involved in every stage of e-Procurement adoption by demonstrating the proposed solution to supplier by discussing necessary changes, issues and concerns.

Updating procurement guidelines, manuals and procurement procedures and adopt a principles-based procurement law are imperative requirements in order to speed up e-Procurement adoption.

The study examined the level of e-Procurement usage in public sector organizations and revealed that all organizations are at a low level in automating procurement processes in their organizations.

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Impact of Sectorial Distribution of Commercial Banks' Credit on Economic Growth in Sri Lanka

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Abstract

The study attempts to investigate the impact of sectorial distribution of Commercial banks' credit on economic growth in Sri Lanka from 2004 to 2017. The data of commercial banks' loans and advances to the agriculture sector, industry sector, personal consumption, and service sector are used to track the sectorial credit distribution to the private sector by commercial banks. The regression analysis, Johansen-Juselius Cointegration test, Granger Causality test, Impulse Response Function (IRF) analysis and Forecast Error Variance Decompositions (FEVD) models are employed to determine the effect of sectorial distribution of Commercial banks' credit on economic growth in Sri Lanka. The regression results indicate that the commercial bank sectorial credit have significant positive impact on the economic growth except agricultural sector. Agriculture sector has a long run negative relationship with Gross Domestic Product (GDP) while other sectors have positive long run relationship between economic growth. Granger Causality tests showed that there is a unidirectional causality from agriculture sector on GDP. IRFs and Variance decomposition analysis confirmed the statistically significant short run relationship between GDP and agriculture sector. According to the study results, the policy makers could motivate banks to distribute credit amongst the industry and service sectors since it has a positive impact on GDP in the long-run. Moreover, it is possible to use credit distribution to the agricultural sector as a short term mechanism to increase GDP.

Keywords: Commercial bank, Credit, Economic growth, Private Sector

INTRODUCTION

A Commercial bank's primary function is defined as acquiring funds from surplus units in term of deposits and lending them to all legitimate businesses and consumer financial needs with a competitive interest rate (Rose, 2002). The commercial banks extend loans and advances to the different sectors such as agriculture, service and industry to enhance the sustainability of an economy. The previous literature emphasize that the commercial banks'-private sector lending services plays a catalytic role to promote the entire sectorial businesses to adopt the advanced technology, financial consultancy, educate sustainable business practices and absorb

the uncertain shocks from the external environment (Köhler, 2015;Chinweokeet al., 2015). Sri Lankan banking sector consist of 700 billion as capital funds and LKR 2.3 Trillion under the total investment and LKR100 Million as profit in 2016 (CBSL, 2017). Majorly, banking profit is earned from credit facilities (Chinweokeet al. (2015).

The present context of Sri Lankan economy indicates that, Commercial banks and the Stock market are challenged with negative macroeconomic conditions (Dewasiri and Kumarasinghe, 2014). The lending profits were dropped in 2017, the GDP indicated a lower growth rate, lack of credit expansion was the elevated inflation rate due to adverse impact of weather conditions, tax adjustments and international prices of commodity in 2017. Moreover, the Sri Lankan currency rate has also shown a depreciating trend in the market (Rajakaruna, 2017). The regulatory body tightened the fiscal and monetary policy to overcome from these problems. As a result, the standing lending facility rate (SLRF) increased up to 8.00% in 2016 (Rajakaruna, 2017). The banking sector is still addressing the real sectors' monetary requirements though operations under an unfavourable environment. In general, the Sri Lankan commercial bank loans and advances facilities dropped for the industry sector and agriculture sector meanwhile the service sector recorded a positive credit expansion. There is a contradiction of the findings of impact of sectorial distribution of commercial banks' credit on the economic growth as indicated in the studies conducted in the past few decades (Waheed, 2009; Uzomba et al., 2014; Mulu, 2012). For instance, Köhler (2012) argued that there is an inverse relationship between credit facilities to the real sectors and productivity of an economy. Contrary to Köhler's (2012) findings, Burzynska (2009) stated that the economy has one way causality between economic growth and loans to commercial sector while Mulu, (2012) arguing that banking sector credit facility does not contribute to the economy growth. Moreover, most of the studies individually investigated on credit facility to a single sector and its impact on economic growth of the respective country (Mulu, 2012; Burzynska, 2009). This study is different from those studies since it focuses on a holistic view focusing agriculture, industry, and service sectors in a single study. Moreover, there is a paucity of studies conducted in the Sri Lankan context in the same phenomenon. Hence, the contradiction of the findings of the previous studies and paucity of the studies conducted in the Sri Lankan context motivate this study to a greater extent. Thus, this research aimed to be a fruitful addition to the existing studies on this area filling the aforementioned research gaps of contradictory findings and paucity of studies conducted in the Sri Lankan context. Thereby, the research problem of this study is identified as: "what is the impact of sectorial credit distribution of commercial banks' credit on the economic growth of Sri Lanka?"

The objective of this study is to investigate the impact of sectorial distribution of commercial banks' credit on economic growth of Sri Lanka. The specific objectives of this study are identified as: [1] to examine the impact of private sectors distribution of Commercial Banks loans and advances on economic growth, [2] to investigate the short and long run relationship between private sector credit facilities and economic growth.

LITERATURE REVIEW

The concepts of banks and the banking sector in a financial sector became the central theme for many scholars and academics to explore the banks' credit/lending facilities to private sector in the economy to have a sustainable growth (Burzynska, 2009). A sound and resilient banking system empowers the country's real sector. Rahman et al. (2012) emphasized that "a banking system should be more concern on the environment shocks to safeguard the financial system as well as the productivity of a country". The theoretical background of the study is explained through Cobb-Douglas Theory which explains the relationship between labour supply and capital on production. The production represents the economic growth and capital represents the credit borrowings (Mulu, 2012). Thus, the Cobb-Douglas Theory has implications for the current study since credit borrowing is a variable which is related to the economic growth as emphasized by Mulu(2012).

Burzynska(2009) employed an empirical framework using Johansen Co-integration technique to investigate the long-term relationship between Chinese economic growth and sectorial distribution of credit facilities. Burzynska (2009) stated that banking industry extensively supports the economy with the banking credit facilities. Moreover, his study further explained the different types of loans and advance products from different banks have a positive impact on the economic growth. GaleanoandFeijo (2012) supported the argument stating that economic growth of the diverse regions are differed according to the sectorial distribution of the credit facilities for respective regions. Burzynska (2009) revealed that there is a unidirectional causality between economic growth and loans or credit facilities to the commercial sector. Contrary to Burzynska's (2009) and GaleanoandFeijo's(2012) findings, Mulu, (2012) argued that the banking sector credit facilities does not contribute to the economic growth. Mulu (2012) explained that supply and demand of the credit products are statistically significant but the association between sectorial distribution of credit facilities and economic growth reflect a slight negative and insignificant association. Hence, Mulu (2012) concluded that the bank credit facilities are not significantly contributing to enhance the productivity.

Chinweokeet al. (2015) stated that commercial banks play an auxiliary role to develop the real sectors to achieve an outstanding economic growth of an economy through its lending/credit facilities. They further stated that commercial bank loans and advances

encourage the agriculture and manufacturing sectors' productivity. Hence, the empirical literature clearly shows that the banking industry is playing a crucial business in an economy by providing credit facilities (Chinweoke et al., 2015; Burzynska, 2009; Galeano and Feijo, 2012). It significantly supports to develop the real sector of an economy through exposing to various kinds of risks. Thus, the banks should balance the risk exposure and credit utilization in order to achieve a sustainable development of an economy (Kumar et al., 2016). The empirical contradictory evidences in other countries and paucity of the studies conducted in the Sri Lankan context provide the rationale for a further study. Therefore, to address the literature gap, the researchers of this study attempt to examine the impact of sectorial credit distribution of commercial banks' credit on economic growth of Sri Lanka.

METHODOLOGY

Dewasiri et al. (2018) argued that research problem and/or questions drive the methodology of a study. For instance, if the research problem is in descriptive, comparative, relationship bound, or historical in nature, Onwuegbuzie and Leech (2006) recommended the quantitative methodology for such inquiry. Accordingly, this study formulated its research problem in descriptive form (what) and thus it is recommended to proceed with a quantitative inquiry. The period of the study is confined for 13 years from 2005 to 2017. The data points were collected on quarterly basis from Licensed Commercial Banks in Sri Lanka and verified from monthly bulletin of Central Bank of Sri Lanka (CBSL) from 2005 to 2017. The sample consists of 26 licensed commercial banks and accounted for 32% of the population (81 financial institutions). It could be considered as a limitation of the current study. The conceptual model of the study is stated in Figure 1.

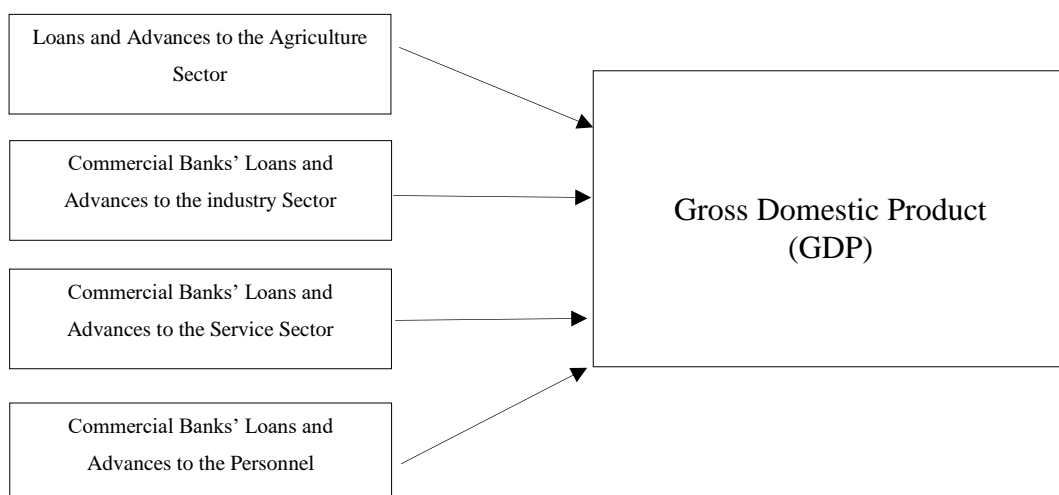


Figure 1: Conceptual Framework of the Study

Source: Authors' own.

The literature review indicated that there is a significant impact from sectorial distribution of commercial bank credit facilities on economic growth in a country (Chinweoke et al., 2015; Burzynska, 2009; Galeano and Feijo, 2012). Hence, the researchers of this study formulated following hypotheses to achieve general and specific objectives of the study.

H₁: There is an impact of Commercial Banks' credit distribution to the agriculture sector on economic growth of Sri Lanka

H₂: There is an impact of Commercial Banks' credit distribution to the service sector on economic growth of Sri Lanka

H₃: There is an impact of Commercial Banks' credit distribution to the industry sector on economic growth of Sri Lanka

H₄: There is an impact of Commercial Banks' credit distribution to the personal consumption sector on economic growth of Sri Lanka

Model Specification

The multiple linear regression model is used to investigate the impact of sectorial distribution of commercial banks' credit facilities on the economic growth. Here, the credit is measured through loans and advances issued by the commercial banks.

$$y_{\text{GDP}} = a + b_1 X_{\text{CBC-AS}} + b_2 X_{\text{CBC-IS}} + b_3 X_{\text{CBC-SS}} + b_4 X_{\text{CBC-PC}} + u$$

Where,

Y = Economic Growth proxied by Gross Domestic Product (GDP)

$X_{\text{CBLA-AS}}$ = Commercial Banks' Loans and Advances to the Agriculture Sector

$X_{\text{CBLA-IS}}$ = Commercial Banks' Loans and Advances to the Industry Sector

$X_{\text{CBLA-SS}}$ = Commercial Banks' Loans and Advances to the Service Sector

$X_{\text{CBLA-PC}}$ = Commercial Banks' Loans and Advances to the Personnel Consumption Sector

a = Constant

u = error term

DATA ANALYSIS AND DISCUSSION

The data analysis and discussion is conducted in four stages. First, descriptive statistics including normality tests, unit root tests, and other diagnostic tests such as heteroscedasticity, and serial auto-correlation tests were performed to test on the regression assumptions. Then, a multiple regression analysis is performed to test the general impact of sectorial distribution of commercial banks' credit on the economic growth. Third, short term relationships are measured to investigate the short run causal relationships between dependent and independent variables. Finally, Johansen-Juselius Cointegration test is performed to investigate the long-run relationships.

Descriptive Statistics and Normality of Data

According to the results indicated in Table 1, the mean of industry sector credit is comparatively higher than the other real sectors and the variability also higher for this sector. The consumption lending is higher than the agriculture sector. This reveals that the banking sector has given less priority to the agriculture sector credit facilities. Next, the Skewness of the data measures the symmetric of the data. The study sample data has normal univariate distribution since Kurtosis values are ranged between -1.96 and +1.96 for all variables as emphasized by George and Mallery (2010).

Table 1: Descriptive Statistics: GDP, Agriculture, Industry, Service, and Consumption

Variable	Mean	StDev	CoefVar	Minimum	Maximum	Skewness	Kurtosis
GDP	1582556	817951	51.69	493754	3261838	0.56	-0.77
Agriculture	181663	129001	71.01	20020	366114	-0.08	-1.76
Industry	685524	443431	64.68	228401	1793056	1.23	0.50
Service	451062	346619	76.85	115770	1321427	1.32	0.76
Consumption	436811	276272	63.25	89175	931969	0.31	-1.40

Stationary of Data

Next, the unit root of the variables are tested to have a same order of integration for all the variables. The Augmented Dicky-fuller Test (ADF) is performed in testing such stationary status of the time series data and the findings are indicated in Table 2.

Table 2: The Augmented Dicky-fuller Test (ADF) results

Variable	p-Value	Order of Integration
GDP	0.001	1 st Difference
AGDRICULTURE	0.000	1 st Difference
INDUSTRY	0.000	1 st Difference
SERVICE	0.000	1 st Difference
CONSUMPTION	0.001	1 st Difference

The findings of the ADF tests revealed that all the variables are in stationary status only in the 1st difference since all of the variables are showing there is no unit root (p-value is lesser than 0.01) only in the same order (1st difference) of integration. Hence, 1st order variables are used for the analysis.

Moreover, the Breusch-Pagan test is performed to test the heteroscedasticity of the variables. The results indicated that the residuals are homoscedastic since the p-value of the Breusch-Pagan test was higher than 0.05. Next, Breusch-Godfrey serial correlation test is performed to test the serial correlation of the residuals and the findings revealed that there is no serial correlation since the p-value of the test was lesser than 0.05. Hence, the findings of the diagnostic tests revealed that a multiple regression model is suitable for the analysis since there is no violations in the regression assumptions.

The General Impact of Sectorial Distribution of Commercial Banks' Credit on the Economic Growth

A multiple regression model is performed to measure the impact of sectorial distribution of commercial banks' credit on the gross domestic product (economic growth). The results are presented in Table 3.

Table 3: Results of the Regression Analysis

Predictor	Coef.	St	Coef	t-value	p-value
Constant	-3.566	5.5876		-0.06	0.949
Agriculture	0.1546	0.5273		0.29	0.771
Industry	3.7715	0.4279		8.81	0.000
Service	-3.5908	0.567		-6.33	0.000
Consumption	1.3558	0.3509		3.86	0.000
R ²	0.791				
Adjusted R ²	0.780				

The model summary indicated that 78% of the economic growth (GDP) variation could be explained through the model. Hence it is possible to divulge that there are other exogenous variables which explain the economic growth of the country. Moreover, the p-values of the independent variables suggest that industry, service, and consumption are significant in explaining the economic growth. The respective coefficient values suggest that credit distribution of the service sector are inversely related with the gross domestic product. Further, credit distribution of the industry and consumption sectors are positively related with the Sri Lankan GDP. The impact of credit distribution of the industry sector is higher than the consumption sector.

The regression analysis illustrates that agriculture sector distribution of commercial banks' credit is insignificant in explaining the economic growth in Sri Lanka at 95% significant level since p value ($p=0.771$) is higher than 0.05. Accordance with this study findings, Uzomba et al. (2014) found that the agriculture sector credit facilities has no impact on economic growth in Nigeria during 2002-2014 periods due to farmers high default rates, adverse weather conditions, unpredictable exposures and less infrastructure facilities. Waheed (2009) stated the economy of Pakistan is not facilitated via agriculture industry and it should be improved by the financial support to prosper the economy to achieve the sustainable development of the country. The problems of Sri Lankan agriculture sector are lack of land fragmentation, poor water management, storage facilities, and poor marketing opportunities (Wimalaratana, 2011). These are the major obstacles which freezing the agricultural productivity. Thus, it is possible to argue that credit facilities became meaningless due to the other obstacles arising within the industry which require further investigation for a confirmation.

According to the results of the regression analysis, sectorial distribution of Commercial Banks' credit of service sector has a significant ($\beta = -3.5908$, $p = 0.000$) negative effect on the economic growth. Accordance with this findings, Triplett and Bosworth (2004) stated that service sector does not directly or quickly contribute to the economic growth and it takes high cost and long time to render a sustainable contribution to an economy. The service industry consist of Transport, Communication and Information, Technology, Printing and Publishing, Education, Health, Shipping, Aviation and Freight Forwarding (Ministry of Finance, 2016). The transportation service sector is experiencing a crisis situation for a longer period due to high operational cost. Moreover, most of the road constructions and transport facilities were heightened in Western province (Ministry of Finance, 2016). The state banks' credit facilities continuously injected into the marine and aviation services but it is continuously making losses to the country (CBSL, 2017). As a whole, the service industry made an adverse condition in Sri Lankan context due to high costs of start-up and maintenance and fixed employment cost.

The industry and consumption sector distribution of Commercial Banks' credit has a significant positive impact on economic growth of Sri Lanka according to the regression analysis. Moreover, the industry sector showed the highest positive impact on the economic growth. Accordance with this study findings, Chinweoke et al. (2015) emphasized that industry sector credit facilities by the commercial bank contribute significantly on the economic growth. Moreover, Waheed (2009) revealed that the banking sector lending for the industry sector in Pakistan highly illuminated the manufacturing sector. The present study agrees with this results.

Long Run Analysis

The Johansen-Juselius Co-integration test is used to investigate the long term relationship between dependent and independent variables. The results of the unit root tests revealed that all the variables are stationary in the 1st difference. Hence, it is possible to proceed with the Co-integration test. The first step of the analysis involves deciding the lag length of the co-integration analysis. The optimal lag length is selected based on five criterion as indicated in Table 4; log likelihood, Schwarz criteria (SC), Akaike information criteria (AIC), final prediction error criteria (FPE), and Hannan-Quinn information criterion (HQ). The results of the sequential modified LR test suggested to proceed with maximum of two lags.

Table 4: Optimum lag length for VAR

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2785.243	NA	2.53e+45	118.7338	118.9306*	118.8078
1	-2744.226	71.56268	1.29e+45	118.0522	119.2331	118.4966
2	-2704.694	60.55967*	7.21e+44*	117.4338*	119.5988	118.2485*
3	-2680.241	32.25722	8.13e+44	117.4571	120.6062	118.6421
4	-2659.393	23.06592	1.18e+45	117.6337	121.7670	119.1891

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

Optimum lag length is the time period which takes to react on GDP from sector credit distribution in respective industries. As an example, commercial bank credit distribution to the service industry will impact to the economic growth in Sri Lanka after two quarters. The immediate reaction cannot be expected from the economic growth due to credit distribution to the each industry need time to utilize the monetary resources to the investment and performance of the industry.

Johansen Co-Integration test determines the long term equilibrium relationship between variables. The Result of Trace Test and Maximum Eigen Test shown in Table 5 and 6.

Table 5 :Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.660387	101.2744	69.81889	0.0000
At most 1 *	0.472411	49.43688	47.85613	0.0352
At most 2	0.201598	18.74386	29.79707	0.5114
At most 3	0.109251	7.936988	15.49471	0.4722
At most 4	0.048448	2.383719	3.841466	0.1226

Table 6: Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized	Max-Eigen	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.660387	51.83756	33.87687	0.0001
At most 1 *	0.472411	30.69303	27.58434	0.0193
At most 2	0.201598	10.80687	21.13162	0.6666
At most 3	0.109251	5.553269	14.26460	0.6710
At most 4	0.048448	2.383719	3.841466	0.1226

Table 6 shows the results of co-integration tests for the model including the trace test and the max-eigenvalue test at the 5% significance level. The results indicated that the max-eigenvalue tests and trace tests support two co-integrating vector at the 5% significance level. Thus, the variables of this study has long run relationship. Equation 4.1 presents these findings indicating that all variables are statistically significant in explaining long run relationships between GDP and independent variables of this study.

$$\begin{array}{rcccl}
 \text{GDP} & = & 0.542082 & - 1.1526 & + 0.988 & + 0.0357 \\
 & & \text{Agriculture} & \text{Industry} & \text{Service} & \text{Consumption} \\
 & & (0.40404) & (0.25303) & (0.28195) & (0.19255)
 \end{array}$$

Moreover, the results imply that there are significant positive long run relationships between GDP and credit distribution to agriculture, service and consumption sectors' mean while there is a significant negative long run relationship between GDP and industry sector.

Short Run Analysis

The short term relationships between dependent and independent variables are tested employing Granger Causality tests, impulse response analysis, and forecast error variance decomposition tests. The results of the granger causality tests are indicate din the Table 7.

Table 7 : Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
DAGRICULTURE does not Granger Cause DGDP	49	3.26489	0.0476
DGDP does not Granger Cause DAGRICULTURE		1.24584	0.2976
DINDUSTRY does not Granger Cause DGDP	49	1.30111	0.2825
DGDP does not Granger Cause DINDUSTRY		0.28035	0.7569
DSERVICE does not Granger Cause DGDP	49	0.83660	0.4400
DGDP does not Granger Cause DSERVICE		1.39468	0.2587
DCONSUMPTION does not Granger Cause DGDP	49	0.58363	0.5621
DGDP does not Granger Cause DCONSUMPTION		1.35518	0.2685

According to the results of the Granger Causality tests, credit distribution to the agriculture industry shows one way causality (unidirectional causality) on the gross domestic product (GDP). The credit distribution to the industry, service and consumption sectors do not show any granger cause with the economic growth.

Impulse Response Function Analysis

Impulse response functions track the response of a variable over time after a shock to the vector auto regression system. Figure 2 shows the impulse function analysis of the variables.

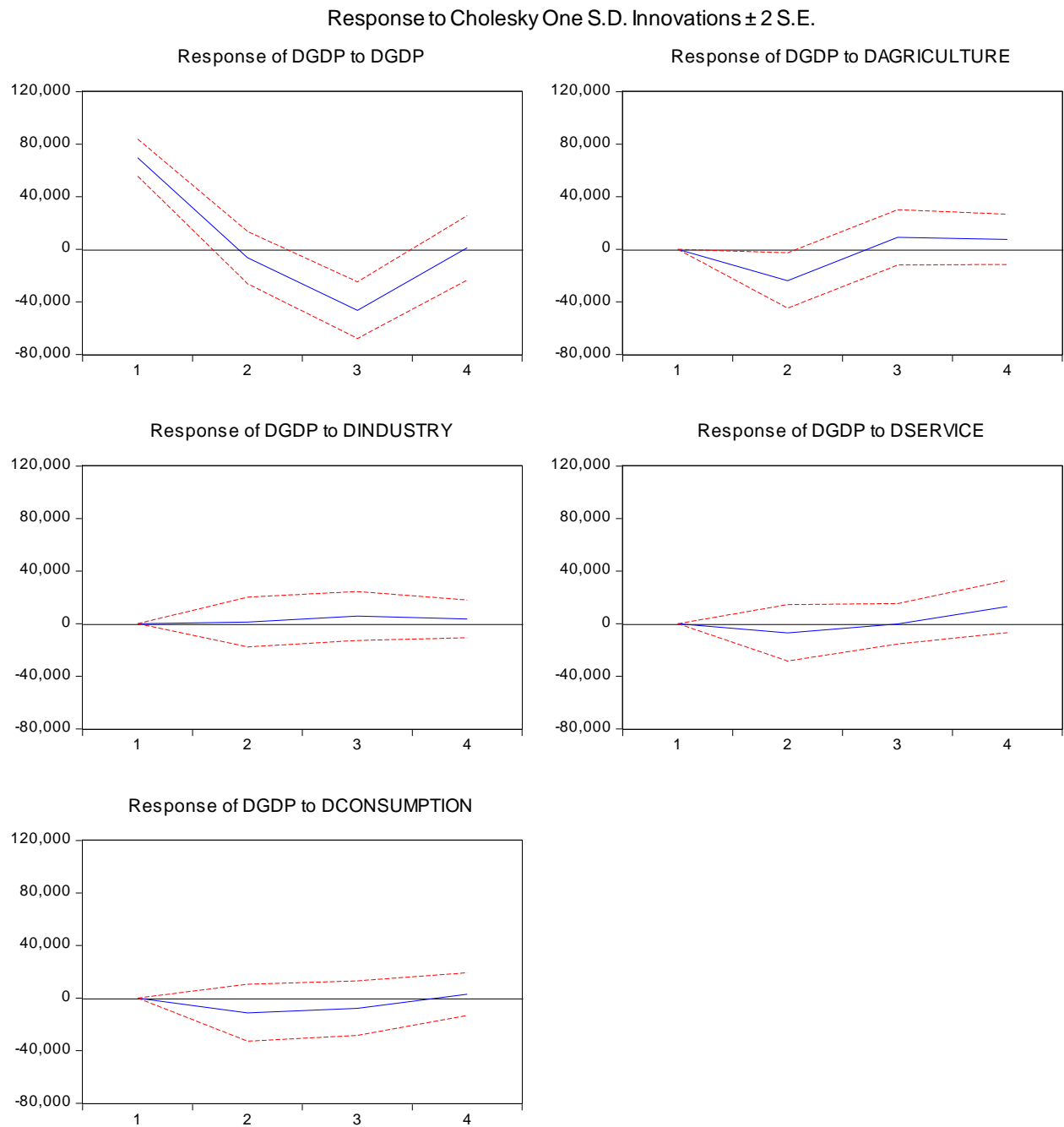


Figure 2: Impulse Response Functions

Figure 2 displays the estimated impulse response functions with 95% confidence bands represented by dotted lines. Here, all panels show the response of GDP to a transitory shock associated with each industry representative variable in the VAR system. The Impulse Response Function analysis indicated that there is no statistically significant short run relationship between GDP and all industry credit facilities except agriculture sector confirming the findings of the Granger Causality tests.

Forecast Error Variance Decompositions (FEVD)

Period	S.E.	DAGRICULTU			DCONSUMPT	
		DGDP	RE	DINDUSTRY	DSERVICE	ION
1	69780.83	100.0000	0.000000	0.000000	0.000000	0.000000
2	75195.49	86.82796	10.07607	0.026576	0.858855	2.210533
3	89350.50	88.46599	8.172696	0.442441	0.608523	2.310351
4	90738.42	85.79603	8.625056	0.584208	2.652333	2.342368

The results ensured that the GDP over four quarter period using the same identification restrictions that were used for the impulse response function (IRF) analysis. The magnitude of the contribution of the variables in the system change dramatically over four quarters which implies that agriculture sector has higher effect than other sectors on the economic growth in the short run. This findings confirm the results obtained in the IRF and Granger causality tests.

SUMMARY AND CONCLUSION

The purpose of this study is to investigate the impact of sectorial distribution of commercial banks' credit on economic growth of Sri Lanka. A quantitative study is carried out in achieving the objectives of the study. Based on the findings of the study, it is possible to conclude that sectorial credit distribution of industry, service, and consumption sectors are significant in explaining the economic growth of Sri Lanka. Moreover, the impact of credit distribution of service sector is inversely related with the economic growth. Further, credit distribution to the industry and consumption sectors are positively related with the Sri Lankan economic growth. The impact of credit distribution of the industry sector is higher than the consumption sector.

The short run analysis implied that credit distribution to the agriculture sector shows a short term relationship with the economic growth and it is confirmed by Granger Causality tests, IRF and FEVD analysis. The credit distribution to the industry, service, and consumption sectors are not significant in explaining the economic growth in the short run.

The long run analysis implied that there are significant positive long run relationships between economic growth and credit distribution to the agriculture, service and consumption sectors' mean whereas industry sector showing an inverse relationship with the economic growth of Sri Lanka.

IMPLICATIONS AND FUTURE DIRECTIONS

This study has implications for bankers, policy makers, government, and future researchers. The bankers could develop their lending policies according to the impact of the credit distribution of respective industries on the economic growth. For instance, they could assign high weightage for the credit distribution of industry and consumption sectors since it has the highest positive impact on the economic growth.

The policy makers and government can develop policies and strategies in accordance with the findings of this study. For instance, if they need to have an economic growth in a short run, they should develop strategies to distribute more credit facilities to the agriculture sector. If the requirement is long run economic growth, they should more focus on distributing credit facilities to the agriculture, service and consumption sectors while pushing minimized effort for the industry sector.

There are multiple implications for future researchers. First, the findings revealed that there is an inverse relationship between credit distribution to the service sector and economic growth. Hence, there is a room for a further investigation on the factors affecting such inverse relationship. Moreover, credit distribution to the agriculture sector was not significant in explaining the economic growth of Sri Lanka. Hence, the future researchers can investigate the reasons for such insignificance and make suggestions to improve the same. Further, this study is conducted using commercial banks as the sample. The future researchers can focus all the financial institutions for a more generalized and comprehensive picture about the research puzzle.

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Is Ethical Banking an Alternative to Conventional banking: A Literature Review

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Abstract

The Conventional Banking has so far being proved to be in adequate in providing solutions to socio-economic issues, as they have been focused more on increasing their share of wealth. This was proven with the outbreak of global financial crisis in 2007. Banks role as intermediary is to source and channel capital to, where the economic activity is. The instabilities and turbulences created by the traditional banks necessitated a transparent, socially and ethically responsible financial investment climate. Banks are losing its Values; there is a segment of society which is still excluded from banking. Banking too has contributed to the degradation of environment. Consumers are no longer motivated only by the returns they receive on their investments but also by the impact of banking business on sustainable development. Banks are also under scrutiny by Regulatory bodies and Governments for their unethical practices. Therefore it is necessary to judge banks not only on financial performance but also on its ability to maintain Ethical Values, Financial Inclusion and Responsible Behaviour, hence; a need arose for a new version of banking system which could address issues so far neglected by Conventional Banking. There were many banking systems that were emerging as alternative to Conventional Banking. Ethical Banking is one such system of alternative banking. Core competency of Ethical Banking is engage in ethical practices. Ethical Banking once developed could broad base the banking community. Although many researches have been carried out in the global scale for this subject, there haven't been any researches conducted on this subject in Sri Lanka. This research paper fills this research gap. The purpose of this paper is to examine whether Ethical banking can be an alternative to conventional banking. Therefore this study is totally a desk research in the form of a literature review based on literature published between 1989 and 2015. The significance of the study is to identify Ethical Banking as an alternative to Conventional Banking

Keywords: Conventional Banking, Ethical Banking, Financial inclusion, Sustainable Development

Introduction

The legacy of Banking goes back to the days of 2000BC in Babylonia, later traced in ancient Greece and under the Roman Empire. The organization of the word —Bankl comes from —Banquel in French, —Bancal in Italian and —Bancl in German. Banking since 1157 A.D., and later 15th century onwards, it gradually institutionalized and has today become a common factor in the day to day life of the people. Banks thus, plays an important role in people's life. It is this common factor that makes banks be responsible to the society at large.

Banks are required to play a critical role in economic development of a country. Banks are now becoming more oriented towards sustainable development. Banks are engaged in providing funds to industries, individuals and governments locally and globally. It is Bank's responsibility to ensure the Credit receivers and Depositors follow a sustainable development path. UNEP (United Nations Environment Program) 1992 requires banks to ensure high environmental practices in banking business (Uygur, 2010). Number of banks around the world have already become signatory to this statement. This is the first global move to make banking also into the promotion of sustainability. Banking operates in a service industry. Banks damage to environment due to its existence is very low. Their damage to the environment can be equal to the damage caused by an office operation. The real damage is caused by their stakeholders, the customers, shareholders, suppliers who engage in producing hazardous materials and/or discharging toxicants to the environment by engage in morally banned industries. The human rights movement and civil rights movements fight against violation of human rights and civil rights. They have also influenced this industry too. The industries are now required to refrain from violating human and civil rights of society. Therefore the industry consisting of public and private sector organizations including Banking institutions are expected to promote, operate in a way that they develop a sustainable environment in every aspect. The societies have become more powerful in winning their rights to a peaceful and sustainable world. A trend has been set in the banking industry to become ethical .There was a demand for an alternative Bank to fill this vacuum. This created the birth of Ethical Banks. Ethical banks are gaining popular and their state of business is increasing.

Ethical banking is a financial service that promotes equity and sustainable development. Ethical banks are an alternative banking system, as other banks, operate deposit accounts, grant loan facilities, and offer other banking facilities to customers. Their savings and deposits accounts are to promote sustainable development. They lend only to customers who engage in projects, which ensures a sustainable development. Ethical Banks develop special savings accounts for customers who seek to engage in sustainable investments. Their borrowers are screened on sustainability indications. Some ethical banks promote loans to properties which gives an ecological payback. (Bank Track) It is the mission of ethical banks to avoid financial exclusion to overcome poverty, and the access to credit can be considered a human right. Community development is also another area that some ethical banks engage in. Hither to neglected communities are welcome to become customers in these banks. Community development banks are another category of ethical banks that are specialized for community development; they direct their funds to the neglected communities. These communities have become neglected by traditional banks. (Bank Track) Another form of alternative banks is called Social

Banks. These banks ensure economic, ecological, social and cultural sustainability while engage in general banking. They ensure the triple bottom line people, planet and profit. And Social banking as identified by benedikers(2011) are banks with a conscience. The characteristics of ethical banks include offering fair rate of return for all, aims to be transparent , use only customers and bank funds for lending, offers broader levels of engagement to stakeholders, establishes long term relationships with customers , reduces salary disparities among staff, ensures financial sustainability The traditional role played by banks included deposit taking and disposing of funds by way of granting credit facilities to customers which include loans , overdrafts and pawn broking .They engage in agency functions such as receive payments on behalf of customers, transfer of money, purchase or sale of shares and other securities. Acting as agent for customer's fund transfers and receiving, accepting and payments of bills, Banks also become underwriters. It engaged in advisory functions as financial advisors. Over the years, due to the increased competition, from within and outside, banks lost the control of their behavior.

Banks are responsible institutions, and are responsible to the stakeholders, which include the Government, Society, Customers, Employees, Suppliers and Shareholders. The short term profit making as a policy of banks, have discouraged the provision of banking services to lower income category of people. Banking was not easily accessible to everyone. As per Central Finance Board of the Methodist church, financial exclusion – (exclude certain individual communities, lack of access to banking services) is believed to have aggravated the social and other inequalities. These vulnerable areas include young people without jobs, lone parents' disabled people and older people. Banks' lending to these constituents without screening for environmental sustainability of their borrowing has increased damages to the environment. The environmental friendly movements, demanded banks to be responsible in their lending, to its constituents. UNEP in 1991 launched the concept of the UNEP finance initiative to make the banking industries, awareness of the environmental agenda. Leading commercial banks joined to support this initiative The United Nations Environment Programs (UNEP) in 1992 at the R10 summit, recognized the relevance of Banks' sustainability as per their statement (UNEP, 1992) by banks on the environment and sustainable development. Banks became signatory to this statement. This was the first critical statement that challenges banks' ability to be in sustainable business. (Weber, et al 2008)In 2011 UNEP finalized another statement of commitment by financial institutions on sustainable Development

The Role of Ethical Bank

The role of an ethical bank is to work for the common good and ensure the right to receive credit through a bank activity consisting in raising funds and reallocating them in the form of credits for cultural, social and environmental projects. Through their activity, ethical banks promote social inclusion, sustainable development, development of social economy and social entrepreneurship. Ethical banks also have a role to raise public awareness on the role of money and the failure of the economy based on short-term and profit as the only objective

Under these circumstances the objective of the paper is to find out whether Ethical Banking can be an alternative to Conventional Banking, by reviewing available literature from 1989 to 2015

Literature Review

Conventional Banks engage in whole gamut of banking activities .It has a set of quantitative objectives, focuses on maximizing profits and market share; hence maintain high risk investment portfolios. Their stakeholder base is not screened for damages caused to the environment and impact of their behaviors to the society. Ethical Banks have financial and social objectives. They encourage ethical behaviors of all stakeholders; refrain from engaging in anti-social, environmentally damaging business relationships, and are guided by set of ethical values. Ethical Banks too engage in all form of banking activities which fall under their defined areas. (Barbu and Boitan (2009)

Banks are involved in National and International business activities they facilitate the payment mechanism , accept deposits and provide credit facilities to lager part of community (Hoepner &Wison,2010) Banks are connected to any segment of the community through lending .It allocates funds to multiple industries , it in turn stimulate the economic growth (Jeucken,2001). Banks have been involved in supporting the economic growth, and playing an important role in International trade. Banks were playing an important role in allocating money to different industries which propel the economic growth. (Jeucken, 2001)Banks act as financial intermediaries. Therefore banks are responsible as intermediaries to all community of stakeholders (Bernard, 1989). Hence Banks are responsible to the society at large. It is responsible not only to the Government, but to customers, staff, shareholders and the community (Green,1989)

As per Green 1989, Banks extend its responsibility to government customers, committees shareholders and staff. The financial crisis of 2008 the public and media started paying a favorable attention towards Ethical and Social banks. De-regulation of banking business in certain parts of the world increased the risk taking by bankers to enhance the returns to shareholders at the cost, of another segment of stakeholders-the society (Green,1989) Free market economy coupled with less cautious regulatory surveillance helped banks to engage in speculative trading activities than providing service to the community (Lynch, 1991). Many experts promoted strict regulations for adventurous financial instruments and risky credit policies (Hogan and Sharpe,1989) The growing credit portfolios has increased Conventional Bank Risk(Kohler,2015) It is noted that stringent regulations and strict supervision increase the cost to the banks, resulted in banks taking higher risks(Shrieves and Dahi,1992;Jacques and Nigro,1997) Banks are finding ways to reduce their cost of raising capital by engaged in regulatory arbitrage(Jones,2000)

It is the risk – reward structure of the banks that weigh the reward against the risk, the higher the risk higher the profit. Banks engage in morally undesirable practices such as speculative business and poor lending practices are unacceptable (Brennan, 2003) Basel committee on banking supervision of Bank for International Settlements Basel Switzerland, the current International standard framework for assessing capital adequacy of banks, introduced Basel 1 and replaced it by more stringent Basel 2 and more stringent Basel 3 will be in force in 2020. Although the regulatory requirement was able to regulate risk capital but was not sufficient enough to cover banks from risk (Stiglitz,2003) and it manages the risk appetite of banks, yet it is considered to be inadequate.(Barth et al..2004) It is not only the capital adequacy that banks must maintain, they are expected to enhance the quality of life of people by mandatorily practicing their operations ethically (Jemali,2007)Banks needs to serve the stakeholders including the society at large by engage in responsible banking practices which will ensure fair lending and pave the way for financial inclusion (Schoenmaker &Werkhoven,2012) The civil society representations demanded banks to be more responsible in considering high social and environmental standards when providing loans for projects (Barnes,2009) There can be a misconception that CSR activities of Banks are part of ethical banking, which is more of an ethical correction to boost the corporate image (Carnvale et al, 2011; Scholtens,2009). Traditional Banks get a competitive advantage by engage in CSR activities which adds value (Perrini et al. ,2006)

Sustainability was not limited only to the environment; it includes other components as well. UNEP 1992 statement requires the banks to ensure adopting right environmental practice. The statement has recognized the importance of sustainability. Banks must engage in sustainable development by not meeting the requirements of present generation with resources of future generations and it should be made top among priorities of banks. Banks involvement of damaging of environment is not due to its existence and operation but its desire to make high profits. These high profits can come from the bankers irresponsible lending to industries, individuals, business who engaged in producing materials that a hazardous and pollute environment or they engage in finance trade related transaction to import/ export these materials. There has been a growing concern and consensus the academic community that banks are indirectly responsible for damaging the environment (Sarokin and Schulkin,1991; Smith,1994). The environmental risk has encouraged the banks to identify impact on environment in credit appraisals (Coulson and Dixon, 1995; UNEP , 1992,1995; Vaughan,1994; Wanless, 1995). The banks through their lending activities involve themselves in degrading the environment. (Cowton, 2008).

Due to pressure groups influences and the heavy lobbying by NGOs⁴ for banks to be responsible environmentally and socially in their credit grantings, a declaration was made at the World Economic Forum 2003 – “*The Collevocchio Declaration on Financial Institutions sustainability*” (Bank Track). This Declaration has 6 principles as follows, Commitment to - sustainability, to ‘Do no Harm’, Responsibility, Accountability, Transparency and Sustainable Markets and Governance. Further major financial institutions including banks have signed the UNEP financial initiative for responsible investment To incorporate ESG (Environmental, Social and Governance) issues into Investment Practices, following six Principles for Responsible Investment developed by investors for investors and are a voluntary and aspirational set of investment principles.(www.unpri.org)

It is also noteworthy that banks also have subscribed to the ‘_Equator Principles’ a framework for banking industry to address environmental and social risks in financing projects. The idea is to have a minimum due diligence standard for decision making, while responsibly assessing risk. Complexity of Business of banking makes it difficult to identify a borderline between what is legitimate and what is not (Carse, 1999). A participatory, transparent system was necessary in banking to allocate resources to identified areas, which will ensure economic, social and environmental performance (Barresi and Marisca , 2011) Banks considered it is important to maintain business ethics apart from practicing sustainable development practices. It is noted that ethics has a role to play the in evolving banking industry (Cowton,2002)There was need for an alternate banking system which stick to high ethical principles, ensures sustainable development and financial inclusion. Hence the need for alternate banks were much in demand .Set of banks following ethical principles emerged in developed countries in 1980’s called ethical Banks. At the beginning of 20th century, there have been certain savings institutions following ethical principles (Kundid,2014)

Ethical Banking

Many authors have defined ethical banking in different ways; Weber and Remer (2011) definition of social banking as —Banking that aims to have a positive impact on people, environment and culture| Cowton(2002) stressed that main ethical areas of banking, are responsibility, integrity and affinity. San-Jose et al (2011) highlighted that the purpose of ethical banking is to aim for social and economic profitability. There is no formerly agreed common definition on ethical Banks, Both academics and practitioners classify these banks under the synonym ‘_Social Banks’. There were a set of financial institutions that are classified under ‘_Social banking’. The following have been gathered under this ‘_Ethical Bank, Sustainable bank, Green Bank, Cooperative bank, Alternative bank, Credit Union and Micro Finance Institutions. There is one fundamental element common in the term ‘_Social Banking’ which represents the different aspects relating to the concept of Social Change and Development (Benedikter, 2011) A more comprehensive definition was given in 2009 by one of co-founders of Tridos Bank (an ethical bank) De Clerk that —Social, ethical, alternative, sustainable, development and solidarity banking are denominations, that are currently used to express particular ways of working with money, based on non-financial deliberations. They are characterized by value driven impulses and practices at the core of their business. These values are embedded in Ethical Banking products (Dobson, 1993) savers and investors of these banks are sensitive to the environmental and social issue and are keen to know where there are money is invested (Edery,2006; Lynch,1991) Money, intelligently and wisely invested as an instrument for improving (the) quality of life, can have a major impact on human development. Because of this impact, a neutral attitude to investment and lending is irresponsible. It is evident from this definition that ethical Banks are motivated by the development of human being and society and their activities are targeted towards achieving this. Initially in 1992 a basic definition of social banking was proposed —social banking is banking that fights poverty| (Refiner and Ford, 1992). This definition does not cover any responsibilities of a bank towards adding value to the society and it is not specific enough. A different dimension was added in 2006 by Refiner in his later definition that social banking should enhance the people’s financial literacy (Reifner, 2006) Ethical banks have been defined as an alternative to conventional banking and its strategy includes ethical and social values (Karl ,2015).The role of an ethical bank is to work for the common good and ensure the right to receive credit through a bank activity consisting in raising funds and reallocating them in the form of credits for cultural, social and environmental projects. Through their activity, ethical banks promote social inclusion, sustainable development, development of social economy and social entrepreneurship. Ethical banks also have a role to raise public awareness on the role of money

and the failure of the economy based on short-term and profit as the only objective (Febea) Ethical Banks has a daunting task to find staff who identifies themselves with the values of the bank (Von Passavant ,2011) The Ethical banks are approachable, responsible and focuses more on community than Conventional Banks (Benedikter,2011) .These banks offer attractive terms for socio- environmental investments which in turn increase not only economic gains but improves the environment and society.(Lins &Wajinberg,2007) . Wetting customers before accepting their money helps Ethical Banks to avoid amoral business relationships. This prevents them from accepting money originating from armaments trade (Kendric, 2004)

Financial crisis started in 2007, signified the importance of ethical and Social Banks. The growing clientele of Ethical and Social Banks was an ample testimony of peoples' response to the financial crisis (Weber and Remer, 2011). The Ethical Banks in Europe recorded a two fold increase in their asset base during 2007-2010due to its popularity among small depositors (Bendikter,2011).The importance of Ethical Banks have already been established and may increase in years to come (Kohler,2010) Ethical banks have become popular among communities as reliable banking Institutions. An ample testimony was the robustness they displayed during the last financial crisis. Ethical banks have gained customers due to the irresponsibility and negligence of conventional banks (Ijeoma, 2014; Rodriguez Gutierrez, 2013; Borgia, 2013) .These banks are accepted not only because of the trust between depositors and bank officials ,it is also due to the social returns other than economic returns (Davies,2001). Depositors of these banks willingly forgo major part of their interest as far as Ethical Banks Fund attract customers who seeks funds for socially beneficial projects(Cornee and Szafarz,2013; P8)

Ethical Banks distinguishes itself from Conventional Banks in many ways such as distribution of assets, stakeholder participation, management of risk and transparency (San-Jose, Retolaza and Gutierrez-Goria, 2011). Ethical Banks has proven their stability during and after the financial crisis, which could be an answer to the unstable financial system. (Fessmann, 2013). Karl (2015) was of the opinion that Conventional Banks ignores the concepts such as social justice and solidarity. Savers of ethical Banks accept low interest for deposits and borrowers receive funds at low interest, and these morally sound processes are results of common values shared by borrowers and Ethical Banks (Cornee and Szafarz ,2014) Ethical Banks expertise on sectoral credit, help to improve the quality and monitoring of portfolios(Acharya et al,2006). It also broadly involve their stake holders such as employees and shareholders in their management strategies through structural and procedural adjustments

Discussion

The above literature reviewed indicates that there was a growing demand from society at large for banks to be more environmentally and socially responsible and due to public lobbying “*The Collevocchio Declaration on Financial Institutions sustainability*” (Bank Track) was signed at the World Economic Forum 2003.. The civil society continued its demand for banks to ensure high moral and social standards in considering project loans (Baranes, 2009). Banks have neglected certain segments of society. Civil society demanded banks to involve all stake holders and engage in responsible lending practice which will ensure financial inclusion of all societies (Schoenmaker & Werkhoven, 2012) Bank presence has not affected the environment badly, but its irresponsible lending has degraded the environment (Cowton, 2008) .Alternative Banking systems were emerging to make a positive impact on people, environment and culture (Weber and Remer 2011). Ethical Banking was emerging as an alternative to conventional banking. Cowton (2008) identified main areas of Ethical Banking are responsibility, integrity and affinity. Ethical Banks are not only motivated by financial profits, its aim is to have both economic and social profitability (San-Jose et al, 2011).These Banks are accepted by society not only due to the trust,but aslo due to their earning social profits along with economic profits(Davies,2011).The financial crisis in 2007due to inefficiencies of Conventional Banks increase the demand for Ethical Banking. Webber and Remer (2011) argued that growing clientele of Ethical Banks was the response to financial crisis. The increase in Customer portfolios of Ethical Banks were due to irresponsibility and negligence of Conventional Banks (Ijeoma, (2014; Rodriguez Gutierrez, 2013; Borgia, 2013) The Customer demand for ethical alternative in banking is increasing. Kholer(2010) is of the opinion that the importance of Ethical Banks is already established. Ethical Banks increased their asset bases due to increasing no of customers moving from conventional bank to Ethical Banks .This was evident as the asset base of Ethical banks in Europe has doubled from 2007-2010 due to its popularity among small depositors (Benedikter,2011). As per Fessmann (2013) Ethical banks have proven their stability during and after the financial crisis. Therefore it could be an answer to the failing mainstream banking system. The exhibit 1 below identifies the basic differences of Conventional Banking system and an Ethical banking System based on literature reviewed .

Conventional banking Vs Ethical Banking

Conventional Commercial Banking

Financial return for bank, employees, investors and customers

Seek short term profit maximization, preferably by way of quarter on quarter growth

Work behind customer confidentiality to be opaque, if not secretive, about where they work and invest

Use wholesale and customer funds to fund their loan book

Treat customers as transactional profit centers

Rigid hierarchy of decision making leads to bank lending in its own image, without taking into consideration the needs of local communities

Rigid hierarchy of organization structure leads to silo approach and extended chain between top and bottom

Ethical Banking

Promotion of economic activities

Promotes financial inclusion

Aims a positive impact on Environment

Encourages Sustainable development

Fights poverty

Enhance the Quality of peoples life

Do not engage in speculative banking

Maintains transparency

Screen customers for human rights violations, amoral businesses and environmental damages Ensures equality in remunerations

Source: (Barbu and Boitan (2009) FEBEA, and Literature Review

It is evident that the acceptance of ethical Banking is on the increase. Ethical banks have a challenge to find staff that identify themselves with the values of Ethical Banking (Von Passavant, 2011) Karl (2015) identifies Ethical banking as an alternative to Conventional banking. There is a growth of ethical banks. As per Kholer(2015) the presence of Ethical banks may increase in the years to come. The failure of conventional banking has paved the way to an Ethical alternative; hence Ethical banks are emerging as an alternative to Conventional Banking.

Conclusion

It is evident from literature that Conventional Banking has not been operating up to the expectations of all stakeholders. In their drive to maximise profits they have neglected a part of society, environment and culture. Their lending to environmentally hazardous business, morally unsound business ventures, violators of human rights and armament manufacturers have affected the sustainability of the earth and the mankind. The short term profit making of Conventional Banks has distanced a part of society from receiving banking services. There has been growing demand from civil society for banks to be more ethically oriented. Different types of banks were emerging as an alternative to Conventional Banking. It is apparent from literature that Ethical Banking is one such system of banking which has gained popularity over the years. The purpose of Ethical Banks is to achieve a sound triple bottom line, sustainable growth and financial inclusion. The financial crisis 2007 was a result of a falling mainstream banking system. As per the reviewed literature it is evident that Ethical banks are more resilient than Conventional Banks during the financial crisis. Therefore a need arose for an alternative banking system. Ethical banks are accepted as an alternative to Conventional banking as they are not only motivated by economic profit but by social and ecological profit. There have been many researches carried out in western part of the world on this subject, but very few were available in eastern part of the world. Researchers could not find any research done in Sri Lanka on the same subject; hence this paper fills this gap. It is recommended that research could be carried out in Sri Lanka to identify Whether Ethical banking once introduced could be an alternative to Conventional Banking. For further research, these findings can be investigated using empirical data,

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Long run/Short run Relationship between Inflation and Oil Price in Sri Lanka

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Abstract

The volatility in the oil prices has the implications towards the macro economic variables of developed and developing countries. Recent highs in the world oil market are causing for possible slowdowns in the economic performance of countries. This study examines the long run / short run relationship between inflation and crude oil prices to give some guidelines for possible economic implications. Colombo Consumer Price Index was used as the proxy for inflation. Deductive approach has employed using the secondary data over the period from January 2008 to April 2018. Augmented Dickey Fuller Test was used to identify the stationary of the data set. Results suggested that there is a unit root in level series and thus the first difference series of both variables were used for the analytical purposes. Initially, to identify the long run relationship, Johansen-Juselius (1990) cointegration test was used and the results revealed that there is a significant long run negative relationship between Colombo Consumer Price Index and crude oil prices. Furthermore, to identify the short run relationship, Impulse Response Analysis and Variation Decomposition Analysis were used. Results suggested that there is a short run relationship between above variables too. Further, Impulse Response Analysis suggested that the shock of the oil prices impact to the Sri Lankan economy through the Colombo Consumer Price Index was started after 3 months and more than 8 months goes to become to the normal situation. The empirical findings of this study is helpful for government policy makers, financial managers, financial analysts and other interested parties who is dealing with the Sri Lankan economy. Very recently, the government policy makers have taken steps to revise the fuel pricing formulae on a bimonthly basis. But there want to be a much issue if those formulae were revised on a trimonthly basis.

Keywords: Inflation, Oil price, Cointegration

INTRODUCTION

The behavior patterns of an economy can be studied under two general fields as micro economics and macroeconomics. Macro economy is mainly used to focus on the aggregate changes in the economy such as GDP, unemployment rates, growth rate, inflation, savings, investment, international trade and international finance. Among these macro-economic variables, more consideration should be drawn towards the factor “inflation” due to its vast impacts.

The inflation is a most important factor that can affect the people’s living state. In Sri Lanka, there are four indicators which is used to measure the price stability as Colombo consumer price index (CCPI), Greater Colombo consumer price index (GCPI), Wholesale price index (WPI) and Implicit Gross Domestic Products Deflator (GDPD). Maintenance of price stability is needed for an economy because it can lead to harmful effects. Due to a high inflation, an unfavorable expansion of income, discouragement of savings, unfavorable condition in balance of payments, decrease in economic growth, increase of budget balance and appreciation of foreign exchange would occur.

There are many causes for inflation. Among them, increase in the money supply, high national debt, increase in wages (demand pull effect), increase in production cost (cost push effect) and fluctuation of exchange rates play a vital role. Cost push inflation occurs when the prices of production inputs increase. A price increase in raw materials and rise in energy price (a sharp rise in imported Brent oil) can lead to increase the cost of production. A high production cost can lead to a decrease in aggregate supply and it can lead to an increase in price for commodities. Based on this theory, it can drive that crude oil (Brent oil) has some kind of an effect towards the inflation.

As Sri Lanka does not produce petroleum, it has to import petroleum products which are required for the various purposes of the nation. In the year 2014, the total cost of importation of petroleum products (Brent oil and refined products) amounted to Rs.600 billion and it represented approximately 6.1 percent of the Gross Domestic Products (GDP) of Rs.9,785 billion in the year 2014 valued at current prices. Further it was equal to approximately to 24 percent of the total imports of Rs.2,535 billion in the year 2014. (Annual Report of Ceylon Petroleum Corporation, 2014). Sri Lanka mainly imports crude oil, refined products, coal and L.P Gas. Main sectors like transport, power generation, aviation, industries, domestic and farmer community, banking sector and export sectors will be mainly powered by Brent oil. In

Sri Lanka, use of Brent oil for power or energy generation marks a significant milestone due to the prevailing bad weather conditions and increase in demand for electricity in the country.

A volatility in the crude oil price (Brent) can affect every micro unit of typical oil importing under developed or developed countries. Unlike in the case of stable investments such as stocks and bonds, Brent oil can be subject to greater fluctuations. The activities done by the U.S government and OPEC (Organization of Petroleum Exporting Countries), future contracts for oil in the commodity market, change of the demand and supply of the crude oil (Brent) in the international market, natural and man-made disasters can drive up crude oil prices if they are dramatic enough. Anyhow price instabilities in Brent oil can lead to decline in the economic goal attainments.

As Sri Lanka is a developing country, the country acts as a price taker from the international oil market. Hence the government of Sri Lanka has taken steps to revise the fuel formulae on a bimonthly basis. The volatility of the Brent oil prices of the international market can affect the Sri Lankan price of Brent oil either during a short period of time or within a long period of time.

Being a strategic input of economy, energy prices affect the whole economy such that both public and private policy makers in all countries consider energy price as a crucial economic factor. In fact, any increase in the prices of energy leads to a proportional increase in the price consumers pay for goods and services. The direct and indirect impacts of energy prices on economic variables are studied by numerous researchers (Stern, 2011). As such many researches have been done across decades to find out the relationship between crude oil prices and macro-economic variables. But in Sri Lankan context only little number of studies can be found. And also only limited number of studies has been conducted to find out the long term and short term impact on economy by the fluctuations in crude oil prices. Hence it is clear that more empirical work is needed to carry out regarding this topic. To fulfill that gap researcher conduct this research considering impact of crude oil prices on inflation. So this research will be helpful to fulfill the research gap in the Sri Lankan context.

In other words, it can be clearly said that, this study will reveal the answer to the question that, whether there any long run or short run relationship between oil price and inflation in Sri Lanka

LITERATURE REVIEW

Scholar's special attention adverted towards to variety of models, analytical tools and methodology related to this studied area and key findings of the previous studies were summarized as follows.

When concern the situation of developed countries;Cologni and Manera (2008) investigated the impact of oil price on inflation and interest rate in G7 countries by using vector auto-regressive framework for the period of 1980 to 2003. The result of the study showed that except the Japan and UK, oil prices were significantly impact in inflation in other countries. As well as impulse response function analysis suggested that the existence of an instantaneous, temporary effect of oil price change on inflation.

In the case Greece, Filis (2010) examined the relationship between oil price and inflation for the period of 1996:1 to 2008:6. Unified statistical framework is used to study the data in levels and then VAR model was adopted to identify the relationship between variables. The empirical result suggested that the oil price positively effect on Consumer Price Index in the long run.

However in Kenya as an emerging country, Kiptui (2009) examined the impact of oil price pass-through to inflation in order to inform monetary policy decisions in Kenya and for the analytical purpose, scholar adopted a Philips curve approach. The empirical results were shown that 10 per cent increase in oil prices results in 0.5 per cent inflation in the short run and one per cent in the long run. Furthermore Olomola and Adejumo (2006) examined the nature of the oil price fluctuations and Nigerian economic activities for the period from 1970 to 2003. For this study scholar used VAR models and the results of this study was some extent contrary to previous empirical finding in other countries due to oil price fluctuations does not affect inflation and output of Nigeria. As well as Umar and Kilishi (2010) investigated the relationship among oil price shocks and Nigerian economy and the result of the study was almost same to the previous one.

When concern the overall nature of the impact of oil price shocks to inflation in Asian countries, there were some important findings and as a whole which agreed with the findings of other out of Asian countries.

Du, Yanan and Wei (2010) studied the relationship between world oil price and China macro-economy. Monthly time series macro related data from 1995 to 2008 and vector auto-regressive model (VAR) were employed for this study. The results showed that the world oil price affects

the economic growth and inflation of China significantly, and the impact is non-linear as well as China's economic activities fails to affect the world oil prices. In same context, Tang, Wu and Zhang (2010) investigated oil price shocks and their short-and long-term effects. The result of the vector auto-regressive model showed that an oil-price increase negatively affects output and investment, but positively affects inflation rate and interest rate. Furthermore, their decomposition results also showed that the short-term impact of oil-price on inflation in China context.

Bhattacharya and Bhattacharyya (2001) investigated the impact of increase in oil prices on inflation and output in India using monthly data from April 1994 to December 2000. VAR models were employed for this study and results attempted to identify the lag structure in which a rise in the prices of petroleum begins to affect the prices of other commodities and output. Furthermore, the VAR model discovered that a 20 percentage point increase in oil prices course to a 1.3 percentage point increase in inflation in other commodities and which usually occurred after five to seven months after the shock. As well as above impact on prices persists for about two years.

Cunado and Gracia (2005) examined the impact of oil price shocks on economic activities and inflation in six Asian countries such as Japan, Singapore, Malaysia, Thailand, South Korea and Philippine using the data from 1975 to 2002. The empirical findings of this study is that the oil price is significantly impact on both economic activities and inflation as well as the impact is limited to the short run and more significant when oil price shocks are defined in local currencies. Furthermore Chang and Wong (2003) found a strong positive impact from oil price to inflation in Singapore context.

IMF study indicates that for the industrial countries as a whole, a US \$ 5.0 per barrel increase in oil price reduces GDP by 0.3 percentage points and leads to an increase in inflation in the short run. The same study also reveals that among developing countries, the impact of a sustained oil price increase widely varies across countries (IMF 2000).

These findings paw the way to conduct a research to identify the relationship between inflation and crude oil prices for Sri Lankan context.

METHODOLOGY

Data

This study has employed the deductive approach using the secondary data over the period from January 2008 to April 2018 on a monthly basis. Monthly frequency data on Colombo Consumer Price Index (CCPI) and Brent oil prices has obtained from Data Library of Central Bank of Sri Lanka.

Data Analysis and presentation

Statistical analysis are used to describe an account for the observed validity of the data. The researcher has used inferential statistics for this study. Inferential statistics are used to draw conclusions about the reliability and generalizability of the findings. In this study, the researcher has used ADF (Augmented Dickey Fuller Test), JJ test (Johansen-Juselius test), Impulse Response Analysis and Variation De Composition Analysis.

Augmented Dickey Fuller Test

An important initial step of the research is to conduct unit root tests on the variables used. Thus, the unit root analysis, using the Augmented Dickey Fuller Test is also an important part of this research. The order of integration was established using the Augmented Dickey Fuller (ADF) test which consists of running a regression of the first difference of the series against the series lagged once, lagged difference terms, and optionally, a constant and a time trend.

Johansen-Juselius Cointegration Test

The Johansen-Juselius (1990) cointegration test is a statistical method for testing for cointegration. The Johansen-Juselius approach is based on a VAR model of order p to examine the long run relationships that may exist among representative variables. The Johansen-Juselius approach can be expressed mathematically in the following general form:

$$Y_t = \mu + A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + \dots + A_p Y_{t-p} + \varepsilon_t \quad (1)$$

Where Y_t is a vector containing p variables, all of which are integrated of order one and the subscript t denotes the time period. μ is an $(n \times 1)$ vector of constants, A_p is an $(n \times n)$ matrix of coefficients where p is the maximum lag included in the model, and ε_t is an $(n \times 1)$ vector of error terms.

Impulse Response Analysis

The concepts and tools were developed to interpret VAR models. The most important are the causality concepts, forecast error variance decomposition and the impulse response analysis. For this research, impulse response analysis and Variation De Composition Analysis test has been used.

The impulse response analysis quantifies the reaction of every single variable in the model on an exogenous shock to the model. Two special cases of shocks can be identified: The single equation shock and the joint equation shock where the shock mirrors the residual covariance structure. In the first case we investigate forecast error impulse responses, in the latter orthogonalized impulse responses. The reaction is measured for every variable a certain time after shocking the system. The impulse response analysis is therefore a tool for inspecting the inter-relation of the model variables.

Variation De-Composition Analysis

For any variable, short run variations are due to its own shocks, but over time other shocks contribute to these changes as well. Forecast error variance decomposition (FEVD) is a method available to examine this interesting phenomenon. In fact, while the IRFs analyze the dynamic behavior of the target variables due to unanticipated shocks within a VAR model, variance decompositions determine the relative importance of each innovation to the variables in the system.

ESTIMATION AND RESULTS

Unit Root Test

One of the underlying property in time series data is whether the variables that in our models are stationary or non-stationary. Thus, for test the stationary in our variables, Augmented Dickey-Fuller (ADF) unit root test was used. As well as macro-economic data behave normally in stochastic trend and that can be removed by differencing the variables.

Table 01 - Results of the Augmented Dickey Fuller Test

Augmented Dickey Fuller				
Variable	Level Series		First Difference Series	
	ADF Statistic	Pob. Value	ADF Statistic	Pob. Value
CCPI	-1.7384	0.4094	-8.4447	0.000*
OP	-2.4301	0.1357	-6.6872	0.000*

Note: * Indicates stationary at 5% level.

According to Table 01, the results suggested that the level series in CCPI and OP are not stationary due to ADF statistics for both variables are not less than the critical value of 05%. However regarding the first difference series, the null hypothesis of “variable has a unit root” was rejected due to calculated ADF statistics for both variables are less than the critical P-value of 05%. Thus the results of stationary process can be concluded as whether the level series are not stationary, both variables in first difference series are stationary under 5% probability level.

Long Run Analysis

Selection of Optimal Lag Lengths;

Determine the optimal lag length for VAR system is necessity for identify the cointegration between variables. For that scholars used five criteria which are sequential modified (LR) test, final prediction error criteria (FPE), Akaike information criteria (AIC), Schwarz criteria (SC), and Hannan-Quinn information criterion (HQ). The results as follows;

Table 02 - Optimal Lag Length for VAR System

Lag	LogLikelihood	LR	FPE	AIC	SC	HQ
0	-1080.41	NA	1011628.0	19.50282	19.55164	19.52263
1	-1070.89	18.52541	915876.6	19.40336	9.54983*	19.46278
2	-1064.67	11.86596	880162.3	19.36349	19.60760	19.46252
3	-1055.15	17.84845*	796934.0*	19.26395*	19.60569	19.40258*
4	-1052.72	4.463268	820131.5	19.29226	19.73164	19.47051
5	-1052.17	0.986400	873287.3	19.35447	19.89149	19.57232
6	-1048.02	7.332219	871636.5	19.35172	19.98639	19.60919
7	-1047.19	1.430769	923996.1	19.40889	20.14120	19.70597
8	-1047.13	0.100855	993504.4	19.47989	20.30984	19.81657
9	-1042.42	7.810731	982755.2	19.46706	20.39465	19.84336
10	-1041.92	0.820673	1049149.0	19.53002	20.55524	19.94592
11	-1038.11	6.032177	1055963.0	19.53354	20.65641	19.98905
12	-1036.22	2.935045	1100686.0	19.57148	20.79199	20.06661

Note: * indicates the lag order selected under 5% probability level.

According to the results of Table 02, except to the SC criterion, all other four criteria suggested that the optimal lag length for VAR system is three due to each test's calculated statistics are less than the critical value of 05%. Whether the SC criterion suggested as optimal lag length is one, four criteria out of five suggested it as lag length three. Thus scholars selected lag length three as optimal lag length for the further proceedings.

Optimal lag length implies that the time period which are taken by the CCPI for react to the OP change. On the other words, change of the oil price in world market may affect to the Sri Lankan economy after three months of that variation. This can be happened due to Sri Lanka imports crude oil under some hedging contracts and usually Sri Lankan government not take quick actions against to the world oil price variations. Thus, we cannot expect an immediate reaction on CCPI when change of the word crude oil drum price. Hence the optimal lag length of three months is justifiable.

Results of the Johansen-Juselius Cointegration Test

For identify the long run and short run relationship between CCPI and OP in the system assuming as there exists a liner trend in VAR and the cointegrating relationship only has an intercept. The approach of maximal eigenvalue and trace statistic of Johansen and Juselius was used to determine the number of cointegrating vectors and the following table 03 and 04 presents the results of above tests at the 05% significant level.

Table 03 -Johansen-Juselius Cointegration Test (Trace Statistic)

Hypothesized No. of CE(s)	Trace Criterion			
	Eigen value	Trace. Stat	0.05 Critical Value	Probability
None*	0.4396	101.894	15.49471	0.0001
At Most One*	0.2365	32.3826	3.841466	0.0000

Table 04 -Johansen-Juselius Cointegration Test (Maximum Eigen Statistics)

Hypothesized No. of CE(s)	Maximal Eigen Criterion			
	Eigen value	Max.Eig.Stat	0.05 Critical Value	Probability
None*	0.43969	69.51177	14.2646	0.0000
At Most One*	0.23651	32.38261	3.841466	0.0000

According to the results of Table 03 and 04, both of max-eigenvalue statistic and the trace statistics suggest a same answer which is two cointegrating vectors are significant at 5% level. Thus the key finding of those two test is there exist a long run relationship between OP and

CCPI in the system. Further this finding can be present as a mathematical equation and it as follows;

$$\text{CCPI} = -0.00075 \text{ OP} \quad (01)$$

(0.00017)

The equation 01 indicate that there is a significant negative long run relationship between Colombo consumer price index and oil price in world market.

Actually this finding is some extent contrary with the previous scholars' findings. Whether the sign of the coefficient of OP is negative, its absolute magnitude is very small. On the one hand, most of the time Sri Lankan government bear or act in assailable way to the changers of the oil price in world market. Due to this, when the changers of the world oil price impact to the Sri Lankan economy through the CCPI, there may some modification possibility of that change. Thus this negative coefficient may possible.

Short Run Analysis

For identify the short run dynamic behavior of the variables, impulse response analysis and forecast error variance decomposition were used.

Impulse Response Function (IRF) Analysis

Impulse response function tries to capture the time period of the dependent variable which spend to come to the equilibrium after the shock of independent variable in the VAR system. Further IRF helps to understand the magnitude, direction and length of the time period that the CCPI affected by a shock of the OP in the system.

According to the figure 01, the dotted lines show the 95% confidence bands in the impulse response function. The middle line indicates the responding time period which are taken by the CCPI to come to the equilibrium after the shock of OP in world market. As well as the IRFs indicates that there is a statistically significant short run relationship between CCPI and OP. Furthermore, the figure 01 indicates that the response comes to the maximum stage in third month and after that approximately five months are taken for come to the neutral. Thus the results of IRF often implies that there is a contemporaneous effects of world oil price changes on Colombo consumer price index.

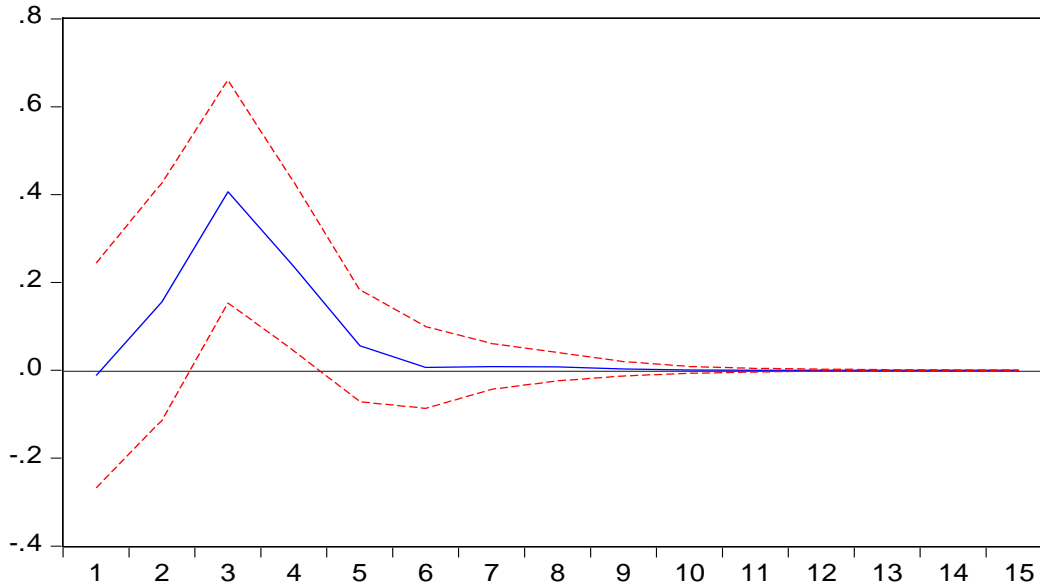


Figure 01 - Impulse Response Functions of the CCPI to Cholesky One S.D. Innovations

Forecast Error Variance Decompositions (FEVD)

The variance decomposition measures the proportion of forecast error variance in one variable explained by innovations in itself and the other variables in the system. In this study, FEVDs indicates the percentage of variation in the forecast error of the CCPI that is due to its own shocks versus shocks to OP in the system.

Table 05 - Variance Decomposition

Period	S.E	CCPI	OP
1	1.339702	99.99113	0.008866
2	1.369007	99.02273	0.977267
3	1.443950	89.50544	10.49456
4	1.530855	87.22393	12.77607
5	1.536505	87.15486	12.84514
6	1.547578	86.13171	13.86829
7	1.562328	85.38009	14.61991
8	1.564044	85.26100	14.73900
9	1.565093	85.21348	14.78652
10	1.567010	85.13124	14.86876
11	1.567237	85.11450	14.88550
12	1.567397	85.11235	14.88765

Table 05 indicates the FEVD for the CCPI over 12 months period and the degree of the influence of the CCPI in the OP change systematically become neutral approximately after

eight months. Hence the test of FEVD implies that the OP has a significant effect on the CCPI and the results of FEVD agree with the results of IRF.

Hypothesis Testing

According to the findings, Johansen-Juselius Cointegration test found that the long run relationship between CCPI and OP. The IRFs indicate that there is a statistically significant short run relationship between considered variables. Thus the fitted null hypothesis (H_{0B}) of “there is no any significant long run / short run relationship between CCPI and OP” was rejected and alternative one was accepted.

CONCLUSION

The impact of Brent oil prices on economic variables become more and more significant because of larger amount of oil consumption, higher dependence on the imported oil supply and due to the usage of market oriented oil pricing mechanisms. In this paper, we tried to investigate the impact of crude oil prices on inflation of Sri Lanka based on monthly data from 2008 to 2018.

Augmented Dickey Fuller test, Johansen cointegration test, Impulse response analysis and Variance Decomposition analysis has been employed as statistical tools. To test the stationary of the variables, ADF test has been used. The results of the test suggested that the level series is not stationary. Therefore, for the further proceedings, first difference series has been considered as it was stationary. Prior to deciding the long run relationship, it is needed to find out the optimal lag length. Out of the LR, FPE, AIC, SC and HQ criteria's, four tests suggest lag 3 while a one test suggest lag 1. Thus lag 3 has been selected as the optimal lag length for the further proceedings.

To find out the long run relationship, JJ test has been used at the 05% significant level and it suggests a significant negative long run relationship between the crude oil prices and CCPI. To identify the short run relationship, IRF and VDA tests has used. According to IRF test, it suggests that Sri Lanka will take eight months to become neutral after a price shock and also this outcome was proved by the results of the FEVD test also.

Findings of this study is contradictory with the findings of Filis (2010) and Tang, Wu and Zhang (2010) who found positive effect of oil price on inflation in the long run. Cologni and

Manera (2008) and Du, Yanan and Wei (2010), investigated a significantly impact of oil price to the inflation as we found.

The findings of this research suggest that there is a short run relationship as well as a long run relationship exists between Brent oil prices and inflation of the country. Hence the scholars suggest that policy makers have to pay more attention towards the oil pricing mechanisms and seem it need a huge revision.

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Macroeconomic Influence on the Stock Market: A Review

Influence on the Stock Market: A Review

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Abstract

The purpose of this study is to systematically review the finance theories, macroeconomic variables and the econometric methods employed by the past studies to investigate the nexus between the macroeconomic variables and the stock market. The study employs 58 studies, published in journals, which are rated by the Australian Business of Deans Council (ABDC). As per the review, dividend discount model, arbitrage-pricing theory and the efficient market model are the commonly used finance theories by the selected literature. The review results further showed that, selected past research have given more emphasize towards the macroeconomic variables and very poor attention on the international and global macroeconomic variables. Moreover, past studies have employed a very limited range of econometric methods to examine the association between the macroeconomic variables and the stock market.

Key Words: Stock market, macroeconomic variables, dividend discount model, arbitrage pricing theory, efficient market model.

INTRODUCTION

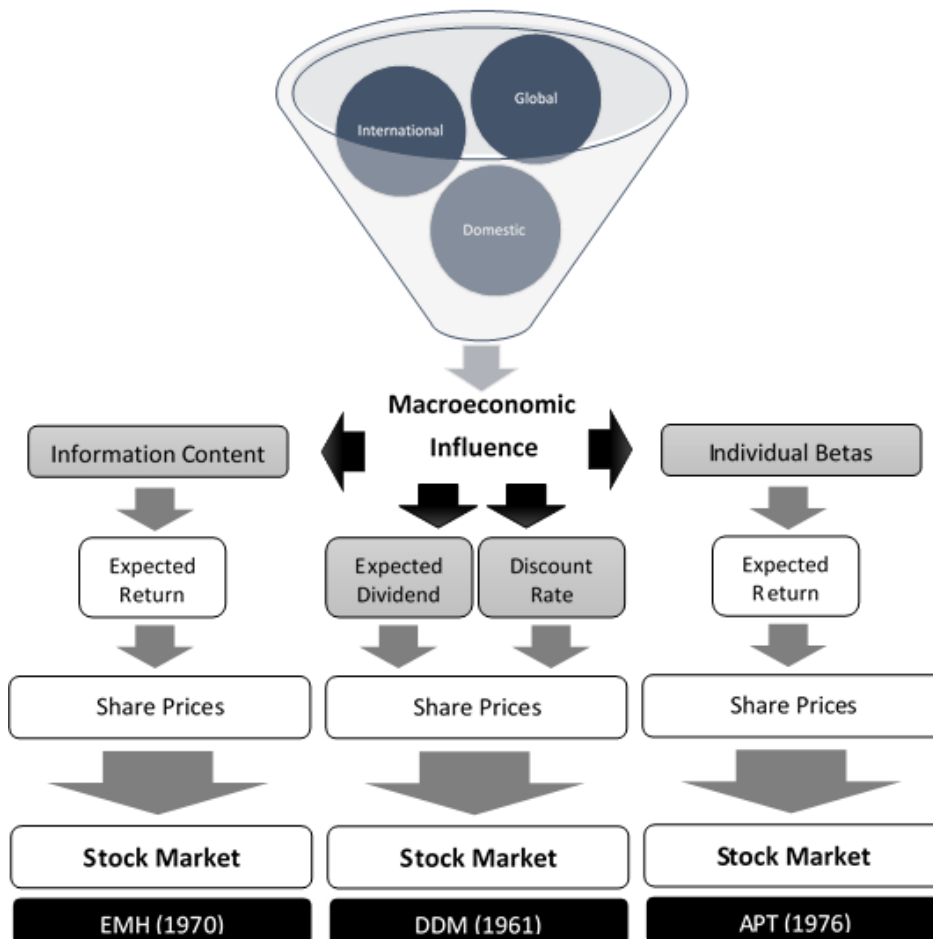
According to the theory of economics, an economy is a system, which allocates scarce resources among competing ends of a particular society. Macroeconomic variables are indicators which signal the current trends in the economy, like, the gross domestic product, rate of employment, consumer price index, balance of payments, broad money supply, lending interest rate, house hold consumption etc. (source: <https://data.worldbankindicator.org/>) . Stock market is an important segment in the financial system of any economy, as it facilitates the allocation of scarce resources, by channeling the funds through the surplus units to the deficit units. As a part of a widespread economic system, stocks markets are inevitably exposed to the influences emerge within this system.

Over the past few decades, a large growing body of literature has investigated the influence of macroeconomic variables on the stock markets. However, a very poor attention has been given towards the review of such literature. Therefore, this paper aims to fill that gap by conducting

a comprehensive review on the carefully selected literature on this area. This study carries out a thorough literature review based on 58 studies, published in the journals, which are rated by the Australian Business of Deans Council (ABDC). The review comprises; the finance theories depict the nexus between the macroeconomic variables and the stock market, investigated macroeconomic variables and their effect to the stock market, and various economic tests and models employed to investigate the nexus between macroeconomic variables and the stock markets. The review will have important implications mainly for academic researchers.

Theories on Macroeconomic Influence on Stock Market

Figure1 : Theoretical Background for the Nexus between the Stock Market and the Macroeconomic Variables.



Dividend Discount Model (DDM)

DDM (Miller and Modigliani, 1961) emphasizes the role of expected future dividends (or expected cash flows) and discount rate (or rate of return) in determining the current stock price. Change in any economic variable which influences expected cash flows and required rate of return will affect stock prices (Chen, Roll and Ross, 1986; Clare and Thomas, 1994; Khan *et al.*, 2015). Previous studies (for example; Gjerde and Sættem, 1999; Morelli, 2002; Gunasekarage, Pisedtasalasai and Power, 2004; Verma and Ozuna, 2005; Srivastava, 2010; Quadir, 2012) have highlighted the importance of DDM, in explaining the theoretical background of the nexus between stock prices and macroeconomic variables.

Efficient Market Hypothesis (EMH)

EMH (Fama, 1970) emphasizes the importance of available information in determining the share prices. Number of studies have attempted to examine market efficiency in respect to macroeconomic information (Gay, 2008; Kurov and Stan, 2018). Ibrahim (1999) concludes that Malaysian stock market is not informationally efficient with respect to consumer prices, credit aggregates and official reserves. Kurov and Stan (2018) report that S&P 500 is significantly responding to the macroeconomic announcement emerge from real activity (which includes GDP, unemployment rate, employment, personal income, consumer credit), consumption (which includes new home sales), investment (which includes durable goods orders), government budget and prices (which includes producer price index).

Arbitrage Pricing Theory (APT)

APT (Ross, 1976) assumes that the returns on the particular subset of assets under consideration are subjectively viewed by agents (or factors) in the market. A number of studies have been carried by employing APT to analyze the effect of macroeconomic variables on stock returns (or share price). Chen, Roll and Ross (1986) have developed a five-factor model including the macroeconomic factors; industrial production, expected inflation, unanticipated inflation, excess return of long-term corporate bonds over long-term government bonds and the excess return of long-term government bonds over T-bills. Clare and Thomas (1994) conclude that number of macroeconomic factors (such as oil prices, retail price index, UK private sector bank lending, current account balance) have been priced in the UK stock markets. Groenewold and Fraser (1997) propose a multifactor model, which incorporates both local and global macroeconomic variables. Srivastava (2010) employs a multifactor model to identified

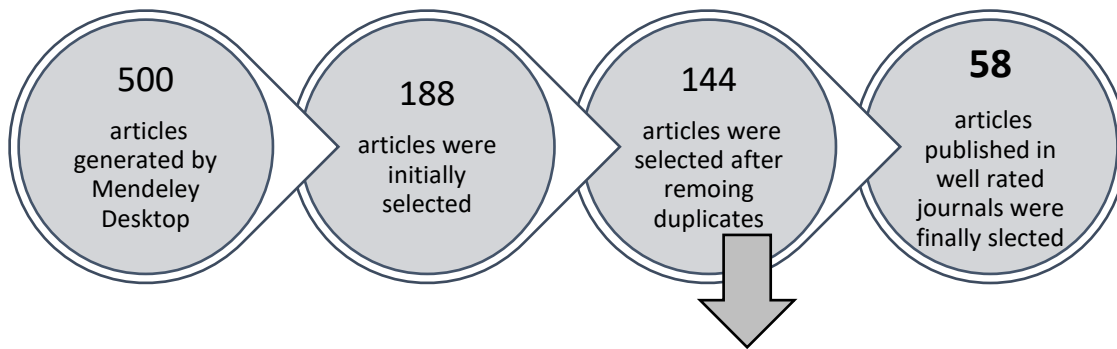
macroeconomic factors (such as industrial production index, MSCI world equity index) which can explain pricing process of Indian stock market. Geambaşu *et al.* (2014) in their study apply APT on the Bucharest Stock Exchange and determined the macroeconomic factors with influence over shares' return.

METHODOLOGY OF LITERATURE REVIEW

This study adopts the systematic literature review methodology following Tranfield et al. (2003) and Singh and Kumar (2014). As it is not possible to review all available literature on the topic, this review uses following delimiting boundaries for screening literature. These boundaries are;

- Papers which were published within the period 1986 to 2018 were considered;
- Papers with full-text available were considered.
- Papers published only in the journals rated by ABDC were considered;

For compiling the sample of published journal papers, a literature search was carried out in the light of Mendeley Desktop (version 1.19.1) , based on the keywords “Macroeconomic Variables and Stock Market” to be found in title, keywords or abstract. Initial search resulted in 481 published articles related to the topic. Subsequently, 188 articles were selected which are closely related with the research topic. Further screening removed 44 published articles which were duplicated. Finally, only 58 articles were selected as there were rated by the ABDC. The final sample of published 58 journal articles were analysed with respect to the citations, the year of publication, methodology used, journal of publication, country studied, econometric methods employed and macroeconomic variables examined and their impact on the stock market. Summary of systematic process of article selection and analysis presented in Figure 2.

Figure 2: Summary of Systematic Process of Article Selection and Analysis

Systematic Analysis of Articles
Analysis by Year of Publication
Analysis by Journal of Publication

Analysis by Country Studied

Analysis by Research Methodology

Analysis by the Macroeconomic Variable and their impact

ANALYSIS AND DISCUSSION OF LITERATURE

Fifty-eight articles identified through the systematic literature review are analyzed in this section with respect to the citations, the year of publication, methodology used, journal of publication, country studied, econometric methods employed and macroeconomic variables examined and their impact on the stock market. The analysis is done to understand the trends and issues in the literature relevant to the macroeconomic influence on the stock market.

Citation Analysis

Citations means that someone has referenced work of other author(s). The citation analysis means studying cited references of a population of articles to find the most influential works in the field (Singh and Kumar, 2014). Current study used the citation information provided by Google Scholar for the purpose of citation analysis. The citation of each article is presented in Table 1.

Table 1: Citation of Articles

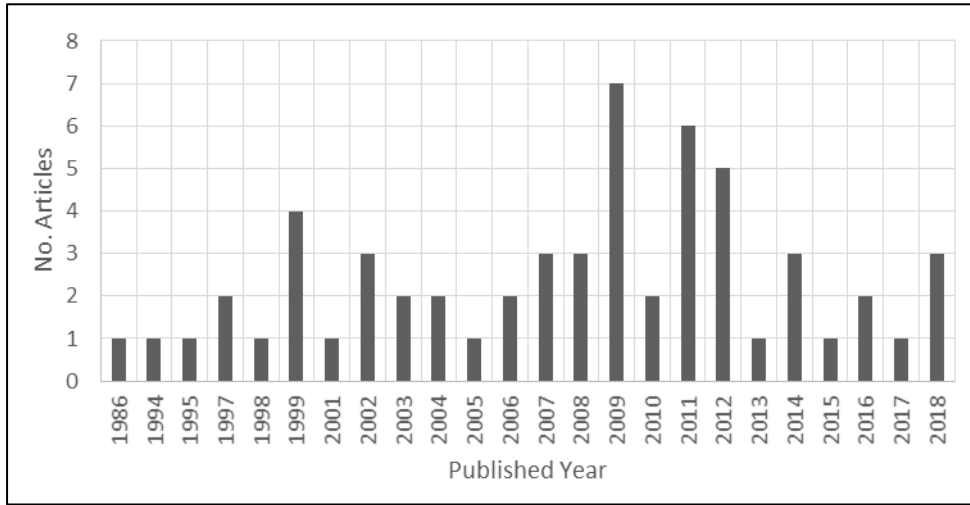
Author(s)	No. Citations	Author(s)	No. Citations
1 Chen, Roll and Ross (1986)	5896	30 Rjoub, Türsoy and Günsel (2009)	71
2 Flannery and Protopapadakis (2002)	895	31 Hsing (2011)	70
3 Mukherjee and Naka (1995)	698	32 Tsoukalas (2003)	66
4 Wongbangpo and Sharma (2002)	432	33 Hussainey (2009)	58
5 Kwon and Shin (1999)	420	34 Yartey (2010)	56
6 Humpe and Macmillan (2009)	372	35 Brahmasrene and Jiranyakul (2007)	55
7 Bilson (2001)	336	36 Laopodis (2011)	49
8 Gjerde and Sættem (1999)	327	37 Shabri-Abd-Majid and Yusof (2009)	46
9 Ibrahim and Aziz (2003)	307	38 Quadir (2012)	46
10 Gay (2008)	265	39 Verma and Ozuna (2005)	40
11 Ratanapakorn and Sharma (2007)	233	40 Ready (2016)	36
12 Abugri (2008)	231	41 Srivastava (2010)	33
13 Gan, et al. (2006)	230	42 Havie (2007)	28
14 Chen (2009)	212	43 Ozcan (2012)	28
15 Ibrahim (1999)	194	44 Bouri, Jain and Biswal (2017)	26
16 Beltratti and Morana (2006)	194	45 Hsing (2011a)	23
17 Clare and Thomas (1994)	176	46 Hsing and Hsieh (2012)	21
18 Groenewold and Fraser (1997)	171	47 Snieska, Laskiene and Pekarskiene (2008)	15
19 Hondroyannis and Papapetrou (2001)	137	48 Ato-Forson and Janrattanagul (2013)	14
20 Kyereboah-Coleman and Agyire-Tettey (2011)	126	49 Bhattarai and Joshi (2009)	11
21 Pal and Mittal (2011)	124	50 Kumari and Mahakud (2014)	11
22 Errunza and Hogan (1998)	120	51 GeambaÄYu (2014)	10
23 Gunasekarage, Pisedtasalasai and Power (2004)	119	52 Yang et al. (2018)	8
24 Lijebloom and Stenius (1997)	114	53 Bhargava (2014)	8
25 Morelli (2002)	105	54 Kurov and Stan (2018)	7
26 Chinzara (2011)	87	55 Hassan and Al-refai (2012)	7
27 Osamwonyi and Evbayiro-osagie (2012)	83	56 Khan, et al. (2015)	7
28 Pilinkus and Boguslauskas (2009)	79	57 Kotha and Sahu (2016)	7
29 Hooker (2004)	71	58 Bastianin (2018)	6

It has found that all selected articles are cited more than 5 times. The 58 articles have 13,617 cited references. Average reference number was 235 per article. (Chen, Roll and Ross, 1986) is the most-cited article with 5896 citations. Mukherjee and Naka (1995), Kwon and Shin (1999), Flannery and Protopapadakis(2002) and Wongbangpo and Sharma (2002) were also among the top five most-cited publications on macroeconomic influence on the stock market.

Analysis by Year of Publication

As per Figure 3, the analysis by year of publication shows that the selected articles were published almost consistently through the period from 1994 to 2018. Most of the research articles published are concentrated in 1999, 2009, 2011 and 2012. The highest number of studies is reported in 2009, which is 7. This could be attributed due to world economic slowdown during 2008 to 2009, which has urged the importance of investigation on macroeconomic influence on the stock market. The collapse in US economy in 2011 and the resulted world economic slowdown can be shown as the reason for the increased number of studies in the periods 2011 and 2012.

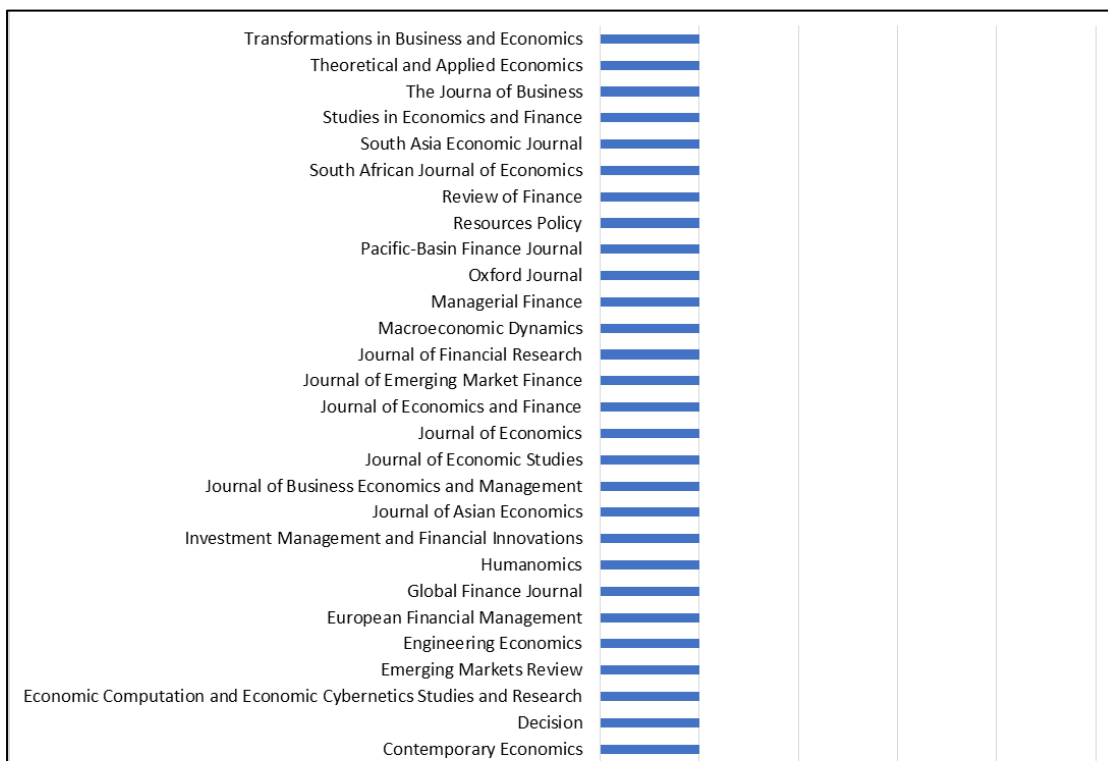
Figure 3: Analysis by the Year of Publication



Analysis by Journal of Publication

The analysis by journal aims to identify the journals most involved in the study of literature about the macroeconomic influence of the stock market. In sum, 42 journals contained the selected published articles. All these journals are rated by the ABDC. Figure 4 presents those with more than one articles published on the macroeconomic impact on the stock market. It also shows that there are 9 such journals which provide more than one article. Applied Financial Economics provides maximum of 5 articles, while International Journal of Economics and Financial Issues provides 4 articles published on macroeconomic impact on the stock market during 1986-2018.

Figure 4: Analysis by Journal of Publication



Analysis by Country Studied

Table 2 reports the countries chosen for selection of sample by the selected articles for the research. As per the table, 10 studies were carried out in based on USA market, which is the highest. Next is the Indian Market, which is appeared in 9 studies. Researchers have also given more priority towards the countries; Malaysia, Thailand, Brazil, Chile, Mexico, Turkey, Indonesia, Jordan, Pakistan, Philippines, South Africa, South Korea and Sri Lanka. There are 39 countries which appear in more than two studies.

Table 2: Analysis by Individual Countries Covered by Studies

	Country	No. of Studies		Country	No. of Studies		Country	No. of Studies
1	Argentina	3	24	India	9	47	Portugal	2
2	Argentina	2	25	Indonesia	4	48	Romania	2
3	Australia	1	26	Israel	1	49	Russia	2
4	Bangladesh	3	27	Italy	1	50	Saudi Arabia	1
5	Belgium	1	28	Jamaica	1	51	Singapore	1
6	Bolivia	1	29	Japan	2	52	Slovak	1
7	Botswana	1	30	Jordan	4	53	Slovenia	1
8	Brazil	6	31	Kenya	1	54	South Africa	4
9	Bulgaria	1	32	Lithuania	2	55	South Korea	4
10	Chile	5	33	Malaysia	7	56	Sri Lanka	4
11	China	3	34	Mexico	5	57	Switzerland	1
12	Colombia	3	35	Morocco	2	58	Taiwan	2
13	Costa Rica	1	36	Nepal	1	59	Thailand	7
14	Cyprus	1	37	Netherlands	1	60	Tunisia	1
15	Czech Republ	3	38	New Zealand	1	61	Turkey	5
16	Ecuador	1	39	Nigeria	3	62	UK	3
17	Egypt	2	40	Norway	1	63	Uruguay	1
18	Finland	1	41	Pakistan	4	64	USA	10
19	France	2	42	Panama	1	65	Venezuela	3
20	Germany	1	43	Paraguay	1	66	Vietnam	1
21	Ghana	2	44	Peru	2	67	Zimbabwe	2
22	Greece	3	45	Philippines	4			
23	Hungary	2	46	Poland	3			

Table 3 presents analysis by Morgan Stanley Capital Incorporation (MSCI) market classification (in 2018) and the number of countries covered by the studies. MSCI classifies stock markets as; developed emerging, frontier and standalone markets. As per the figure, researchers mainly focus on a single country setting for their study (47 studies). A little number of articles report on multiple counties settings (only 11 studies), which indicate lack of

systematic literature to compare findings across different contexts and cultures. According to this figure, the number of studies has been carried out within the emerging market context and developed market context. Only few studies are found within the frontier market context, which cover only one country. And no study is found within the frontier market context which cover multiple countries. Few studies are carried out between emerging and frontier markets, and emerging and developed markets. No study has been carried out covering frontier and developed markets, to investigate the macroeconomic influence on the stock markets.

Table 3: Analysis by MSCI Market Classification and the Number of Countries Covered by the Studies

	Single Country	Multiple Countries	Total (No. Articles)
Developed markets	17	3	20
Emerging markets	20	6	26
Frontier markets	8	0	8
Emerging & Frontier markets	-	1	1
Emerging & Developed markets	-	1	1
Frontier & Developed markets	-	0	0
Unclassified by MSCI	2	0	2
Total	47	11	58

Analysis by Research Methodology

Table 4 shows the frequency of the data used in the study. As per the table most of the studies has collected monthly data. The use of monthly data rather than daily or quarterly or annual data is in order to maximize the number of observations (Errunza and Hogan, 1998; Morelli, 2002; Yang *et al.*, 2018).

Table 4: Analysis by Frequency of Data

Data Frequency	No. Studies	Percentage
Daily	3	5%
Monthly	42	72%
Quarterly	10	17%
Yearly	3	5%
Total	58	100%

Table 5 shows the analysis of literature based on the econometric models and tests employed to investigate the macroeconomic impact on the stock market. As per the table, selected published articles adopt 18 econometric methods. Unit root test, the test of stationarity, is the most popular test within the selected studies as almost all the studies use time series data. Many studies (18) have employed cointegration analysis to investigate the long-run association between the macroeconomic variables and the stock market. Short-term impact analysis methods such as VAR, IRF, VDC and Granger Causality test have also employed in more than seven studies. There are 15 econometric methods, which have been employed in more than two studies.

Table 5: Analysis by the Econometric Methods

	Econometric Method	No. Studies
1	Unit Root Test	23
2	Cointegration Analysis	18
3	Vector Autoregressive Model (VAR)	15
4	Impulse Response Function (IRF)	12
5	Variance Decomposition (VDC)	10
6	Vector Error Correction Model (VECM)	9
7	Granger Causality Test	8
8	Multifactor Regression Models	7
9	GARCH	7
10	Error Correction Mechanism (ECM)	5
11	ARCH	4
12	Autoregressive Distributed Lag (ARDL) Model	3
13	Autoregressive Integrated Moving Average (ARIMA) Model	2
14	Principle Component Analysis (PCA)	2
15	Innovation Accounting Analysis	2
16	The common long memory factor model	1
17	Generalized Method of Moments (GMM)	1
18	General-to-Specific (GETS) methodology	1

Analysis by Macroeconomic Variables and Their Impact

This section analyses the selected literature based on the macroeconomic variables, which have been investigated under the three sub-headings; domestic macroeconomic variables, international macroeconomic variables and global macroeconomic variables.

Domestic Macroeconomic Variables

Past studies identify, the domestic macroeconomic variables as country specific macroeconomic variables (by Gjerde and Sættem, 1999), state macroeconomic variables (by Fama, 1981; Chen, Roll and Ross, 1986; Clare and Thomas, 1994), country factors (by Abugri, 2008) and as local factors (by Khan et al., 2015; Yang et al., 2018).

Domestic Interest Rate

Proxies - Previous studies use a range of proxies for domestic interest rate for example; the term structure⁹ of interest rate (Chen, Roll and Ross, 1986; Clare and Thomas, 1994; Chen, 2009), 3-month treasury bill rate (Clare and Thomas, 1994; Khan *et al.*, 2015), 12-month treasury bill rate (Hondroyiannis and Papapetrou, 2001), 90-day bank-accepted bill rate (Groenewold and Fraser, 1997), 91-day certificate deposit rate (Yang et al., 2018), 3-month NIBOR rate (Gjerde and Sættem, 1999; Hooker, 2004), 6-month LIBOR rate (Snieska, Laskiene and Pekarskiene, 2008), Federal fund rate (Verma and Ozuna, 2005; Beltratti and Morana, 2006; Chen, 2009), policy interest rate (Abugri, 2008) and ten-year bond yield (Srivastava, 2010). Some researchers have used nominal interest rate (Osamwonyi and Evbayiro-osagie, 2012; Ozcan, 2012; Forson and Janrattanagul, 2013; Bhargava, 2014; Geambaşu *et al.*, 2014) while others use the real interest rate (Gjerde and Sættem, 1999; Hooker, 2004; Hsing, 2011a, 2011b).

Significant Impact - Mukherjee and Naka (1995), Hondroyiannis and Papapetrou (2001), Verma and Ozuna (2005), Abugri (2008), Humpe and Macmillan (2009), Hussainey and Ngoc (2009), Hsing (2011a), Kyereboah-coleman and Agyire-Tettey (2011), Hsing and Hsieh (2012) and Papadamou, Sidiropoulos and Spyromitros (2017) find a significant negative influence of domestic interest rate on the stock market. In contrast, Hussainey and Ngoc (2009) ShabriAbd.Majid and Yusof (2009) and Chinzara (2011) find a significant positive influence.

Short-run or Long-run Relationship - Moreover, a short-run nexus between domestic interest rate and the stock market was found by Gjerde and Sættem (1999), Pilinkus and Boguslauskas (2009), Al-jafari, Salameh and Habbash (2011) and Yang et al. (2018) whilst Bhattarai and Joshi (2009) Srivastava (2010), Ozcan (2012) and Kotha and Sahu (2016) find a long-run relationship.

⁹This is calculated as; treasury bond rate less treasury bill rate(Chen, Roll and Ross, 1986)(Clare and Thomas, 1994)

Causal Relationship - Furthermore, a bidirectional causality between the domestic interest rate and the stock market was found by Wongbangpo and Sharma (2002) and Gunasekarage, Pisedtasalasai and Power (2004) whilst Beltratti and Morana (2006), Gan et al. (2006), Ratanapakorn and Sharma (2007) and Kumari and Mahakud (2014) find an unidirectional causality from domestic interest rate to the stock market.

Insignificant Impact - However, Clare and Thomas (1994), Chanchart, Valadkhani and Havie (2007), Snieška, Laskiene and Pekarskiene (2008), Laopodis (2011), Hassan and Al refai (2012), Quadir (2012) Forson and Janrattanagul (2013) and Kumari and Mahakud (2014) do not find a significant relationship between domestic interest rate and the stock market.

Domestic Inflation

Proxies - Some researchers have used the general inflation rate of the economy to analyse the influence of the change in domestic price level on the stock market (Errunza and Hogan, 1998; Morelli, 2002; Hooker, 2004; Beltratti and Morana, 2006; Chen, 2009). On the other hand CPI or consumer price index is the most commonly used proxy for domestic inflation (Bilson, Brailsford and Hooper, 2001; Verma and Ozuna, 2005; Khan *et al.*, 2015; Yang *et al.*, 2018). Moreover, WSPI or whole sale price index (Srivastava, 2010), retail price index (Clare and Thomas, 1994) and the index of manufacturing prices (Groenewold and Fraser, 1997) have also been used as proxies for domestic inflation.

Significant Impact - Mukherjee and Naka (1995), Humpe and Macmillan (2009), Chinzara (2011), Hsing (2011a, 2011b), Kyereboah-coleman and Agyire-Tettey (2011) and Hsing and Hsieh (2012) find that domestic inflation has a significant negative influence on the stock market, but Clare and Thomas (1994), Wongbangpo and Sharma (2002) and Ratanapakorn and Sharma (2007) find a significant positive impact.

Short-run or Long-run Relationship - Moreover, a short-run nexus between domestic inflation and the stock market was highlighted by Ibrahim (1999), Al-jafari, Salameh and Habbash (2011) and Yang *et al.* (2018) whilst Bhattarai and Joshi (2009), Srivastava (2010), Ozcan (2012), Forson and Janrattanagul (2013) and Kotha and Sahu (2016) state a long-run relationship.

Causal Relationship - Furthermore, a bidirectional causality between domestic inflation and the stock market was found by Wongbangpo and Sharma (2002), Al-jafari, Salameh and Habbash (2011) and Kumari and Mahakud (2014) whilst Ibrahim (1999), Tsoukalas (2003),

Gunasekarage, Pisedtasalasai and Power (2004), Beltratti and Morana (2006) and Ratanapakorn and Sharma (2007) state an unidirectional causality from domestic inflation to the stock market.

Insignificant Impact - However, Mukherjee and Naka (1995), Gjerde and Sættem (1999), Bilson, Brailsford and Hooper, (2001), Flannery and Protopapadakis (2002), Morelli (2002), Ibrahim and Aziz (2003), Verma and Ozuna (2005), Gan *et al.* (2006), Chanchart, Valadkhani and Havie (2007), Snieška, Laskiene and Pekarskiene (2008), Pilinkus and Boguslauskas (2009), Hussainey and Ngoc (2009) and Khan *et al.* (2015) do not find a significant relationship between domestic inflation and the stock market.

Domestic Output

Proxies - GDP or Gross Domestic Production is the most commonly used proxy for domestic output (Pilinkus and Boguslauskas, 2009; Osamwonyi and Evbayiro-osagie, 2012). Other proxies are; expected GDP growth (Hooker, 2004), GNP or Gross National Production (Flannery and Protopapadakis, 2002; Wongbangpo and Sharma, 2002), industrial production (Chen, Roll and Ross, 1986; Clare and Thomas, 1994; Errunza and Hogan, 1998; Gjerde and Sættem, 1999; Bilson, Brailsford and Hooper, 2001; Morelli, 2002; Yang *et al.*, 2018), IIP or Industrial Production Index (Groenewold and Fraser, 1997; Abugri, 2008; Chen, 2009; Srivastava, 2010; Khan *et al.*, 2015). Some researchers have used nominal output (Beltratti and Morana, 2006; Humpe and Macmillan, 2009) whilst others use real output (Gan *et al.*, 2006; Hsing, 2011b).

Significant Impact - Clare and Thomas (1994), Flannery and Protopapadakis (2002), Abugri (2008), Humpe and Macmillan (2009), Hussainey and Ngoc (2009), Hsing (2011b, 2011a) and Hsing and Hsieh (2012) find a significant positive impact from domestic output to the stock market. On the contrary, Hondroyiannis and Papapetrou (2001), Brahmaasrene and Jiranyakul (2007) and Forson and Janrattanagul (2013) state significant negative impact.

Short-run and Long-run Relationship - Moreover, a short-run relationship between domestic output and the stock market was stated by Errunza and Hogan (1998), Al-jafari, Salameh and Habbash (2011) whilst, Kwon and Shin (1999), Srivastava (2010), Forson and Janrattanagul (2013) and Forson and Janrattanagul (2013) find a long-long run relationship.

Causal Relationship - Furthermore, a bidirectional causality between the stock market and domestic output was reported by Wongbangpo and Sharma (2002), Ratanapakorn and Sharma (2007), Al-jafari, Salameh and Habbash (2011) and Papadamou, Sidiropoulos and Spyromitros

(2017) whilst, Gjerde and Sættem (1999), Hondroyiannis and Papapetrou (2001), Tsoukalas (2003), Beltratti and Morana (2006) and Gan *et al.* (2006) report an unidirectional causality from domestic output to the stock market.

Insignificant Impact - However, Mukherjee and Naka (1995), Groenewold and Fraser (1997), Ibrahim (1999), Bilson, Brailsford and Hooper (2001), Morelli (2002), Laopodis (2011), Quadir (2012) and Khan *et al.* (2015) conclude that domestic output as insignificant.

Domestic Money Supply

Proxies - As per the literature, narrow money supply (M1) is the most common proxy of money supply (Clare and Thomas, 1994; Bilson, Brailsford and Hooper, 2001; Morelli, 2002; Verma and Ozuna, 2005; Beltratti and Morana, 2006; Chen, 2009). Other proxies are; M2 money supply (Liljeblom and Stenius, 1997; Flannery and Protopapadakis, 2002; Ibrahim and Aziz, 2003; Chanchart, Valadkhani and Havie, 2007; Hassan and Al refai, 2012), and M3 money supply (Groenewold and Fraser, 1997; Shabri Abd. Majid and Yusof, 2009; Chinzara, 2011; Kumari and Mahakud, 20A14; Kotha and Sahu, 2016).

Significant Impact - A significant positive impact of domestic money supply towards the stock market was reported by Mukherjee and Naka (1995), Flannery and Protopapadakis (2002), Shabri Abd. Majid and Yusof (2009) and Hsing (2011b). In contrast, a significant negative impact is reported by Clare and Thomas (1994), Errunza and Hogan (1998), Abugri (2008) and Humpe and Macmillan (2009).

Short-run and Long-run Relationship - Moreover, Errunza and Hogan (1998), Ibrahim and Aziz (2003), Pilinkus and Boguslauskas (2009) and Al-jafari, Salameh and Habbash (2011) highlight a short-run nexus between domestic money supply and the stock market, whilst a long-run nexus is pointed out by Kwon and Shin (1999), Ibrahim and Aziz (2003), Gunasekarage, Pisedtasalasai and Power (2004), Bhattarai and Joshi (2009), Hassan and Al refai (2012) Ozcan (2012), Forson and Janrattanagul (2013) and Kotha and Sahu (2016).

Causal Relationship - Furthermore, a bidirectional causality between domestic money supply and the stock market was reported by Wongbangpo and Sharma (2002) while, an unidirectional causality from domestic money supply to the stock market was found by Tsoukalas (2003), Gunasekarage, Pisedtasalasai and Power (2004), Beltratti and Morana (2006), Brahmaasrene

and Jiranyakul (2007) and Ratanapakorn and Sharma (2007). Unidirectional causality from stock market to domestic money supply (Al-jafari, Salameh and Habbash, 2011).

Insignificant Impact - However, Groenewold and Fraser (1997), Ibrahim (1999), Morelli (2002), Chanchart, Valadkhani and Havie (2007), Chen (2009), Chinzara (2011), Hsing (2011a) and Khan *et al.* (2015) find that domestic money supply as insignificant.

Other Domestic Macroeconomic Variables

Clare and Thomas (1994), Ibrahim (1999), Flannery and Protopapadakis (2002) and Mittal and Pal (2011) have analysed the impact of *domestic consumer credit* on the stock market. Chen, Roll and Ross (1986), Clare and Thomas (1994), Gan *et al.* (2006) Chinzara (2011) and Bastianin and Manera (2018) have studied the effect of *domestic crude oil prices* on the stock market. Effect of *domestic gold prices* was studied by Chinzara (2011). Gjerde and Sættem (1999), Morelli (2002) and Laopodis (2011) have investigated the nexus between *retail trade* and the stock market. Groenewold and Fraser (1997) and Flannery and Protopapadakis (2002) study the effect of *domestic employment* on the stock market while Snieška, Laskiene and Pekarskiene (2008), Pilinkus and Boguslauskas (2009) and Rjoub, Türsoy and Günsel (2009) study *domestic unemployment*. Chen, (2009) and Hsing and Hsieh (2012) investigate the impact of government *debt*. Flannery and Protopapadakis (2002) and Yartey (2010) analyse how *personal income* affect the stock market. Yartey (2010) analyses the impact of *domestic investment* on the stock market.

International Macroeconomic Variables

Past studies have used cross-country macroeconomic variables like exchange rate, inflation of a foreign country (Verma and Ozuna, 2005), regional macroeconomic variables like regional trade and regional economic activity (Khan *et al.*, 2015). In this study, “international macroeconomic variables” cover all the macroeconomic variables outside the local economy, but which are not recognised under the global macroeconomic variables (see the sub section 2.2.3).

Exchange Rate

Proxies - Foreign currency exchange rate expresses a currency in terms of another currency. Previous studies have frequently used USD/Local Currency exchange rate (Bilson, Brailsford

and Hooper, 2001; Hooker, 2004; Khan *et al.*, 2015; Yang *et al.*, 2018). In addition to that Yen/Local Currency (Groenewold and Fraser, 1997), German Deutsche/Local Currency (Morelli, 2002) exchange rates were also found in literature. Some researchers use the real exchange rate (Shabri Abd. Majid and Yusof, 2009; Kyereboah-coleman and Agyire-Tettey, 2011) whilst others use the nominal exchange rate (Ibrahim, 1999; Tsoukalas, 2003; Verma and Ozuna, 2005; Snieska, Laskiene and Pekarskiene, 2008).

Significant Impact - Clare and Thomas (1994), Hondroyiannis and Papapetrou (2001), Ratanapakorn and Sharma (2007), Chinzara (2011) and Kyereboah-coleman and Agyire-Tettey (2011) find that exchange rate has a significant positive impact on the stock market. On the other hand Ibrahim and Aziz (2003), Verma and Ozuna (2005), Brahmasrene and Jiranyakul (2007), Abugri (2008), Gay (2008) and Hsing (2011a) report that as negatively significant.

Short-run and Long-run Relationship - Moreover, a short-run relationship between exchange rate and the stock market was found by Ibrahim (1999), Pilinkus and Boguslauskas (2009) and Al-jafari, Salameh and Habbash (2011) whilst, Kwon and Shin (1999), Ozcan (2012) and Kotha and Sahu (2016) find a long-run relationship.

Causal Relationship - Furthermore, a bidirectional causality between exchange rate and the stock market was reported by Wongbangpo and Sharma (2002) by Al-jafari, Salameh and Habbash (2011) whilst, Ibrahim (1999), Wongbangpo and Sharma (2002), Tsoukalas (2003) and Gan *et al.* (2006) report a unidirectional causality from exchange rate to the stock market.

Insignificant Impact - However, Mukherjee and Naka (1995), Groenewold and Fraser (1997), Morelli (2002), Gunasekarage, Pisedtasalasai and Power (2004), Rjoub, Türsoy and Günsel (2009) and Srivastava (2010) find no significant nexus between exchange rate and the stock market.

Foreign Interest Rates

Proxies - Abugri (2008), Hussainey and Ngoc (2009) and Khan *et al.* (2015) investigate the influence of *U.S. 3-month T-Bill Yield* on domestic stock market. Hsing (2011b) analyses both *U.S. Government Bond Yield* and *UK Government Bond Yield*. Wu and Lee (2015) studies the impact of *U.S. Money Market Rate* and *U.S. Term Spread* on domestic stock market. Verma and Ozuna (2005) in their comparative study investigate the impact of foreign countries' interest rates (Argentina, Mexico, Brazil and Chile) on each stock market under the study.

Significant Impact - Hussainey and Ngoc (2009) and Hsing (2011b) report a significant positive relationship between foreign interest rate and the domestic stock market whilst, Abugri (2008) and Hsing (2011b) find a significant negative relationship.

Insignificant Impact - An Insignificant influence was found by Verma and Ozuna (2005) and Khan *et al.* (2015).

Foreign Stock Markets

Proxies - Hsing (2011b), Hsing and Hsieh (2012) and Wu and Lee (2015) studies the impact of *U.S. stock market Index* on domestic stock market. Hsing and Hsieh (2012) investigate the influence of *German stock market Index* on Poland stock market while Hsing (2011b) analyses the effect of *UK Stock Market Index* on South African stock market. Gunasekarage, Pisedtasalasai and Power (2004) find the influence of *S&P 500 Composite Price Index* and *Nikkei 225 Price Index* on Sri Lankan stock market. Hsing (2011b) and Hsing and Hsieh (2012) have found a significant positive nexus between foreign interest rate and the domestic stock market.

Significant Impact - Hsing (2011b) and Hsing and Hsieh (2012) have found a significant positive nexus between foreign interest rate and the domestic stock market.

Short-run or Long-run Relationship - Gunasekarage, Pisedtasalasai and Power (2004) found a long-run nexus between the US stock market and Sri Lankan stock market.

Causal Relationship - Gunasekarage, Pisedtasalasai and Power (2004) found a unidirectional causality from the US stock market to Sri Lankan stock market.

Insignificant Impact- Gunasekarage, Pisedtasalasai and Power (2004) found no significant influence from the Nikkei 225 Price Index to Sri Lankan stock market.

Foreign Output

Proxies - Hussainey and Ngoc (2009) in their study investigate the impact of *U.S. Industrial Production* on Vietnam stock market Khan *et al.* (2015)analyse the effect of *regional GDP* of South Asia on the stock markets in Bangladesh, India, Sri Lanka and Pakistan.

Foreign Inflation

Proxies - Verma and Ozuna (2005) in their comparative study investigate the impact of foreign countries' inflation (of Argentina, Mexico, Brazil and Chile) on each stock market under the

study. Khan *et al.* (2015) analyse the effect of *regional CPI* of South Asia on the stock markets in Bangladesh, India, Sri Lanka and Pakistan.

Significant Impact -Khan *et al.* (2015) analyse the effect of *regional GDP* of South Asia on the stock markets in Bangladesh, India, Sri Lanka and Pakistan and found a significant relationship.

Other International Macroeconomic Variables

Clare and Thomas (1994) and Ozcan (2012) have examined the impact of *current account balance* on the domestic stock market. Influence of the *trade balance* is studied by Liljeblom and Stenius (1997), Kwon and Shin (1999), Flannery and Protopapadakis, (2002), Hassan and Al refai (2012) and Khan *et al.* (2015). Also, Ozcan (2012) investigates the effect of *export volume* on the domestic stock market. Ibrahim (1999) and Hassan and Al refai (2012) have studied the influence of *official reserves* on the domestic stock market. Wu and Lee (2015) examine the impact of *U.S. M1 and M3 monetary aggregates, U.S. credit spread and U.S. unemployment rate* on the individual stock markets of ten industrialized countries. Khan *et al.* (2015) analyses the effect of *regional money supply and interregional trade balance* of South Asia on the stock markets in Bangladesh, India, Sri Lanka and Pakistan.

Global Macroeconomic Variables

In this review, “global macroeconomic variables” covers macroeconomic variables, which are common to the entire world. Bilson, Brailsford and Hooper (2001), Abugri (2008) and Khan *et al.* (2015) in their studies clearly recognize global economic variables.

Global Crude Oil Prices

Proxies - Arabian Light crude oil (Gjerde and Sættem, 1999) and Brent Crude Oil Price Index (Gunasekarage, Pisedtasalasai and Power, 2004) are found in literature as proxies of global crude oil prices.

Significant Impact -Gay (2008) reports that global crude oil prices have a significant positive impact on the domestic stock market whilst, Brahmasrene and Jiranyakul (2007) and Chanchart, Valadkhani and Havie (2007) report that as negatively significant.

Short-run or Long-run Relationship - Moreover, Hassan and Al refai (2012) and Ozcan (2012) find a long-run nexus between global crude oil prices and the domestic stock market.

Insignificant Impact - However, Gunasekarage, Pisedtasalasai and Power (2004) do not find any significant relationship.

Global Inflation

Proxies - Gunasekarage, Pisedtasalasai and Power (2004) and Khan *et al.* (2015) studies the impact of global inflation on the domestic stock market, by taking *world consumer price index* (WCPI) as the proxy.

Insignificant Impact - Gunasekarage, Pisedtasalasai and Power (2004) and Khan *et al.* (2015) found no significant impact.

Global Stock Market

Proxies - Previous studies have used *MSCI World Index* as a proxy of global stock market to investigate the nexus between the global stock market and the domestic stock market (Bilson, Brailsford and Hooper, 2001; Gunasekarage, Pisedtasalasai and Power, 2004; Hooker, 2004; Abugri, 2008; Srivastava, 2010; Khan *et al.*, 2015).

Significant Impact -Bilson, Brailsford and Hooper (2001), Abugri (2008) and Khan *et al.* (2015) found significant impact.

Insignificant Impact -Gunasekarage, Pisedtasalasai and Power (2004), Hooker (2004), Khan *et al.* (2015).

Global Output

Proxies - Khan *et al.* (2015) includes global output into his study. Previous studies have used *Industrial Production Index of the OECD*(Gjerde and Sættem, 1999)*world industrial production*(Gunasekarage, Pisedtasalasai and Power, 2004)and *world GDP*(Khan *et al.*, 2015) as the proxies of global output or production.

Significant Impact - Khan *et al.* (2015) found a significant relationship between the global output and the domestic stock market.

Insignificant Impact - However |Gjerde and Sættem (1999) and Gunasekarage, Pisedtasalasai and Power (2004) found it as insignificant.

FINDINGS FROM LITERATURE REVIEW

Based on the analysis of selected journal articles, the current study found following issues most relevant to literature on, macroeconomic impact on the stock market.

5.1 Poor attention towards global macroeconomic variables

The review of literature based on the macroeconomic variables has shown that very little attention has been paid to research the impact of global macroeconomic variables on the stock market. Although some research has been carried out to examine the impact of international macroeconomic variables on the stock market, very few number of international macroeconomic variables (for example exchange rate) covered by such studies.

5.3 Lack of research in frontier markets

Compared to developed and emerging markets, very little number of studies has been conducted in the frontier market context.

5.3 Lack of inter-country research

Most of the studies have given focus towards single country setting in evaluating the macroeconomic influence on the stock market. Very little number of studies was found which covers more than two countries. Identified research gaps in this connection are shown below;

- Poor attention towards the studies which cover multiple frontier markets,
- Poor attention towards the studies which cover frontier and developed markets,
- Lack of studies in the context of emerging and frontier markets,
- Lack of studies in the context of emerging and developed markets.

5.4 Lack of application in ARCH and GARCH models

Most of the studies have employed cointegration analysis, VAR, Granger Causality to examine the macroeconomic impact on stock market. Very poor attention was given by researchers to evaluate the association between volatilities of macroeconomic variables and the stock market by employing ARCH and GARCH models.

CONCLUSION

The review of literature based on the macroeconomic variables has shown that very little attention has been paid to research the impact of global macroeconomic variables on the stock market. Although some research has been carried out to examine the impact of international macroeconomic variables on the stock market, very few number of international macroeconomic variables (for example exchange rate) covered by such studies. This research gap can be filled by including many new and unexamined international and global macroeconomic variables into the future studies. Moreover, as the impact of given macroeconomic variables on a given stock market, varies based on different time intervals and based on different econometrics techniques employed. Thus, there is enough room to carry out research work time to time in the same context to capture and understand such impact.

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The Effectiveness of Using the Eclectic Method within the Second Language Classroom in the Sri Lankan context

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Abstract

Teaching and learning are two broad concepts that can be subjected to deep analysis. In accordance with the hypothesis made, it is essential to prepare for a lesson and be armed with a suitable strategy to impart knowledge such as the Eclectic Method. As a result of the researches carried out by Li, Freeman, Melloa, Osakine, Onijin, Atkinson, Falana and et al, it is disadvantageous to resort to the use of a single teaching methodology while a variety of strategies are available. Thus the best elements of all these methods can be incorporated in the Eclectic Method, aiming an effective teaching-learning experience. The lack of research work on the effectiveness of using the Eclectic Method within the local context, has paved way for the current study. Consequently, 500 learners and 40 educators were selected from the Sangabodhi National College and University of Colombo while the questionnaire method, informal discussions, interviews and observations are used for data collection. Amidst the unavoidable limitations such as the limited scope and data range, the hypotheses are proved, and it is also found out that a combination of structural and communicative aspects in teaching is consciously or unconsciously used, suggesting the use of the Eclectic Method within the local L2 classroom in varying degrees. However, the identified common combinations used for the Eclectic Method seem to be unsatisfactory and suggestions are made through the current study, further highlighting the advantage of resorting to the Eclectic Method, while paying significant attention to interesting, effective and different styles of combining structural and communicative aspects in teaching.

INTRODUCTION

Introduction to the Research

In the process of learning, there are several important factors to be considered and the role of the teacher is one such vital concern. In order to facilitate the learning process of students, a teacher needs to be prepared for the teaching session with an appropriate procedure or a methodology. A language teaching method is clarified by Nunan (2003) as “a single set of procedure which teachers follow in a classroom ... based on a set of beliefs about the nature of language and learning”. According to Richards and Rodgers (1982, 1985) a method is “an umbrella term for the specification and interrelation of theory and practice” which is encompassed of an “approach, design and procedure”. Approach refers to the “beliefs and theories about language”, design refers to the “function of teaching materials” and procedure concerns with “the techniques and practices employed in a classroom” (ibid).

Even though a variety of teaching methods can be discerned, it is problematic whether the use of a single teaching methodology in a classroom is effective. As human beings learn and understand concepts in different ways, a teacher can not base his teaching only on one method. Further more, the disadvantages of the usage of a single teaching methodology have been pointed out by several researchers and academics such as Li, Cruz, Freeman, Melloa, Osakine, Onijin and Falana. However, in using the Eclectic method, several teaching methods are combined, aiming an effective teaching and learning experience.

Research Scope, Objectives and Hypothesis

In examining the effectiveness of the use of the Eclectic Method at the secondary and tertiary level, 250 students from a reputed school in the researcher's area and 250 undergraduates from the University of Colombo are used. Hypothesizing that the use of the Eclectic Method is better than using a single teaching methodology, the study attempts to answer questions such as the significant role played by a teaching methodology in teaching a second language, what are the commonly adopted methodologies, what methods interest students to learn English and is a combination of structural and communicative approaches to teaching suitable for students. Further more, it is expected to examine whether there is a difference in the attitudes towards the teaching methods, when a single teaching method is used and when a combination of methods are utilized.

LITERATURE REVIEW

A plethora of researches have been done on Applied Linguistics in different contexts, which shed light to the current research.

Evolution of Teaching Methods

It is commonly believed that debate and developments around the methods of language teaching and learning have been ongoing since the time of Comenius in the 17th century, if not before (Rocha, 2012). In the recent past, language learning and the usage of specific teaching methods became popular especially after the II World War, with the great social and political demand that arose with regard to learning second languages. When specific attention is paid to the history of English language teaching, it can be discerned that numerous approaches have been used to expedite and ease language learning.

Up to late 1960 s, traditional approaches of teaching gave prominence to “grammatical competence as the basis of language proficiency (Richards, 2006). However, in 1970 s, a reaction to traditional language teaching approaches took place and “the centrality of grammar in language teaching and learning was questioned” as a result of the understanding that “language ability involved much more

than grammatical competence” and simultaneously the attention was paid to knowledge and skills needed to use language for varied communicative functions (ibid). Thus, old methods such as Audio-lingualism and Situational Approach lost their status while new methods were introduced.

Gradually with the arrival of the “post – method era”, since 1980 s, “a shift in language pedagogy, away from the single method concept as the main approach to language teaching” can be identified as a result of the failure to find out any prominent advantages of using one teaching method over another, by researchers (Thornbury 2009). Thus, the current trend of using the Eclectic Method or the use of an appropriate mixture of various methods came into being.

Advantages and Disadvantages of the Prevailing Individual Teaching Methods

In order to identify an effective combination of methodologies, it is important to be aware of both pros and cons of the individual teaching methods. The Grammar Translation Method (GTM) was the standard method of learning foreign languages such as Latin in the 19th century. The method focused on the technique of translation and students were supposed to gain knowledge of morphology and syntax and improve reading and writing skills by remembering relevant rules while no due recognition was given to spoken abilities which are needed in real life contexts. The teacher in such a context often explains a grammatical rule, with some example sentences including a bilingual word list to be studied by the students and consequently such classes are conducted in the student’s first language without providing ample opportunities to be exposed to the target language targeting language acquisition.

Cognitive - Code, in which over- emphasis of learning takes place, is also seen as a method “similar to the grammar translation method except that it focuses on developing all the four skills of language”. Though both these methods assist students to learn the basic grammar of a language and practice it and though the organization of the class is easy, these efforts can be tedious for a learner as in most cases, students are only “passive path followers” and it is better to combine such methods with some other interesting activities that provide variety and entertainment for the students to learn in a low stress level classroom.

During the latter part of the 19th century, the Direct Method (DM) emerged with the idea that “language could be taught through demonstration and action” and target language was used as the medium of instruction in order to give students a thorough knowledge of “pronunciation, grammar, speech and listening comprehension”. Even though it was the initial step taken to “abandon the first language as the frame of reference”, the method was criticized as a result of its “overemphasis on the

similarities between first language acquisition and second language learning” and due to the exhausted role that has to be played by the teacher (Lee 2012).

Harold Palmer and A.S. Hornby introduced the Situational Language Teaching Approach (SA) during 1920 s and 1930 s of which the special attribute is that new language items should be introduced and practiced situationally and not in isolation and also “material is taught before it is presented in written form” as language learning is believed to be a “habit formation” (Li 2012).

Audio-lingual Method (ALM) introduced in the mid - fifties (1964), is another traditional methodology based on dialogues which contain the grammar and vocabulary that the particular lesson focuses on and students are required to mimic the dialogue, memorize it, go through drilling, repetition and reinforcement to be thorough with the grammatical structure and vocabulary introduced, while ignoring the creativity in a language (Wilson 2012).

Communicative Language Teaching (CLT) came in to being with the target of making “communicative competence the goal of language teaching”. Being based on the theory of “language as communication” where language is believed to be “a tool for communication”, the teacher only acts as a “facilitator” in the communication process while the students learn within a “co-operative atmosphere” (Li 2012). Even though classes which are based on this methodology are very interesting and live, the students with a lower level of grammatical knowledge would find it difficult to develop perfect communicative competence smoothly in such a context in which, the students’ current knowledge of language affects the success of his communicative process.

Total Physical Response (TPR) designed by James Asher is based on a structural view of language and is based on three learning hypotheses: “first and second language learning are almost same, language is learnt through actions via right – brain and absence of stress is the key for successful language learning” (Li 2012). According to this approach, lessons start with drills while students are provided with a chance to enjoy classroom activities which will enable effective learning and speech production is postponed until the proper time comes.

The Silent Way (SW) designed by Caleb Gattegno highlights the importance of the teacher being silent while the students are given ample opportunities for the production of language. Consequently, autonomy and self-learning abilities of the students will increase while they are engaged in problem solving activities to which the teacher directs them (Li 2012).

Community Language Learning (COL) forwarded by Charles A. Curren is, before the teacher explains the relevant grammar points, students talk about interesting topics and the “knower” or the teacher will provide vocabulary assistance as well as the conversations made are tape – recorded to

be used to review in order to learn from them (Li 2012). However the lack of a syllabus becomes an issue for the complete effectiveness of this method.

In 1983, Tracy Terrell and Stephen Krashen introduced the Natural Approach (TNA) or the intuitive immersion method which is based on the natural way of acquiring a mother tongue by young children. Input which is a bit beyond the level of the learner is presented before speech ability arrives and then during “the pre – production stage” students will only listen and try to grasp the target language, but single words are produced during “the early – production stage” which lead to “the speech – emergent phase” in which students are engaged in communicative activities (Li 2012). Even though this method enables language acquisition of the students to a certain extent, the way grammar is dealt with can be identified as a weakness of this approach.

Georgie Lozanov who was influenced by Yoga and Psychology believed that learning happens successfully at a relaxed moment and introduced Suggestopedia (S) (Li 2012). In such a learning situation, learners act as infants in front of adult authority represented by the teacher and dialogues gain prominence in learning while classrooms are decorated and background music is also used to cater to the emotional requirements of learners. Moreover, the emergence of an internet age has awakened the use of E – communication or being exposed to a language through social groups and chat rooms and the use of computers and other technological apparatus which enable language learning (TECH). In addition, Total Immersion Method (TIM) “immerses the student directly and immediately in the target language” from the very beginning of teaching but it can be tedious learning for a weak student (2013). Thus the literature and the researcher’s experience make it evident that, successful results cannot be guaranteed through the use of a single method, and that the best approach would be to resort to the Eclectic Method, considering learner requirements and aims.

The Eclectic Method (ECLC)

As indicated by Atkinson who tried to recommend ECLC in teaching through his research (1988), no one who is aware of psychology and art of teaching would recommend a “monolithic model” of teaching. One of the main reasons for experimenting on the use of ECLC is the revelation that various students learn and understand concepts by different means, as students can be visual, auditory or kinesthetic learners. Consequently a teacher has to adopt a combination of methods to cater to all types of learners and to maintain interest in the lesson. With this kind of an understanding researchers have developed different Eclectic Approaches highlighting several methodologies.

Cruz’s ECLC consists a combination of the DM, ALM, S and TPR, utilizing all the benefits these teaching methodologies offer (Acevedo 2006). However, ECLC can not be thus restricted, when numerous methods which can be artistically combined in a classroom are available. Thus, going

beyond the research format of Cruz, the present research attempts to suggest the effectiveness of combining a variety of methods, following a coherent procedure. Here, the ideas of Freeman and Mellow become vital as they indicate the importance of combining structural and communicative approaches in teaching.

Freeman and Mellow (2000) who refer to “principled eclecticism”, have proved the significance of mixing structural approaches with communicative use of language (Shakir 2011). For instance structure of the language, traditional reading, writing and conversational activities are included in one lesson while the learner’s role is cooperative and the teacher acts as a facilitator.

Thus, as Li has also correctly mentioned, “monotonous activities can never keep students highly motivated and only various activities catch their attention”, hence; identifying and recommending the best combination for an effective use of the Eclectic Method is of high value. Consequently, following Freeman, Mellow, Li and et.al. the current research attempts to examine the effectiveness of using ECLC which combines both structural and communicative methods of teaching a second language.

Sample Population and Methodology

A sample population of 500 students who learn English at secondary and tertiary levels, is used for this research. From the total number, 250 students are from a reputed school in the researcher’s area referred to as the Sangabodhi National College (125 students from Grade 12 and 125 students from Grade 13), covering the secondary level. Similarly 250 undergraduates from the University of Colombo have been chosen from both Arts and Management faculties (125 1st year Arts students and 125 1st year Management students). Furthermore, 20 English teachers and 20 lecturers have also been questioned and interviewed, in order to enrich the research.

The students chosen for the study, have sat for the O/L G.C.E. exam and have passed the English test, showing a considerable amount of English language knowledge as required by a student of that age. The undergraduates chosen for the study are also newly recruited ones to the university after their secondary education and these undergraduates are in a lower level in the English proficiency Course. Thus, the two categories of the sample population seem to be in a closely related situation with regard to their language proficiency and their ideas with regard to effective teaching methodologies are reviewed and analyzed in this study. Questionnaires, informal discussions, interviews and observations were used in order to gain the data for this research work and the data was analyzed in order to gain valid conclusions.

DATA ANALYSIS

An effective teaching methodology – Perception of the educators

The selection of an effective teaching methodology and prior preparation for a lesson can be identified as two prominent factors in teaching. The responses to the questionnaire survey given by the educators endorse this fact. According to the responses given to question number 03 in the questionnaire that asks whether teachers and lecturers think that selecting a suitable methodology in advance is required, 19 school teachers out of 20, state that it is essential to select a relevant teaching strategy and prepare for the lesson, before stepping into the classroom. The data collected from university lecturers further validate this point as all the 20 lecturers who were questioned have affirmatively answered for question number 03. By giving prominence to the selection of an effective teaching methodology and for prior preparation for a lesson, most of the teachers target the realization of lesson objectives. Meantime, a relaxed classroom atmosphere where the teacher is confident in teaching is assured while trust is established between the teacher and student. That means, if there is proper preparation in advance, the educator is not stressed by being worried about what to teach and how to teach, and it would also enable him to be more confident and creative in the class, while winning the hearts of the learners.

Though this kind of an understanding about the theoretical background with regard to teaching is depicted by the majority of both parties, 05 school teachers have frankly pointed out that, sometimes the familiarity of the lesson which is resulted by years of teaching the same material and the overconfidence it brings, make them perceive prior preparation for a class as unnecessary. However, as one of the lecturers has accurately indicated, “how much ever we are thorough with a lesson, a proper layout of the day’s lesson which is up to date is essential” and “the preparation of the same lesson varies, depending on the level of students and the new classroom context”. Moreover, it is extremely important to evaluate the methods used for teaching, before repeating the same lesson in the same manner.

In considering another example, informant number 02 who is a school teacher has uttered that preparation is needed, but she would use her own preferred method. This answer questions the capacity of understanding of this teacher who has been teaching for 20 years. The reason is, it cannot be deemed as correct to follow our own preferred methods in teaching, basing on reasons such as our ease in teaching or believing that this particular method is suitable as it is what I have been using in teaching throughout the time.

There are few other factors to be considered here such as the class, context, time period, number of students, type of lesson, lesson objectives and the most suitable strategy to be used to impart the knowledge targeted by the lesson. For example, when the target of a particular lesson, is to build up the confidence of the L2 learner in talking, it is not very suitable to do a 01 hour or 02 hour class on writing a draft of a speech. That would obviously assist the students, but the teacher should be tactful enough to introduce some strategies to make the students talk at least a few words, without being afraid. Thus, it is evident that the selection of a proper teaching method and prior preparation for a lesson are requisites for a successful teaching–learning experience.

Commonly used methodologies – Perception of the educators

In considering the commonly used teaching methodologies by teachers and lecturers, the practical aspect with regard to the use of teaching strategies within the L2 classroom and the preferences and choices of the teachers and lecturers with regard to suitable teaching strategies can be understood to a great extent. Through questionnaire data, it is identified that both parties use the mentioned techniques in quite a similar way. For example, the rates of usage of GTM, CLT and COT are equal.

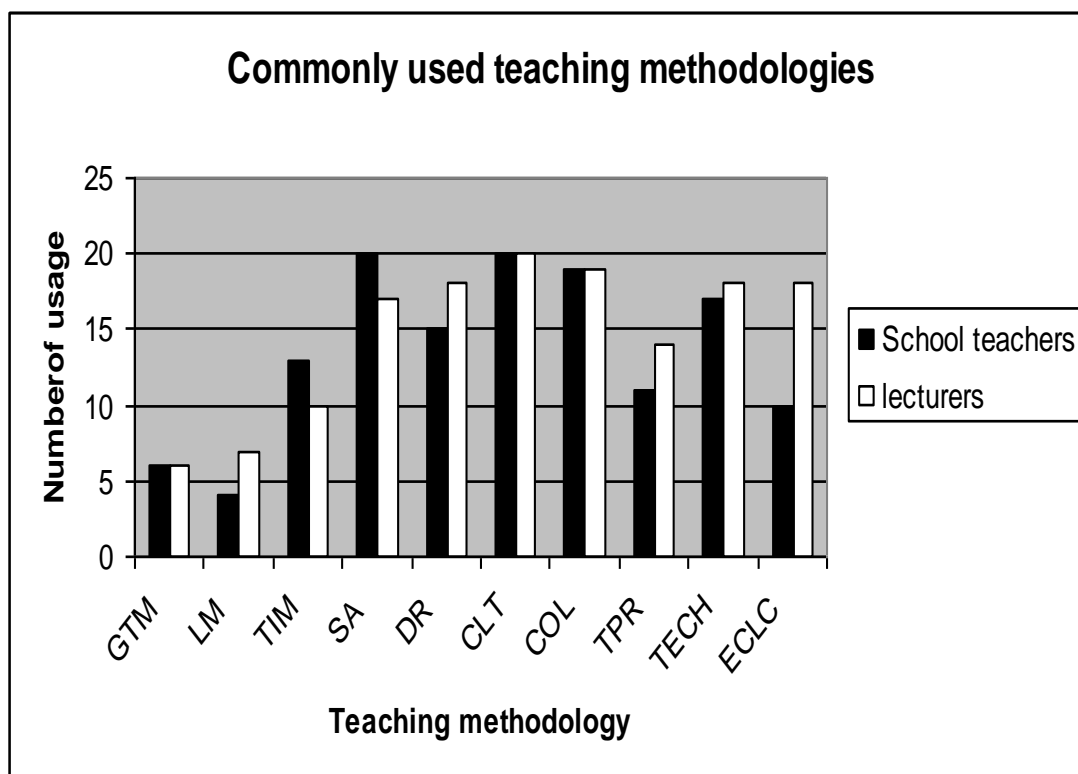


Figure i

In further analyzing this chart, several highly used strategies can be recognized which represent either the preference of the teachers and lecturers or the method they are advised to use by relevant educational authorities. School teachers tend to use SA (20), CLT (20) and COL (19) commonly while most of the lecturers tend to use CLT (20), COL (19) as well as DR (18), TECH (18) and ECLC (18). Referring to these statistics it can be concluded that both teachers and lecturers seem to use a combination of structural and communicative aspects in teaching, consciously or unconsciously, suggesting the use of ECLC within the classroom in varying degrees.

The use of a combination of structural and communicative methods can be discerned as a better option than resorting to the single use of either a structural or theory based methodology or solely using a communicative approach.

Satisfaction level with regard to the currently used teaching methods

The data prove that 33 teachers and lecturers are either completely or to a certain extent satisfied with the currently used teaching methodologies in schools and universities as they believe that students are able to improve their language skills through these strategies. However, 19 (9 teachers and 10 lecturers) seem to hold a different view. Even though, the majority of school teachers and lecturers prefer to use ECLC within the L2 classroom, practical barriers against the complete implementation of it hinder 100% effectiveness. Consequently, 07 informants (03 school teachers and 04 lecturers) totally refuse to be satisfied with the currently used teaching strategies, throwing light to the fact that there is an issue with regard to the teaching methods used at the moment.

According to the data provided by educators, the currently used teaching methodologies in the country which are influenced by western methodologies, can not be described as suitable for low level students in our local contexts. Though there can be similarities with regard to the learning condition and atmosphere, there can also be dissimilarities undeniably. As a result of the lack of formal studies carried out with regard to teaching methodologies within local contexts, both educators and learners have to depend on foreign theories, which are adapted to the local arena and are forced on school teachers by higher education authorities.

Though several vital investigations with regard to second language teaching and learning have been carried out by scholars such as Professor Shiromi Fernando at the University of Colombo, such deep researches or analysis can not be seen to be carried out recently. Consequently, what is pointed out by a minority of teachers within this study, also seems difficult to be ignored.

Within this modern social context, technology gains a prominent place and it affects various aspects of an individual's life. Consequently, in the educational sphere also, the use of technology has become a new trend. However, as pointed out by teachers, in most schools, use of technology for teaching is minimal, mainly due to the lack of facilities and sometimes due to the lack of competent staff to use technology. As a result, the opportunity to resort to a strategy that would increase the attention and interest level of students is lost.

The work of school teachers is constantly monitored by high ranked educational officers and records are kept on that while educational workshops are carried out in order to make them aware of teaching methods and other relevant details. Some teachers who show dissatisfaction over the currently used methods, perceive such attempts as forcing certain methods on to them to be used within the classroom, without granting freedom for the teacher to choose a suitable method according to the level of the student. For example, when the student centered teaching methodology is used, most of the time talented students dominate and weak students copy their work and no language improvement really takes place. In accordance with the view of some other teachers, sufficient information is not provided in instructional manuals, bringing out certain issues and difficulties for teachers sometimes.

Another important reason for the dissatisfaction felt by teachers is that, with the currently used methods, students are never made to feel that they are practicing how to use a language, but as merely learning a subject. For instance, the fact that language is for communication is forgotten and exam purposes are highlighted, so the student is not impressed by the methodology used which stresses him. This is also a valid point as no one can forget the fact that English is a language and that today it is basically used as a tool of communication, so it cannot be taught as any other theoretical subject. However, often grammar or theory based explanations are given focus within L2 classrooms while the practical and communicative usage of the target language is not completely realized as an aim of the teaching-learning experience. Surprisingly lecturers also share similar views with regard to these matters.

Thus in considering the reasons forwarded by teachers and lecturers who project a lack of satisfaction with regard to the currently used teaching methodologies as depicted above, a similarity of ideas can be identified from both parties. For instance, while 03 teachers state that the currently used teaching strategies are not very suitable or hundred percent practical to be used within the local setting, 04 lecturers similarly state that there is an urgent need to resort to innovative ways of teaching English as a second language.

Use of The Eclectic Method - Perception of the educators

In answering question number 11, with regard to the use of the ECLC, 18 school teachers and 20 lecturers project their preference to use ECLC within a L2 classroom instead of using a single methodology, suggesting the importance and effectiveness of this strategy which is understood by these educators who have been in the field of teaching considerably for a long period of time.

However, when the answers are deeply analyzed, it can be discerned that only 10 school teachers actually use ECLC practically within the classroom and the rest of the school teachers find it difficult to use this methodology.

When the school curriculum is considered, related to any subject, it seems to be vast and broad and it is same with English. For example, there is a text book provided for each class which is full of grammar and extra activities and it is often difficult to complete this book within the given period of time. So, as some teachers have pointed out, in teaching a lot, within a given short period of time, different methods have to be adopted successfully to maintain the interest of the student for the lesson or in other words, the use of ECLC becomes important.

Similarly some other teachers have voiced this issue, stating that “some lessons are difficult to be taught using one method”. On the other hand an overall understanding of a lesson can be given to students, when several strategies are used to impart knowledge with regard to one lesson. In such a situation ECLC would bring out all the positive aspects of the selected teaching methods.

Simultaneously, it is vital to note that ECLC caters to the different needs and learning styles of students, so the use of it would benefit students who belong to a wide range of background and ability. For example, a teacher may start teaching a particular lesson, resorting to the lecture or grammar translation method and then switch into a pair or group activity or do a game in the class, to assure students practice the learnt grammar component successfully. Within such a situation, visual, auditory and kinesthetic learners are benefited at different time periods and the objectives of the lesson can be realized, without only sticking to one methodology and benefiting only some students, while the likenesses and learning styles of the rest of the class are ignored. ven though, one method that is used here is not very successful, the other related methods would benefit the students. However, if only one methodology is used, and if it is failure, the whole language teaching and learning process becomes a failure.

Majority of the lecturers also seems to have forwarded a similar stance with regard to the use of ECLC within the university system. According to them, the use of ECLC, creates an enjoyable learning atmosphere, without boredom and the interest and motivation level of the student rises as a result.

When there is variety, it is not only the students who benefit from them, but also teachers can target the realization of several language objectives at one time such as teaching a particular grammar theory, writing sentences using that grammar component and using that sentence structure in a simple speaking activity. Thereby several language skills can be covered effectively and interestingly. Thus variety also enhances practicality within the L2 classroom. Further more, the idea of having variety in the L2 classroom goes hand in hand with the normal usage of the language within the human society. That means, language in reality functions in various ways and it is an artificial attempt, if a teacher tries to stick to one strict methodology in teaching such a language which is used for communication in numerous contexts and in numerous ways.

Methodologies used in the L2 classroom – Perception of the learners

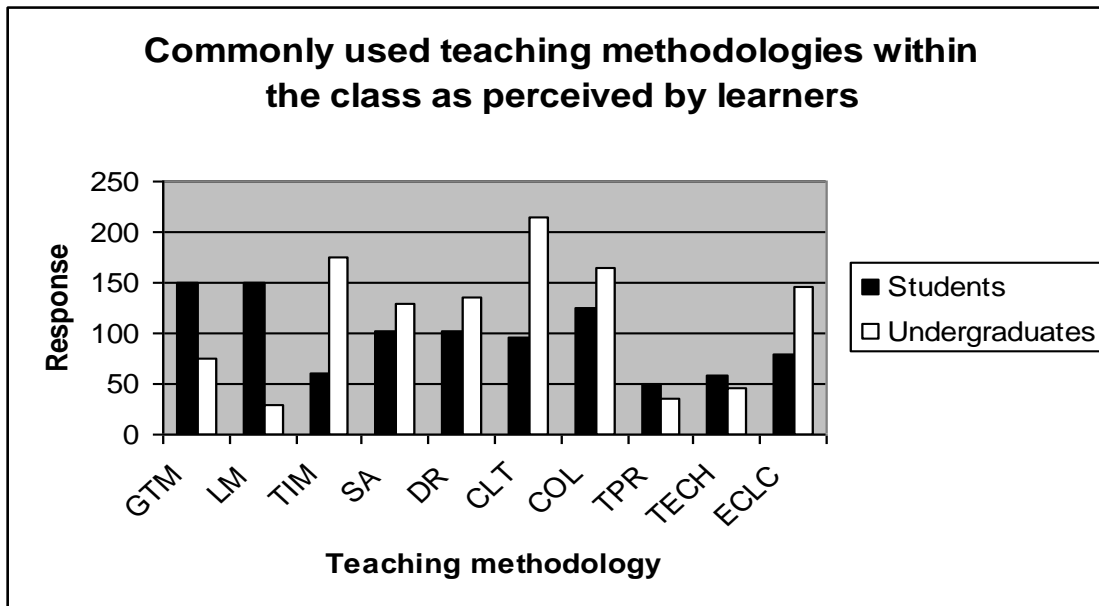
In obtaining information with regard to the perception of learners about the teaching methods that are used in their classrooms, they were asked whether the syllabus and the teacher's way of teaching persuade them to learn English. According to the data obtained through this question, 134 students and 148 undergraduates directly answer affirmatively, answering "yes" where as 87 students and 96 undergraduates state the syllabus and the teacher's way of teaching impress them only to a certain extent while 06 learners have refused to accept this fact and 29 learners state they do not find any specialty in the syllabus or in the way of teaching.

Though the students respond like this, the educator or the method adopted can not be criticized wholly as several weaknesses can be identified from the learners also. For example, the low esteem given by students to the free education they receive in schools and universities, the non-serious attitude they show towards English, specially within the university, low attendance to classes that ultimately negatively affect the result and language improvement of the learners and the high esteem shown towards various private English courses for which learners have to pay a high amount of money are some such factors.

Commonly used teaching methodologies – Perception of the learners

According to the following chart, while school teachers state that they commonly use SA, CLT and COL, students perceive a high usage of GTM (150), LM(150), DR (102) and SA (102). When lecturers mention that they commonly use CLT, COL, DR, TECH, undergraduates emphasize that CLT (175), COL (165) and TIM (175) are used often by their lecturers. Some of the students and undergraduates have also identified the use of ECLC within the classroom (80 students and 145 undergraduates).

Figure ii



Students depict their preference to learn through ECLC (200), TECH (145) and SA (78) and undergraduates indicate their preference to learn through ECLC (285), COL (148) and CLT (133). In analyzing these responses three main factors can be identified. The first one is the preference shown by both school children and undergraduates to learn through ECLC and the second fact is that even when it is used in the classroom, both parties seem not to identify it distinctly and this highlights another vital factor. That is more distinct variations in teaching and variety of strategies have to be clearly and effectively used than it is done at the moment, to make the students feel a drastic change that impresses them to learn. Two instances that prove this idea are given below.

According to informant number 54 her school English teacher only uses LM and TIM, but she would like to study through GTM, ECLC and TECH. Consequently, she attends a tuition class in which she identifies her tuition master to use various methods such as GTM, LM, SA, DR, CCL and ECLC. However, the majority of teachers shows awareness of ECLC and also mentions that they use it. Anyway what the students say cannot be ignored as they can also be good judges of teachers being the ones who experience the teaching. A teacher can say he uses a particular method, and knowingly or unknowingly may not use that exact methodology. As a result, it is mandatory to effectively

reintroduce distinct variations in teaching and variety of strategies to bring out a drastic change in the teaching -learning experience and to persuade the learner to learn with interest.

According to informant number 56, her English teacher uses a variety of methods and she identifies it as ECLC and does not see a need to attend a tuition class. These kinds of responses question the attitudes of students with regard to the teaching freely provided in schools and universities. Once the attitude of the learner is positive with regard to the teaching–learning process, he can reap a lot of benefits. Simultaneously the differences among good and well qualified teachers and low qualified teachers who do not contribute for an effective teaching-learning process can be recognized as possible issues to be addressed in analyzing the teaching methods used in such contexts.

Use of ECLC - Perception of the learners.

According to the data collected under question number 15 that asked whether ECLC is better than the use of a single methodology, 234 students and 247 undergraduates have exclaimed ECLC to be a better option than resorting to one methodology while only 16 students and 03 undergraduates refuse to accept it due to the complications that this option would bring out for a lesson with the inclusion of too many varied activities that would affect the concentration level and clarity in understanding the lesson.

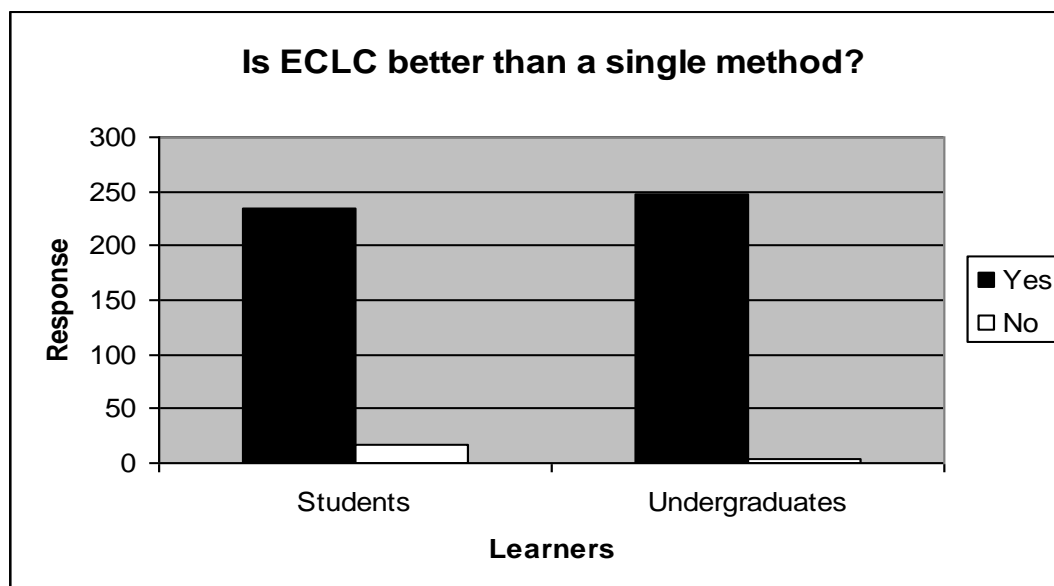


Figure 4 -iii

Students and undergraduates, who provide reasons for the answers they have given for the above mentioned question highlight that, when ECLC is used, there is no boredom or monotony in the class and an interest to learn emerges. Further more, when a wide variety of method is used, it raises the

memory level of learners as it is a well-structured, active teaching-learning experience through which learners learn a language component in varied ways, developing reading, writing, listening and speaking within one session.

Both students and undergraduates seem to have almost a similar knowledge and understanding with regard to the importance of ECLC. They might not have thought about teaching methods and their effectiveness earlier, but when they are given relevant guidelines and explanations and are questioned about these factors, they have shown a surprising level of reviewing, criticizing, understanding and selecting what is the best and worst teaching method.

Thus several vital aspects with regard to the use of an appropriate teaching methodology within the L2 classroom, paying special attention to the significance of preparation for a lesson, armed with a suitable strategy to impart knowledge, commonly used stratagem in the current scenario, satisfaction of educators with regard to the currently used methods, reasons for that and the use of ECLC are reviewed in order to reach valid conclusions and generalizations.

CONCLUSION

In identifying a suitable methodology to be commonly adopted within the local L2 classroom context, prior preparation for a lesson and the selection of an effective teaching methodology are singled out to be prerequisites for a successful teaching-learning process. In addition to the identification of these two prominent factors in teaching, a few other factors such as the class, context, time period, number of students, type of lesson, the relatedness of lesson objectives and the strategy used to impart the knowledge targeted by the lesson are also recognized as other valuable points to be considered deeply. Nevertheless, the issues that can be discerned with regard to the practical consideration shown over the above mentioned two prerequisites can be projected as one reason for the lack of English proficiency among school and university learners.

It further becomes evident that within the local secondary and tertiary level contexts, similar techniques in teaching are adopted both by school teachers and lecturers. Thus, a high usage of CLT, COL, DR, TECH and SA can be perceived, assisting the researcher to come to the conclusion that both parties seem to use a combination of structural and communicative aspects in teaching, consciously or unconsciously, suggesting the use of ECLC within the classroom in varying degrees.

As the use of a combination of structural and communicative methods is discerned as a better option than resorting to the single use of either a structural methodology or a communicative approach, a high level of satisfaction with regard to the use of teaching methodologies on the teachers' and lecturers' part as well as from the learners' side can be perceived through the data. However, the fact that still there are certain issues and frailties with regard to the practical application of a methodology that constitutes both structural and communicative strategies cannot be ignored.

Simultaneously school teachers, lecturers and learners similarly resemble a great credence over the use of ECLC, both as an effective method of teaching and learning and they are not ignorant about the advantages offered by this strategy. In evaluating the data collected from school teachers and lecturers, CLT, COL and SA can be distinguished as the best three methodologies to combine in teaching English using ECLC and similarly students and undergraduates pinpoint CLT, COL, SA and TECH as preferred methods of learning. Simultaneously all the three parties stress on the use of ECLC and this proves the fact that all of them prefer to either teach or learn using a variety of methods or in other words using ECLC.

Recommendations

It can be suggested here that the preferences and choices of learners and educators in either learning or teaching that are described earlier, can be made very effective by the inclusion of a structural methodology such as LM and giving a thorough knowledge about grammar while continuing to use the above mentioned communicative strategies. The introduction of interesting tactics in adopting LM and emphasizing the significance of gaining a theoretical background to realize the target of achieving language proficiency, will bring success to this attempt taken.

Reminiscing the researches carried out by Freeman, Mellow, Cruz and Li who emphasize the use of a coherent combination of structural and communicative methods or in other words the use of formal instruction and communicative activities, it is vital to note that ECLC should not be restricted to a combination of only three or four methods when numerous methodologies which can be artistically combined in a classroom are available. Consequently, the above suggested ECLC combination through the data collected from the current research, can be further improved by the following suggestions. That is a teacher can adopt a number of ECLC combinations to be used on different days of teaching within a week. For instance, on one day the teacher can select the combination of CLT, COL, SA, LM and TECH while on another day he can choose to have DM, ALM, TPR and S which seem not to be often used within the local L2 context.

The Relationship between the Adopted Teaching Method and the Learner's Language Improvement

This research has attempted to find out whether ECLC is a good method in imparting second language knowledge within the local secondary and tertiary level contexts. As hypothesized, finally it is proved that, actually ECLC is a better option to resort to, in teaching, than using a single methodology in teaching English. However, weaknesses in the practical application of this method can be discerned. Thus, the low English proficiency level that can be commonly seen among school children and undergraduates, amidst the great attempts taken by educators to improve knowledge, can be perceived.

While attention was focused on these specifically focused areas in the research, another important factor was observed by the researcher. That is, the adopted teaching method is not the only factor that depicts a close relationship with the learner's language improvement. When learning and teaching, specially within the university, are examined, it is found out that, often the ratio of student participation for English classes is very low, except in cases where the English course is mandatory. For instance, during the period of time that students have continuous assignments for main subjects, they totally forget their English class and sometimes the teacher who steps into the class, well prepared and with enthusiasm, only finds few students and the lecturer is also disheartened.

Nevertheless, when a questionnaire is given to them, asking their thoughts on the teaching method used in the class room and about the syllabus or the teacher's way of teaching, they would see all the frailties with regard to the lecturers and the system, while being totally blind to their own weaknesses. As a result, the researcher firmly believes that, not only researches on ECLC and other teaching methods within the local context, but also researches should be carried out targeting the need, attitudes and preferences of learners with regard to learning English.

The above mentioned are significant issues within today's academic sector which need to be addressed urgently. The government and educational officers are taking great attempts to improve the English knowledge of youngsters to make them well equipped with necessary qualifications required by the job market, and annually various projects are carried out with the monetary assistance given by international organizations such as the World Bank to enrich the future of local students. However, the above mentioned challenges are not recognized or addressed, so whose fault is it? Anyway, in the end, the young learner today, will face a difficult situation tomorrow, when he has to compete with a graduate passed out from a local or foreign, private university, armed by the power of the sword ("Kaduwa"); English.

Limitations of the Current Research and Further Insight to Future Research

Since the scope of this current investigation is limited in several ways, ECLC is only identified as a vital methodology to adopt by a teacher that would interest and benefit a learner in a variety of ways. However, no survey is carried out to specifically measure the different levels of proficiency achieved when a single methodology and a variety of methods are used within the L2 setting with regard to the target population. Nevertheless, the current research has undeniably attempted to fill a gap in the local research arena with regard to the awareness of teaching strategies and this examination has again highlighted the validity of ECLC, while also providing an insight for more future research on the above mentioned areas.

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The Impact of Knowledge and Attitudes of Managerial Officers on Solid Waste Management Practices in Sri Lanka

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Abstract

As in many developing countries, solid waste management (SWM) is a key issue in Sri Lanka. And the quantity and the quality of the waste generated are directly influenced by the knowledge, attitudes and practices of people. Poor community participation is one of the main barriers for finding a sustainable solution for the said problem. The main objective of this study is to investigate the impact of knowledge and attitudes on waste management practices followed by managerial officers in Sri Lanka which is considered as a significant group of the society because of their education level and direct involvement of decision making at organizational and national level. Population was selected as students who studied Master of Business Administration (MBA) of University of Sri Jayewardenepura students as they are supposed to be future leaders of the country. Hundred students who follow MBA programs were selected as the sample, representing managerial level officers in different sectors. Knowledge and attitudes were considered as independent variable and practices as the dependent variable and they were measured using few dimensions. Primary data was collected through self-administered questionnaire. The version 22.0 SPSS package was used for data analysis. According to the findings, majority of MBA students possessed moderate level of knowledge and more than 75% of respondents had favorable or most favorable attitudes on solid waste related aspects. However, 15.9% of MBA students had negative attitudes on solid waste and especially on value of waste. Regarding their practices, nearly 40% of respondents follow poor waste management practices and it reached more than 55% in waste segregation and recycling behaviors. Knowledge on solid waste didn't show a significant relationship with their practices. But a weak positive correlation was found between overall attitudes and waste management practices ($r = 0.267$) and a moderate positive correlation between attitudes on responsibility on public participation and practices ($r = 0.539$). Therefore, among MBA students, only the attitudes showed a significant positive impact towards SWM practices but not the knowledge. Hence, through building correct attitudes which need to be initiated from ground level can effectively contribute to implement sustainable waste management mechanism as attitudes of these future leaders are influential not in individual level but also in organizational and national level.

Key words: Solid waste, waste management practices, knowledge, attitudes, managerial level officers

INTRODUCTION

Urbanization is the major transformation occurred in last century and now it has become one of the direct key factors for most of the prevailing global environmental and social issues. Out of many such

issues, solid waste takes the highest priority due to its environmental, social and economic issues. Solid waste management is a challenge faced by both developed and developing countries (Mbuligwe, 2002). However, this is a more prevalent issue in developing countries with their rapidly growing cities and town developments (Jing et al., 2009 and Guerrero et al., 2013). Increasing population levels, rapid urbanization, booming economy and rise in community living standards which have significantly increased the speed of municipal solid waste generation in developing countries (Minghua et al., 2009).

Solid waste is the useless and unwanted products in the solid state arising from domestic, trade, commercial, agricultural, industrial, mining activities and from public services as well (Bhuiyan, 2010). Drastic changes occurring in human lifestyles, as a result of concentrated activities by the population, businesses, agriculture, industries, and institutions, in the recent past have caused substantial increase of solid waste generation and especially failing of implementing proper management has caused the waste as a major global issue. Waste management is an integrated system to manage the waste and this includes, waste reduction, composting, collection and transport, recycling, energy recovery, treatment and disposal (Moller and Uhre, 1996) and these management systems should be economically viable, socially acceptable and environmentally effective to become sustainable (McDougall, et al., 2001).

There are many factors affecting the proper implementation of solid waste management systems which can be technical, environmental, socio-cultural, legal and institutional (Guerrero et al., 2013). According to Srivastava et al. (2015), public attitude, knowledge and practices are one of the main factors influencing urban solid waste management in the developing world. Kofoworola (2007) says that individual or group awareness and attitudes towards waste generation and management are critical in the effort to respond to waste management challenges. The study conducted for undergraduate students at Philippines State University shows that knowledge, attitude of students on solid waste have a positive effect on practicing behaviors of solid waste management and many socio-demographic factors (Barloa et al., 2016). From the studied conducted in University of Rajasthan, Arora and Agrawal (2011) showed there is a significant association between knowledge and practices and knowledge and. Further they revealed that, students who possessed good knowledge also have a good level of practices, and they were able to manage the waste in a proper manner. In a study conducted in Lahore city Pakistan, to investigate the knowledge, perception and attitudes of common people towards solid waste management practices it had been found that, attitude and participation of the local community towards solid waste management is the key component for the successful implementation of any waste alleviation program and industrial solid waste management (Haider et al., 2015).

Being a developing country, Sri Lanka still experiences unacceptable solid waste disposal practices and this one of the biggest current environmental problems in the country. Illegal dumping is a common practice in the country with approximately 20% residents dumping their waste on road sides (Bandara, 2008) and according to Visvanathan (2006), 85% of collected waste in Sri Lanka is subjected to open dumping. The seriousness of this issue was revealed with the tragedy of collapsing Meethotamulla garbage dump in year 2017 killing 19 people. Many studies have shown that public attitude, perception and knowledge on waste management are one of the key factors for the success of integrated waste management mechanisms in the country (Bandara, 2008; Hikkaduwa et al., 2015). As identified, one of the main barriers for implementing sustainable solid waste management practices in Sri Lanka is low community participation.

The present study was thus conducted to investigate the impact of knowledge and attitudes on waste management practices followed by managerial officers in Sri Lanka which is considered as a significant group of the society because of their education level and direct involvement of decision making at organizational and national level. This study similarly attempted to identify the level of knowledge and attitudes in solid waste management among managerial officers, identify waste management practices they apply and assess relationships between knowledge and attitudes with their practices. Since managerial officers are influential group of the country, it was expected that the findings of this study could contribute for designing and implementing appropriate effective solid waste management practices in Sri Lanka.

METHODOLOGY

Research design

In present study, knowledge and attitudes of managerial officers in Sri Lanka were used as independent variables and their waste management practices were used as the dependent variable. Through a deep literature study that had been carried out, three dimensions were selected to each variable type and indicators were chosen to measure each dimensions. Knowledge variable had three dimensions; knowledge on impacts of waste, knowledge on segregation and knowledge on sustainable management whereas the second independent variable, attitudes also had three dimensions; attitude on responsibility of waste management, attitudes on safe disposal and attitudes on value of waste. Same as, dependent variable, waste management practices, also had three variables; disposal, segregation and recycling.

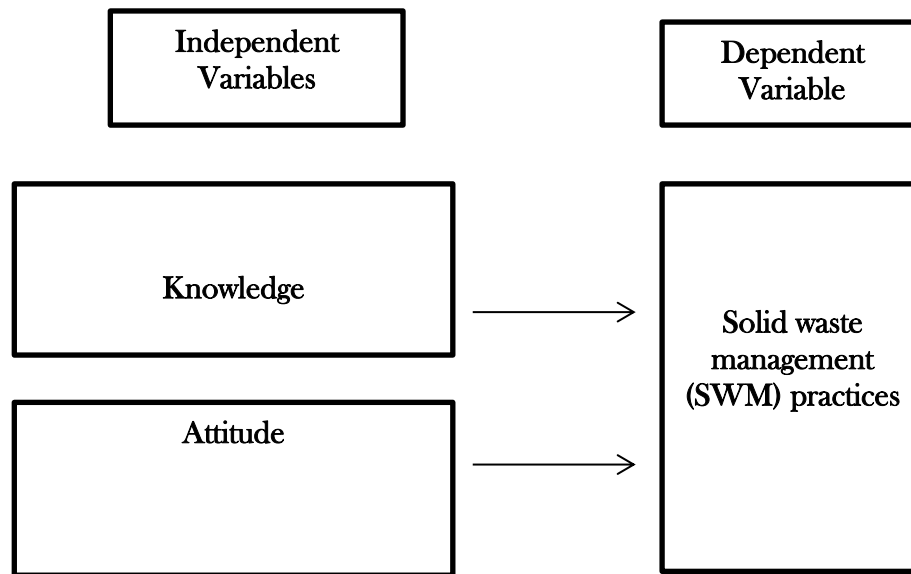


Figure 1: Conceptual framework of the study

Population

The population was taken as MBA students from University of Sri Jaywardenepura, as they are all managerial level officers and characterizes a wider cross section of managers in the country due to many reasons such as, representing both private and government sectors, belonging to different disciplines as well as different managerial levels.

Sampling method

The sample was selected from the students following the MBA degree program at the University of Sri Jaywardenepura as it is one of the leading MBA programs in the country which covers a wide range of managers representing many organizations. Accordingly hundred students were selected as the sample, representing managerial level officers in different sectors for the survey.

Instrument used

Self-administered questionnaire was used to gather information on demographic data of the sample, knowledge and attitudes on waste and current waste management practices they adopt. The questionnaire was pre-tested using 28 students to ensure feasibility, reliability and validity. Secondary data were collected through various published reports, research articles and newspaper articles etc.

Data Analysis

The Likert scale was used to measure the strength of each individual's knowledge, attitude and practices on waste management by assigning nominal values to items according to the scales. Four Likert scales of strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD) were used to measure the knowledge and attitudes whereas Very Often (VO), Often (O), Not Often (NO) and Never (N) were used to measure waste management practices (Jatau, 2013). To determine the levels of knowledge, attitude and practice statistically, the scores for each dimension was partitioned. The mean value added to one standard deviation represented the upper limit while the mean value minus one standard deviation represented the lower limit. The mean values above the upper limit were considered as high, values below the lower limit were considered as low while values lying between the upper and lower limits were considered as moderate (Adeolu et al., 2014). Descriptive statistics; frequency percentages, mean and standard deviation were used to describe the studied variables. Pearson's Correlation test was used to assess the relationship between variables. Statistical analysis was carried out using SPSS 22.0 software.

RESULTS

Demographic characteristics of respondents

The questionnaire was given to randomly selected hundred MBA students and eighty two questionnaires were received, therefore, the response rate was 82%. The results analyzed show that respondents used for this study possess the following demographic characteristics; the total number of respondents is eighty two (n=82) and the males are 53.7% and females are 46.3%. Their age ranges are, 31.7% for age 20-30 years, 50% for 31-40 years and 15% for 41-50 years. 73.2% respondents have postgraduate level qualifications and 25.6% and 1.2% have graduate and diploma level qualifications respectively. 68.8% respondents are working in the private sector, 14.6% in government or semi-government institutions, 14.6% are in international organizations and 2.4% are self-employed.

Statistical levels of Knowledge, Attitudes and Practices

According to the Table 1, majority (67.1%) have moderate level of knowledge on solid waste related aspects and 14.6% have good knowledge and 18.3% belongs to the poor knowledge category, revealing that the combined knowledge on waste related aspects of respondents is at average level. When considering each dimension measured related to knowledge on solid waste, for the knowledge on impacts of solid waste, 74.4% possess moderate knowledge, 11% have a good level of knowledge whereas, 14.6% belongs to low level (poor). In knowledge regarding waste segregation, 69.5% have

a moderate level of knowledge and 11% and 19.5% have a good level and poor level respectively. In knowledge on solid waste management practices, majority (67.1%) possesses moderate level, 18.3% are having poor knowledge and 14.6% respondents have good knowledge.

Table 1: Level of knowledge on waste (combined) and knowledge level on three different dimensions
*Values in parenthesis are percentages

	Poor	Moderate	Good
Level of combined knowledge on waste related aspects	15 (18.3)*	55 (67.1)	12 (14.6)
Level of knowledge on three different dimensions			
Knowledge on impacts of waste	12 (14.6)	61 (74.4)	9 (11.0)
Knowledge on waste segregation	16 (19.5)	57 (69.5)	9 (11.0)
Knowledge on sustainable solid waste management	12 (14.6)	55 (67.1)	15 (18.3)

The data in Table 2 shows, attitudes on waste aspects, 74.4% have moderate level or favorable attitude, 12.2% have most favorable attitudes whereas, 13.4% have less favorable attitudes. When considering level of attitudes respected to each dimension measured, responsibility for participation in waste management, 74.4% shows favorable attitudes, 9.8% are highly favorable and 15.9% have negative attitudes. The attitude towards waste disposal practices, 57% have favorable attitudes for good disposal practices, 13% are highly favorable and but 17% possess negative attitudes. For the attitudes for value of waste, majority (57.3%) shows favorable attitude, 12.2% are highly favorable and 30.5% are less favorable.

Table 2: Level of attitudes on waste (combined) and attitude level on three different dimensions

	Less Favorable	Favorable	Highly Favorable
Level of attitudes (combined) on waste related aspects	11(13.4) *	61 (74.4)	10 (12.2)
Level of attitudes on three different dimensions			
Attitude on public responsibility on solid waste management	13 (15.9)	61 (74.4)	8 (9.8)
Attitude on waste disposal	14 (17.1)	57 (69.5)	11 (13.4)
Attitude on value of waste	25 (30.5)	47 (57.3)	10 (12.2)

*Values in parenthesis are percentages

In the results of waste management practices (Table 3), in the combined results, half of the respondents (50%) apply poor waste management practices and 35.4% and 14.6% have moderate and good practices respectively. When considering results of each dimension measured respected to waste management practices, for waste disposal, majority (79.3%) have moderate level which means they are not practicing safe disposal techniques more often or bad disposal methods more often and only 4.9% apply good practices and 15.9% still uses bad practices. However, the practice of segregation and recycling are very poor among managerial level officers as 67.1% and 76.8% respondents never or not often separate wastes prior to disposing of or recycling waste respectively. When further analyzing the waste management practices (Table 4), 46.3% respondents are often or more often do open dumping and 43.6% never or not often do open dumping. Interestingly, 89% of respondents are still practicing burning of non-biodegradable material. However, in waste segregation, 50% separates waste often or very often and more than half (57.4%) separates biodegradable waste from non-degradable waste. But also the other 50% do not or rarely practice waste segregation. However, recycling practice of managerial level officers are still at very poor level, in which, only 84.4% never give or not often give recyclable waste to recycling centers and only 18.3% are practicing composting and also only 6.1% are willing to purchase recyclable goods or things produced by recycled materials.

Table 3: Level of waste management practices (combined) and practices on three different dimensions

	Poor	Moderate	Good
Level of waste management practices (combined)	41 (50) *	29 (35.4)	12 (14.6)
Level of waste management practices on three different dimensions			
Waste disposal practices	13 (15.9)	65 (79.3)	4 (4.9)
Waste segregation practices	55 (67.1)	12 (14.6)	15 (18.3)
Waste recycling practices	63 (76.8)	7 (8.5)	12 (14.6)

*Values on parenthesis are percentages

Table 4: Waste management practices apply by respondents

	Never	Not Often	Often	Very Often
I do open dumping	11 (13.4)*	33 (40.2)	33 (40.2)	5 (6.1)
I give my waste to the waste collectors	4 (4.9)	41 (50.0)	33 (40.2)	2 (4.9)
I burn non-degradable waste (plastic, polythene etc)	1 (1.2)	8 (9.8)	66 (80.5)	7 (8.5)
I separate waste as degradable and non-degradable	9 (11.0)	26 (31.7)	3 (3.7)	44 (53.7)
I separate e-waste and other hazardous waste from general waste	23 (28.0)	49 (59.8)	6 (7.3)	4 (4.9)
I practice waste segregation whenever I dispose of waste	17 (20.7)	24 (29.3)	35 (42.7)	6 (7.3)

I give recyclable material to recycling centers	20 (24.4)	50 (61)	6 (7.3)	6 (7.3)
I use biodegradable waste to produce compost	43 (52.4)	24 (29.3)	11 (13.4)	4 (4.9)
I prefer to buy goods made from recyclable and recycled material	27 (32.9)	50 (61.0)	2 (2.4)	3 (3.7)

*Values in parenthesis are percentages

Relationship between knowledge and attitudes on waste management practices

Pearson's Correlation Test was carried out to analyze the relationship between independent variables and the dependent variable. Analysis in Table 5 suggests, knowledge does not significantly correlated with waste management practices. Further, the dimensions of knowledge variable; knowledge on impacts of wastes, knowledge on waste segregation and knowledge on waste management also not significantly correlate with waste management practices.

However a significant relationship is found between the attitudes and overall practices with a weak positive correlation ($r = 0.267$). Also the relationship between attitude on public responsibility and practices also statistically significant which is averagely strongly positive ($r = 0.539$). But attitude on waste disposal and value of waste are not significantly correlated with waste management practices. Hence it can be concluded that the attitudes of respondents on waste has a positive impact on their waste management practices especially attitude on their responsibility significantly influence on waste management practices.

Table 5: Correlation coefficients (r) between independent variables and its dimensions with dependent variable

	Waste Management Practices		
	Sig. (2-tailed)	r	Relationship
1. Knowledge	.236	0.132	No significant relationship
1a. Impacts of waste	.124	0.171	No significant relationship
1b. Waste segregation	.541	0.068	No significant relationship
1c. Waste management	.231	0.134	No significant relationship
2. Attitude	.015	0.267*	Weak Positive Correlation
2a. Public responsibility	.000	0.539**	Moderate Positive Correlation

2b. Waste disposal	.136	0.166	No significant relationship
2c. Value of waste	.908	0.013	No significant relationship

*Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed)

DISCUSSION

As per the findings of this study, the managerial level officers have a moderate level of knowledge towards solid waste management related aspects. Even though they are involved in different occupations, their environmental knowledge are at an acceptable level may be due to most of the respondents having tertiary level education. This is supported by the finding of Yadavannavar et al. in 2010. However, when considering each dimension of knowledge measured from the respondents it was noticeable that one fifth of them have poor knowledge on waste segregation aspects though it has become a legal requirement of the country now. This was more prominent having a result of 67.1% respondents practicing poor waste segregation practices.

Also the study found that, the level of attitudes of the majority of managerial officers in Sri Lanka to waste management was at moderate level or favorable level. This further proves the findings of Barloa et al. (2016); Ramos & Pecajas (2016) and Ranu et al. (2016). Since managerial officers are educated (majority have tertiary education), responsible people as well as decision makers in society, it can be expected that their positive attitudes have been created through their education and employment status. However, having 25% of respondents with less favorable attitudes for value of waste, it can be said that even though managerial officers are educated and responsible people in society there is a significant group who have negative attitudes on solid waste related aspects. However, Tatlonghari & Jamiasm (2010) have shown earlier that considering waste as a resource which can be actually benefited for people is a positive factor in campaigns that involve in development of desirable attitudes on solid waste management.

Though these managerial level officers possess an average level of knowledge on solid waste aspects, they showed poor practices which agree with Tikka et al, (2000) who has mentioned that according to some scholars, environmental knowledge does not lead to improve practice. Further, having significantly high number of respondents who have poor waste segregation practices revealing that even among educated people in society waste segregation is still not a common practice. This finding proved the results of Ehrampoush & Moghadam (2005), where a majority (66%) of medical science students in Yazd University in Iran did not practice solid waste segregation. According to Banga (2011) reasons for people to practice poor wastesegregation can be; considering it as a time

consuming activity, lack of a ready market for recyclable waste, not understanding the importance of waste separation and lack of space. These reasons may be applicable to the Sri Lankans as well because waste segregation is still not a familiar practice for many people in our society and most of them see it as an extra burden and are also not very much aware about its importance.

Moreover, the recycling practices among the respondents were also significantly at poor level having 76.8% in the lowest category, revealing that still many Sri Lankans are not still familiar with recycling practices. This result was in line with the 25% of respondents who have less favorable attitudes on value of waste. It further disclosed that a considerable number of managerial officers who were sampled consider waste is just a dumping material which cannot be utilized to produce other value added products. This is one of the main reasons that solid waste has become a serious issue in Sri Lanka as the majority of solid wastes are still dumped without getting any secondary use. This is further in line supporting the findings of Bendak and Attili (2017) where only a small percentage of people in developing countries truly participate in recycling even though they are aware of the environmental degradation happening due to solid waste and how waste recycling can improve the quality of the environment and save resources. According to this past study, the reason for poor recycling practices in developing countries is lack of resources available to the public to encourage them for recycling. This can be a potential reason for Sri Lanka as well, as the level of practicing waste recycling is still at a very poor level among Sri Lankan people. Also as per the present study, managerial officers in Sri Lanka are still adopting wrong solid waste management practices such as open dumping which proves the findings of Adeolu et al. (2014), Chima et al. (2011) and Ramos & Pecajas (2016). This shows that even among the educated and responsible citizens, still there is a considerable group which uses wrong and unaccepted waste management practices. This may be due to the fact that they are not considering it as a wrong action or they are under estimating its results to the environment even they possess moderate level knowledge and attitudes on solid waste.

The findings of relationships variables showed that there was no significant relationship between the overall knowledge or either its three dimensions that were measured with the waste management practices. This reveals that the knowledge of managerial officers in Sri Lanka on solid waste does not affect their practices in solid waste management. This further implies that even though they have average knowledge on solid waste they don't use it when they engage in waste management practices in their day today lives. This discloses that there is a gap between environmental knowledge and practices even among the highly educated and responsible people in Sri Lankan society.

However, the respondent's attitudes showed weakly positive significant relationship with their waste management practices. This relationship supports findings of previous studies (Barloa et al., 2016; Haider et al., 2015; Gusti, 2016). The majority of respondents had favorable attitudes and half of them

have moderate or good level of practices. Considering these results it can be said that when managerial level officers have more favorable attitudes on solid waste they tend to practice well waste management techniques. This is reliable with the theoretical assumption in the Theory of Planned Behavior, that the attitude is a determinant element in the intention (Fishbein & Ajzen, 1975). Attitude plays a significant role in environmental actions of people.

Through this study it was able to identify levels of knowledge, attitudes and waste management practices as well as attitudes as one of the factors influencing for solid waste management practices of an important segment of Lankan society (managerial officers). Also it was found that that knowledge had no impact on solid waste management practices among managerial officers in the population considered. Hence results of the study are important to identify suitable solutions for the current solid waste management issue to a certain extent. According to the results of this study, out of knowledge and attitudes, only attitude showed a significant relationship to the solid waste management practices of managerial officers. Therefore, creating positive attitudes on solid waste among this important group is vital. This can be achieved through proper awareness campaigns especially on the importance of proper solid waste management, to treat waste as a resource, to which value additions can be given, the importance of waste segregation and waste recycling etc. Since managerial level officers are decision makers and responsible people in the society and leaders for many people, creating correct attitudes among them is more influential to a wider range of society. Correct practices directly influence achieving proper solid waste management practices in the country.

CONCLUSION

Solid waste management is one of the major environmental and social issues in Sri Lanka, and one of the main barriers for implementing sustainable solid waste management practices is low community participation. Hence this study was carried out to identify the impact of knowledge and attitudes on solid waste management practices among managerial officers in Sri Lanka, one of the significant social groups in the country, due to their responsibility and influence on people and their direct involvement in decision and policy making. Majority of managerial officers possess a moderate level of knowledge and favorable attitudes on solid waste aspects, but half of them are practicing poor waste management practices and the rest are practicing moderate or good practices. Significant percentage of managerial officers in Sri Lanka don't have positive attitudes on the value of waste and interestingly, still a substantial number of them still practice poor waste management practices such as open dumping and open burning. Waste segregation and recycling behavior among the managerial officers are also at very poor level. Knowledge on solid waste of managerial officers do not disclose a significant relationship with their waste management practices, but their attitudes on waste show a

significant relationship with the practices and which is a positive correlation. Thus, establishment of proper attitudes especially on waste segregation, value of waste and recycling among managerial officers need to be considered as critical aspects when designing and implementing effective and sustainable waste management practices as they are influential group and their correct attitudes can significantly affect the major part of society. Further, it is required to investigate about other social groups of society as well to formulate sustainable solid waste management practice(s) in the country.

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Entrepreneurship, Innovation & Managing Small Enterprises

Agriculture Insurance for Sustainable Development in Sri Lanka: Evidence from Kurunegala District

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Abstract

Going green mainly focus on the reducing the pollution and practicing the recycling that can lead to more environmentally friendly and ecologically responsible decisions and lifestyles to protect current and future generations. Since it leads to create a sustainable earth for each and every one, paying attention to the concept is very much needed in the present world. Therefore it is important to encourage the agriculture sector within a country. The objective of this study is to identify the current level of awareness of Agriculture insurance among farmers and how agriculture insurance that can inspire the farmers to boost their agro-products for sustainability. Even though agriculture played a vital role in the overall Sri Lankan economy in past, presently agriculture contributes only 7% to the Gross Domestic Product. Agriculture is subject to various risk and uncertainties in both production and income levels. Therefore it is essential to promote an effective risk management mechanism for farmers. Agriculture insurance is one of a solution the best solution to minimize those risk and uncertainties by providing financial protection against loss and damages. A survey conducted with interviewing 42 farmers in selected areas in Kurunegala district shown that the demand for agricultural insurance scheme is considerably low and more than 36% of farmers were not aware of agricultural insurance while another 26% of farmers had doubts regarding the process of agricultural insurance. Further, they stressed that they do not have a clear understanding of the real benefits of such insurance for small farmers like them. Even though Sri Lanka was the first developing country in Asia that launched an all-risk insurance of paddy crop, the survey shows that agriculture insurance should promote by enhancing the awareness of the benefits to assure the farmers. Also, it leads to support not only the short-term agro products but also long-term agro products such as rubber since several studies have indicated that, natural rubber plants are good sink for atmospheric carbon dioxide. Further, it is suggested to promote agriculture by implementing innovative agricultural insurance products. This study opens up avenues to develop agriculture for sustainable development while promoting agriculture insurance in Sri Lanka.

Keywords: Agriculture, Agriculture Insurance, Sustainability

INTRODUCTION

Agricultural production faces many of risks. Nevertheless, two major risks are of concern to the agricultural sector one is price risk caused by potential volatility in prices and production risk resulting from uncertainty about the levels of production those primary producers can achieve from their current activities. There are some kind of risks that arise in the production process which are beyond the control of the farmers. The agro-environmental problems are more pervasive in developing countries. Rapid deforestation, excessive soil erosion, land degradation, loss of biological diversity, watershed degradation, contamination of water, and overgrazing are some of common agro-

environmental problems in most parts of the developing world (Panayotou, 1993). Therefore, there is a need to have a way of taking care of the ever-changing weather, diseases and pests as well as price fluctuations. Agriculture insurance is a tool that will address the risks.

In general, insurance is a form of risk management used to hedge against a contingent losses. Transfer of a risk of loss from one entity to another in exchange for a premium or a guaranteed and quantifiable small loss to prevent a large and possibly devastating loss is the way of operating the insurance. Agricultural insurance is a special line of property insurance applied to agricultural firms in some other part of the world. In recognition of the specialized nature of this type of insurance, insurance companies operating in the market either have dedicated agribusiness units or outsource the underwriting to agencies that specialize in it. Agricultural insurance is not limited to crop insurance, it also applies to livestock, bloodstock, forestry, aquaculture, and greenhouses. Sri Lanka became the first country outside Japan in South East Asia to adopt agricultural insurance for crop losses resulting floods, droughts, pestilences, diseases or damage by wild animals. Objectives of crop insurance are stabilize farmers' income by reducing adverse effects resulting from substantial crop losses due to natural hazards and encourage the farmers to adopt improved technologies which can help to increased production and more efficient use of resources.

The Principles of returning farmers to the center of policy decisions are fundamental to the sustainable development. Governments, businesses, scientists and civil society groups must focus attention on the source of food security, re-planting and protect nature. All these groups must work together to enable the thousands of farm families to grow more crops sustainably through effective markets, more collaborative research and committed knowledge sharing.

A broad-based, knowledge-centered approach to agricultural development is needed. The approach starts with focusing on farmers and the tools and information they need to acquire land, grow crops, bring in their harvest and then get it to market. New investments, incentives and innovations are needed to achieve greater sustainability while delivering increased agricultural production. These benefits must be made available to all farmers, recognizing their role as guardians of shared environment, biodiversity, and ecosystems. There is a need for a shift in thinking which places the farmer at the center of sound and sustainable agricultural practices. This approach delivering productivity and sustainability must also lead to a more equitable and efficient production system. To succeed, any new approach must be based on a stable policy environment within which farmers can work and invest. This in turn requires us to establish stable, long-term policy and regulatory frameworks for the development of agriculture insurance to enrich the agriculture sector in Sri Lanka. By taking international assistance to develop the agricultural sector while promoting and taken their risk through an agricultural insurance will be highly appreciated by farmers.

BACKGROUND OF THE STUDY

There are three major economic activities which contribute to the Gross National Product (GNP) in Sri Lanka, namely Agriculture sector, Industrial sector and Service sector. Beginning of 1950s Sri Lankan economy was mainly based on agricultural sector and by mid-1950, service sector contribution remarkably increases and maintained the highest contribution to the GNP at present. Even though Agriculture is the most important sector of the Sri Lankan economy in past its contribution to the gross domestic product declined substantially during the past 3 decades as 30 percent in 1970 and 7.5 percent in 2017(Annual Report of Central Bank, 2017).

Agriculture is the systematic raising of useful plants and livestock under the management of man (Rimando, 2004). Basically Sri Lankan agriculture sector focuses on tea, coconut, spicy, rubber for export and paddy, vegetables and crops for consumption within the country. With the change of political and security situation of the country, it is essential to develop agriculture sector to achieve the self-sustainability of the country.

Sri Lanka frequently suffers from natural disasters, among which water-induced disasters such as floods, droughts and landslides are the most common and destructive types (Disaster management center, 2010). Currently, Sri Lankan farmers can insure most of their crops through the conventional crop insurance schemes conducted by the government-owned Agricultural and Agrarian Insurance Board (AAIB). The Crop Insurance Board was established under the Parliamentary Act No. 27 of 1973 to operate a comprehensive agricultural insurance scheme for the benefit of the farmers in respect of rice, other field crops, and livestock. Since 1974, the scheme has been funded with finances from the government consolidated fund and also under self-finance schemes. It was brought within a broader framework by the Agricultural and Agrarian Insurance Board Act No 20 of 1999 which came into effect from August 16, 1999, with a view to establishing the scheme on a self-financing basis.

Although AAIB has been operating for more than five decades, voluntary participation has drastically decreased. AAIB, which directly contributes to the economic development of the country, has introduced various insurance schemes and the background has been prepared for the preparation of new insurance schemes for the new market requirements. It is the level of penetration among potential clients is currently less than 5 percent. Among the main causes for low confidence in this scheme is the lack of transparency in loss assessment and underestimation of indemnity payments (Rambukwella et.al, 2007).

Government schemes are not based on actuarial principles and are deemed unsustainable. Agricultural and Agrarian Insurance Board in Sri Lanka is conducting basic insurance products of Crop insurance,

Livestock insurance, Tractor and agricultural equipment insurance, an Insurance scheme for private paddy and warehouses, Health insurance, the Accidental insurance scheme for farmers. Under the Crop insurance, four insurance schemes were introduced. Paddy cultivation insurance introduced to minimize the risk associated with paddy cultivation. Further Vegetable cultivation insurance has been introduced with the intention of encouraging vegetable farmers by adding various methods to suit the market requirements. Also, Maize cultivation insurance has been implemented with the aim of ensuring farmers' economic security covering the occasional damages caused to maize cultivators. These coatings also apply to varieties that are referred to by the Department of Agriculture. Other than that they have insurance scheme for other agriculture insurance schemes as Floriculture insurance, Coconut Growing Insurance, Tea Cultivation Insurance, Sugar crop insurance, Potato cultivation insurance, Chilly Cultivation Insurance, and Big onions Cultivation Insurance.

LITERATURE REVIEW

Sri Lanka's agricultural insurance scheme was initiated in the 1958 maha season, on a pilot project basis with approximately 26,000 acres of paddy in five districts. By 1974, nearly 16 percent of the total area cultivated with paddy had come under insurance in both seasons (Sandaratne, N, 1974). Agricultural insurance is one of strategies to tackle the problem of risks in farming. The poor paddy farmers in the country is caught in the vicious cycle of poverty, limited resources, and low inputs for production and limited output (Heenkenda, 2012).

Insurance gives the farmers greater confidence in venturing upon new and improved farming practices and in making greater investments in agriculture to improve crop yields and increase agricultural production (Ray, P.K., 1967). Insured areas represent a small proportion of total paddy area, and farmers do not tend to insure crops and animals they do not perceive as risky. Farmer apathy toward insurance schemes may be due to inadequate indemnity payments, delays in payments, difficulties in filing claims, among others (Rambukwella et al, 2007).

According to the Rambukwella et al (2007) identified several problems faced by farmers as inefficiency of the officers attached to the agricultural insurance programme, delays involved in the assessment of damages at the initial stage, hold up the re-cultivation process, farming activities could not be done according to the conditions of the agreement, minor damages were not taken into account, interest of bank loans increased due to the delays in indemnity payments, no direct linkage between the farmers and the insurance company, difficulty to obtain indemnities for damages by wild animals, estimation is done during the harvesting period, irrespective of the stage of the crop damages and application form for the insurance claim is difficult for the farmers to comprehend.

Further Rambukwella et al (2007) make many suggestions as when entering into an insurance agreement the farmers should be given all the details about crop damages and the payment of indemnities, activities must conform to the conditions of the insurance agreement, the farmers should get feedback regarding the process of indemnification after the loss assessment, the farmer must participate in the loss assessment process, loss assessment of the primary stage damage should be expedited, the Insurance Officers should be called upon to discharge their responsibilities duly, indemnity should be paid to settle the crop loan in case of total crop failure, extra benefits or bonus schemes should be introduced to regular farmers and they should be educated about such benefits, the amount of insurance coverage should be increased, there should be a good relationship between the farmers and the field officers, indemnity given to crop damages must be increased and the farmers should have the opportunity for direct dealings with the insurance institutions.

METHODOLOGY

Sri Lanka is divided into three major climatological zones where Kurunegala District falls partly in the dry zone and partly in the intermediate zone and uncertainties that the farmer could face in the producing or after production. As per the details provided by the Department of census and statistics, Kurunegala District is one of the leading districts which is involving agriculture activities. Therefore population of the present study was the farmers in the Kurunegala district. According to Malterud et al (2015) the concept of "information power" guides adequate sample size for this kind of interviews and information power indicates that the more information the sample holds, relevant for the actual study, the lower amount of participants are needed. Based on that, researcher selected 42 farmers in Kurunegala District as the sample for this study. The sample was taken randomly using simple random sampling technique.

Both primary data and secondary data were used for the study. The study involved the collection of primary data using interview method in order to answer questions regarding awareness of agriculture insurance among selected farmers. The data collection tool was an unstructured interview with open-ended questions which was more like a guided conversation than a strict structured interview. Since these interviews are more flexible as questions can be changed depending on the respondents' answers and allows the respondent to talk in some depth, choosing their own words, it helps the researcher to develop a real sense of a farmers' understanding on awareness of agriculture insurance facilities. By doing unstructured interviews the researcher could able to ensure that the questions were not misunderstood by the farmers and the risk of collecting incomplete information was minimized.

Even though the majority of questions were unstructured, the researcher wanted to gather information as much as possible, the researcher had predetermined questions grouped together to address the objective of the study. Case by case supplementary questions were asked by the researcher and sometimes omitted or change the questions. For some questions, the researcher used a Likert scale to measure the perception and attitude of the respondents regarding agriculture insurance. Questions on demographic variables such as gender, age, education level, and marital status were structured. This method allowed more freedom in recording responses and the effort was made to create a friendly atmosphere of trust and confidence among farmers so that the respondents felt at ease. The awareness of agriculture insurance was measured by asking several questions as knowledge of existing insurance schemes, benefits of agriculture insurances, channels of distribution, cost of agriculture insurance, the procedure for acquiring agriculture insurance etc. depending on the level of responsiveness among selected farmers.

FINDINGS

Data Analysis

This study analyzed 42 responses out of the 50 questionnaires administered which is 84 percent. Out of the 42, 37 of them were crop farmers and 05 were the stakeholders.

Demographic Data Analysis:

In this section, the researcher sought to collect information on the respondents' age, gender, highest academic qualification, members of the household and farming experience.

Table 1: Percentage Distribution of Respondents by Age

Age	Frequency	Percentage
27 years and below	2	5
28-37	4	10
38-47	11	26
48-57	16	38
58 and above	9	21
Total	42	100

The findings on Table 1 show that 38% of the respondents were aged between 48-57 years. It was also found that 26% of the respondents were aged between 38-47 years, 21% were above 58 years. 28-37 years 10% and 5% of 27 years and below. According to Torkamin (2002) age has an influence in the adoption of agriculture insurance.

Table 2: Percentage Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	36	81
Female	6	19
Total	42	100

Table 2 shows that 6 (19%) of the respondents were female while 36 (81%) were male. This is an indication that most of the farmers interviewed were males.

Table 3: Distribution of the Respondents by Farming Experience

Farming Experience	Frequency	Percentage
5 Years and below	2	5
6-10 Years	4	10
11-20 Years	7	17
21-30 Years	8	19
31-40 Years	12	29
41-50 years	7	17
Over 50 years	25	
Total	42	100

Table 3 shows that 12 (29%) of the respondents had 31 years – 40 years farming experience and 8 (19%) respondents had 21 years – 30 years of farming experience. According to the collected data, most of the respondents had 10 years – 50 years of farming experience. This is an indication that most of the farmers interviewed were more experienced farmers.

Influence of Awareness on the use of Agriculture Insurance:

To find out the influence of awareness of the use of agriculture insurance, the study assessed whether the respondents had heard of agriculture insurance, the source of information on agriculture insurance, organizations offering agriculture insurance, having insured crops or livestock, the motivation for insurance and the benefits of agriculture insurance.

Having Heard of Agriculture Insurance:

On whether the respondents had heard of agriculture insurance, the respondents were asked to indicate whether they had heard of insurance or not and it is presented in Table 4.

Table 4: Having Heard of Agriculture Insurance

Hearing of Agriculture Insurance	Frequency	Percent
Well aware	11	26.01
Not clear	16	37.11
Not aware	15	36.88
Total	42	100

According to the table 4, 26.01 % of the respondents interviewed had heard of agriculture insurance while 36.88 % had never heard of it and 37.11% of highest respondent are not clear about the agriculture insurance process. The finding is an indication that most of the respondents had not clear idea about the agriculture insurance. According to Baker (2000), farmers' awareness of the importance of insurance and its influences on their incomes support the uptake of agriculture insurance.

CONCLUSION AND RECOMMENDATIONS

Agriculture is a sector of an economy where uncertainty due to natural hazards has a major effect on decision making. A key role played by insurance program is the indemnification of risk-averse individuals who might be adversely affected by natural probabilistic phenomena. Insurance, by offering the possibility of shifting risks, enables individuals to engage in risky activities which they would not otherwise undertake. Unlike other sectors, agricultural insurance is rarely provided by the market. Even in advanced market economies, all-risk crop insurance is offered only by public agencies. In developing countries, where the risk-bearing capacity of farmers is even lower, no such mechanism usually exists. Insurance, by offering the possibility of shifting risks enables individuals to engage in risky activities which they would not otherwise undertake.

As agriculture insurance is a means of protecting the agriculturist against financial losses due to uncertainties that may arise from named or all unforeseen perils beyond their control, it is one method by which farmers can stabilize farm income and investment and guard against the disastrous effect of losses due to natural hazards or low market prices. Agriculture insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agriculture year. It cushions the shock of agriculture losses by providing farmers with a minimum amount of protection. It spreads the agriculture losses over space and time and helps farmers make more investments in agriculture.

Putting the issue of premium cost aside, there is a general expectation that the Government will come forward to rescue in the consequences of any disaster.

However, agriculture insurance should be part of the overall risk management strategy. Insurance comes towards the end of risk management process and it is a redistribution of the cost of losses of few among many, and cannot prevent economic loss. Safeguard natural resources is must for the sustainable development and therefore for the safeguard of natural resources agriculture insurance is necessary. While much of the knowledge needed to improve global agriculture already exists, including within remote communities, it often does not reach those farmers that could benefit most. Therefore increase the level of education on crop and natural resource management for farmers, promote the development of village-based knowledge centers, provide access to scalable information technologies for farmers to receive weather, crop, and market alerts, as well as other early warning systems to help them make the right decisions for sustainability and productivity can be introduced to promote sustainable development through farmers. Even though there is an increased complexity and variation in agriculture risk and very difficult in making rational decisions when faced with those risks, the survey showed that farmers were not aware regarding agriculture insurance as one of the best solution that they can use to face those kinds of risks.

Improve access to agricultural inputs and services including mechanical tools, seeds, fertilizers, and crop protection materials are also needed to promote agriculture. Moreover encouraging and coordinate various local players to ensure information regarding agriculture insurance get into farmers' hands and risk management tools to support farmers in managing weather and market variations are vital.

Farmers have lost confidence in the agriculture insurance scheme and their participation has also dropped drastically. Even though smaller farmers have more interest in the agriculture insurance than the larger farmers. However, farmers are dissatisfied with the agriculture insurance scheme due to the insufficient indemnities compared with the cost of production or amount of damage, and the time lapse in indemnity payments. At the time of indemnity, there is a no transparency in loss calculation and it creates frustration among the farmers due to underestimating of the losses. As a result of that, the farmers considered agriculture insurance its extra burden on them. Therefore in there is a less no of farmers have participated in the agriculture insurance. On the other hand, less demand effect to the government administration cost. Because government always allocated funds for the farmers and if they were not taken the claim or the coverage that government administrative expenses are high but less premium participatory of farmers is creating negative attitudes within the country.

Farmers are interested on pension and social security funds. Because they feel that they were secured after the age of sixty until death. Therefore previously government introduced the 'Suvasetha' health insurance scheme. But, the farmer pension scheme fund also hangs in the balance since the government grants were not forthcoming. Although the payment of pension has increased several times, the premium rates have remained unchanged since its inception. This also contributed to the lack of soundness. The premium rates of farmer pension and social security benefit scheme important to increased by a reasonable amount. They were expecting the protection through the agriculture insurance not only the crop losses but also their lives.

To develop the agriculture insurance policy and make interest to farmers depend on the awareness of agriculture insurance. Therefore AAIB has responsibility for the smooth functioning of a workable agricultural insurance scheme by concerned with the immediate supervision which who has well aware of assessment of agricultural damages and timely payments of indemnities. Its make farmers satisfaction because they are known they have protection to stand once again against the risk also their protection.

Therefore to overcome the time lapse of indemnity payment, the administrative structure of claim payments must be decentralized so that indemnity payments could be accelerated through its existing branch office network over the island. Therefore establishing the branches or the facilitating the loss assessor for regional wise will be more effective than current situation to estimated loss accurately and timely and avoid the time lapse of indemnity.

The agriculture insurance coverage of crop insurance scheme needs to be increased to at least two-thirds of the cost of cultivation and it should be changed periodically depending on the changes in the cost of production. There should be a strong foundation for the agriculture insurance without political intervention that will be a encourage for all farmers to enter into the insurance scheme. Crop insurance is compulsory for when taken the crop loans. They were taken their protection due to fear of acceptance of loan not to the real risk protection.

Currently, we haven't the uploaded data for the natural perils and other covered peril under the agriculture insurance. Therefore it is difficult to move for a reinsurance system. A proper computerized database must be updated and continuous attention should be given to the assessment of loss in a standard way. Insuring groups of farmers, village wise or group of farmers by crop categories can reduce administration costs for small-scale farmers and it will help to encourage the farmers to organize themselves to insurance mutually and such a course of action will accrue benefits both for the insured and the insuring agency. Also, it leads to mutual understanding and having built trust and the support within the group.

The increase of the agriculture insurance awareness may lead to increase the risk takers for farming and as a result of that cultivated lands and employability in agriculture sector will be increased. Therefore increasing the awareness of agriculture insurance will be a more effective strategy to promote agriculture sector in the country and as a result of that green environment will exist for the sustainability. On the other hand encourage to use the organic methods for farming is a more operative way for the earth and it helps to mitigate the global warming as well. Also, the development of agriculture sector may support for the young generation to enter the agriculture by thinking it as not a new challenge. In our country many young people believe that there is no future in farming, yet quite the opposite is true. If having a clear mechanism for encouraging the agriculture sector through agriculture insurance it's a warrant to increase the agriculture sector by participating the young participatory as well.

Agriculture insurance is offered not only for crop insurance but also other agro products. Rubber is one of the important cash crops cultivated in Sri Lanka. Because rubber plants improve air quality by converting exhaled carbon dioxide into breathable oxygen, air including contaminants is absorbed through the rubber plant's leaves. Contaminants are drawn through the plant with the air and deposited in the soil. Once the contaminants are in the soil, they encounter microbes that naturally live around the roots. But currently Sri Lanka hasn't any insurance scheme for the rubber. The importance of developing agriculture insurance leads to sustainable agriculture has to play the important role in preserving natural resources, reducing greenhouse gas emissions, halting biodiversity loss and caring for valued landscapes. Because agriculture has a twin role in adapting and mitigating climate change, agricultural systems worldwide are faced challenges of climate change and other natural threats. When using the clear mechanism for the development of agriculture people can consume the healthy and high-quality foods. Also the natural resources of water, soil and air are kept in good condition for future generations.

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Development through Competitive and Green marketing strategy: Manufacturing SMEs, operating in Jaffna district

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Abstract

Small medium enterprises (SMEs) are often the driving forces and backbone for the Nation. The purpose of the study is to examine the impact of marketing strategy on the SME development in Jaffna district. All the owners of manufacturing SMEs in Jaffna district were the population for this study and 302 managers were contacted for data collection. Data were collected by using questionnaires. Random sampling method was applied to select samples for this study. Structural equation method (SEM) was utilized to assess the impact of each dimension marketing strategy on the development of SMEs. Marketing strategy and development model derived from theories and models of earlier researches. The linkage of Marketing strategy with the development was created based on the resourced based and stakeholders underpinning theories. This study identified and confirmed two marketing strategy, namely competitive and green marketing strategy and five dimension of development of SMEs as financial, customer, employee, growth and social development perspectives. Mixed result were identified from the dimension of marketing strategy and development of SMEs. Competitive strategy had significant impact on financial, customer and growth perspective development. Green marketing strategy had significant effect on customer, employee and social development. Green marketing strategy also indirectly effects on financial and growth of SMEs through customer development. This research findings regarding competitive marketing strategy could help mangers of SMEs to gain competitive advantage and development. Green marketing strategy explains managers how this strategy affect directly and indirectly the development of organization. This finding induce the managers of SMEs to apply green marketing strategy to be successive in this competitive world. The paper can help managers in identifying the perspectives of development of SMEs in Jaffna district. This study establish five dimension of development rather than performance only.

Key words: competitive marketing strategy, green marketing strategy, development of SMEs

INTRODUCTION

SMEs is the backbone in any economy through employments generation, contribution to Gross Domestic Product (GDP) embarking innovations and stimulation of other economic activities(ESBA, 2011).SME sector was seriously affected by nearly three decades of separatist war between 1983 and 2009 in Sri Lanka and post war environment contains destruction of infrastructure, poverty, regional imbalance, low income, poor education, psychological effects on society and women headed families.

SMEs in Jaffna district have captured 99% of enterprises, at the same time low and fluctuating gross domestic product (GDP) contribution of NP which displays poor development of SMEs. Pilot study was conducted to identify the problems from 36 SMEs in Jaffna District. The answer from owner of SMEs different 54 problems were identified, in these pool of problems 28 are marketing related problems and 26 are non_marketing related problems. This pilot study displayed that there is huge marketing related problems for SMEs in Jaffna district. Marketing of goods or services is the ultimate objectives and goals of organizations for all types of organizations. Application of proper marketing strategies catch up the sustainable growth and development of organizations. A blend of marketing strategies better deal with environmental challenges and enjoy superior performance in SMEs. Intelligent firms develop their business by applying proper marketing strategies, but impoverished firms fail to do so (Lazer & Culley, 1983). Strategic analysis was conducted on the development of SMEs in the European context (Irina, 2008). Shaw (2012) has created marketing strategy concept commonly for all types of organizations. The strategy configuration analysis related Chinese's SMEs was explored by Tang and Hull (2011). Perera and Wijesinha (2011) suggested that marketing strategies can drive high development of SMEs. Competitive strategy was already empirically tested on financial, customer development and growth of organization (Yan and Chew, 2011). Competitive strategy was not tested on the employee and social development. Green marketing strategy was tested on financial, customer and employee development (Chahal, Dangwal, and Raina, 2014), but not tested on the growth and social development. They also produced mixed result as positive and negative. In addition competitive and green marketing strategies have still not been empirically investigated in the SMEs in the Jaffna district, which is the gap in this study. Therefore, the main aim of this study is to explore what extent competitive and green marketing strategies impact on development of SMEs in Jaffna district.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The term SME is denoted as micro, small and medium enterprises (MIC, 2015). Different countries use different definitions for SMEs based on their level of development. The commonly used yardsticks are total number of employees, annual turnover and investment (MIC, 2015). SMEs are also categorized as Manufacturing service and trade.

Competitive Marketing Strategy (CMS)

Porter (1979) explained that organization can achieve competitive advantage over its rivals: cost advantage and differentiation advantage. Further he identified three strategies that businesses can use to tackle competition. They are cost leadership, differentiation strategy and focus strategy. Cost advantage is at a lesser cost, organization provides the product and services as its competitors.

Differentiation advantage is better and differentiated product services offered by organization than its competitors. Focus strategy ideally tries to get businesses to aim at a few target markets and this strategy is often used for smaller businesses since they may not have the appropriate resources or ability to target everyone. Michael Porter's theory of the competitive advantage of nations provides a sophisticated tool for analyzing competitiveness with all its implications. Kotler (2000) explained that promotion is a major competitive tool by inform about products, persuading target audience to purchase by promotions and sell directly to customers

Green Marketing Strategy (GMS)

Earlier researchers revealed dimension of green marketing strategy, namely, green purchasing, manufacturing, green process, waste disposal and green supply chain (Koner and Cohen, 2001). Green purchase is denoted as the probability and willingness of a person to give preference to products that are having eco-friendly features over other traditional products in their purchase considerations. Green purchasing includes use biodegradable, recyclable materials, contamination-free and green materials, purchase safety certified materials, do not use toxic, harmful ingredients, or indecomposable materials (Wu and Lin, 2016). The green *manufacturing* is use fewer natural resources, reduce pollution and waste, recycle and reuse materials, and moderate emissions in their processes (Wu and Lin, 2016). Green marketing process includes use of cleaner technology, use of ecological materials, urges customers to take environmental actions, the firm selects cleaner transportation method, holds awareness seminars for customers and implement natural environmental programs (Chahal, Dangwal and Raina, 2014). Green supply chain management consists of uses ISO certification on quality, redefines operation and production processes, uses recyclable or reusable containers, requires commitment from senior managers and environmental management systems (Chahal, Dangwal and Raina, 2014).

Development

Development is the process in which someone or something grows or changes and becomes more advanced (Beard, 2000) and gradual growth of something in organization (Cook, 1998). Ellerby and Taylor (2005) stated that "organization development is aimed at improving organizational effectiveness". Organizational development defined as a planned intervention of change for group, team or organization to improve organization (Taute, and Taute, 2012). According to Bennett and Brodie (1979) indicator of development is the roles a manager takes on performance and effectiveness and success of SMEs. Marin (2002) focus on the identification of the most relevant tendencies in the SMEs sector from the perspective of six indicators considered to be relevant: the number of enterprises, the number of persons employed, the gross value added,

the apparent labor productivity, the rate of profitability and the propensity to invest. Among many dimension of development, financial perspective, customer perspective, people (employee) perspective, growth perspective and social perspectives were considered as major elements for this research. Financial perspective encourages to high-level financial performance as cash flow, total revenue, return on equity, return on assets, leverage ratio and liquidity ratio (Tsai and Chou, 2009; Lavric, 2010). Customer perspective encourages the identification of measures important to our customers as number of new customers, product return rate, customer retention rate, on time delivery, share of important customer purchases, customer satisfaction and ranking by important customers (Yongvanich and Guthrie, 2006). Employees' development was foundation for organization development which includes sustainable job and benefit, worker development, innovation and training and leadership. Worker development emphasis on teamwork and group activities, employee involvement, learning, quality of work life, human resource capacity utilization and productivity (Olaru *et al.*, 2010). Leadership includes employee care, equal and fair treatment, building the confidence and information to employees (Yongvanich and Guthrie, 2006). Growth of organization was indicated by the development of number of branches or sales centers, increased information transfer speed, number of employees, turnover and capital growth, new product introductions, advances in technical, financial, marketing and other field of competence, develop new generation of products and the mentality to face risk (Navickas and Malakauskaite, 2009). Social perspectives is related to benefits for the community, sell products related to the natural, historical and cultural environment, involvement in the community's ecological projects, contribution to the local infrastructure development, education for the community and reducing risk to human health and safety (Prud'homme and Raymond, 2016)

Underpinning Theory

The Resource-Based View (RBV) and resource-advantage (R-A) theory is an economic tool used to determine the strategic resources available to a firm (Barney, Jay, 1991, Hunt and Morgan, 1995). SMEs have unique resources which create comparative advantage by applying competitive marketing strategy and achieve market position. The stakeholder of an organization can be defined as a group or individual who can affect or is affected by the achievement of organizational objectives (Freeman, 1984). Thus, the objective of SMEs should be to balance the competing interests of these stakeholders (Fontaine, Haarman, & Schmid, 2006). In this study competitive marketing strategy of SMEs underpins the resource based and advantage theory and green market strategy of SMEs underpins the stakeholder theory.

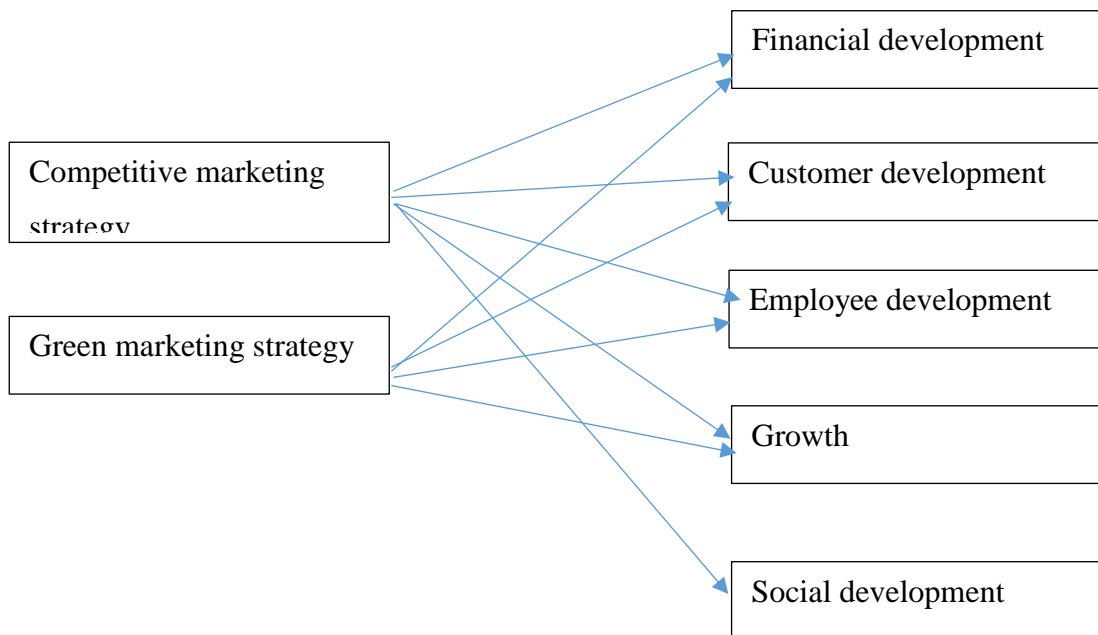


Figure 1: Conceptual model of Competitive and green marketing strategy and Development of SMEs

Hypotheses Development

CMS and Development of SMEs:

Gajanayake (2010) diagnosed the impact of marketing strategies on the business growth in Sri Lanka. Pushpakumari & Watanabe (2009) try to empirically investigate the performance differences and business strategy orientation of small and medium sized Enterprises (SMEs) in two Asian economies. Nieminen, Larimo and Springer (2002) explored to analyze market strategies and performance of Western firms active in Eastern Europe (EE). Mutisya Swabra Mumbua (2010) applied competitive strategies for SMEs in Kenya. Yan and Chew (2011) applied competitive marketing strategy for construction SMEs, namely, differentiation and focus strategies. Specially, it appeared that construction SMEs could develop the institution mechanism and adopt new technology and process as important means to achieve competitive advantage and success. The construction SMEs should rely heavily on developing marketing differentiation and focus in order to be sustainable in the industry and to achieve competitive advantage and success. Focusing on a market segment could make a company to gain exclusive experience of the conditions and in turn improves its responsiveness. Thus focus strategy may provide SMEs some potential for creating competitive. Differentiation strategy through ancillary intangibles may prove effective to achieve success for small firms in China.

Based on the a

H1: CMS impacts on the financial development of manufacturing SMEs in Jaffna district

H2: CMS impacts on the customer development of manufacturing SMEs in Jaffna district

H3: CMS impacts on the employee development of manufacturing SMEs in Jaffna district

H4: CMS impacts on the growth of manufacturing SMEs in Jaffna district

H5: CMS impacts on the social development of manufacturing SMEs in Jaffna district

GMS and Development of SMEs:

Yang *et al.* (2013) exposed environmental marketing strategy effects on market-based assets listed firms in China. Devi Juwaheer *et al.* (2012) analyzed the impact of green marketing strategies on consumer purchasing patterns in various hypermarkets and supermarkets in Mauritius. There is possibility of introducing greener patterns of consumption into contemporary lifestyles in the current context where green products are increasingly available. Wu and Lin (2016) explored the influence of green marketing strategies on business performance by surveying organic farms certified and registered in Taiwan. Yanget *al.* (2013) empirically examined the effect of environmental marketing strategy on market-based assets and the moderating effect of strategic proactivity on the above relationships by using survey data collected from chief executive officers of publicly listed firms in China. Croninet *al.* (2011) explained that green marketing strategies become increasingly more important to firms adhering to a triple-bottom line performance evaluation, it is essential to better understand the role of “green” as a marketing strategy. Hence we propose the following hypotheses:

H6: Green marketing strategy impact on the financial development of manufacturing SMEs in Jaffna district

H7: Green marketing strategy impact on the customer development of manufacturing SMEs in Jaffna district

H8: Green marketing strategy impact on the employee development of manufacturing SMEs in Jaffna district

H9: Green marketing strategy impact on the growth of manufacturing SMEs in Jaffna district

H10: Green marketing strategy impact on the social development of manufacturing SMEs in Jaffna district.

H11: Green marketing strategy impact on the financial development of manufacturing SMEs in Jaffna district through customer development.

H12: Green marketing strategy impact on the growth of manufacturing SMEs in Jaffna district through customer development.

RESEARCH METHODOLOGY

Initially the questionnaires were issued to 350 owners of manufacturing SMEs by applying random sampling method operating in Jaffna district, but 302 questionnaires were returned. The items used to

measure competitive marketing strategy and green marketing strategy and their impact on financial development, customer development, employee development, growth and social development were derived from literature review, interviews and discussions with the owners and the subject experts. The studies used in generating items independent and dependent variables are given in table 1. The items generated for variables were based on a five point scale(1=strongly disagree, 5= strongly agree). The finalized instrument comprised 14 items for CMS, 11 items for GMS, six for financial development, five for employee development, 11 item for employee development, six item for growth and six item for social development. The research instrument was finalized after pretesting it using qualitative and quantitative approaches. The content validity of the each items were ensured by the literature, interview with managers of SMEs and open discussion with subject experts. Pretest was conducted on 30 SME owners operating in manufacturing SMEs.

Table 1: Generation of conceptual model

Components	studies
CMS	Yan and Chew (2011); Michael Porter (1979); Mutisya Swabra Mumbua (2010)
GMS	Wu and Lin (2016); Chahal, Dangwal and Raina (2014); Croninet <i>al.</i> (2011)
Financial development	Lavric (2010) , Stubblefield <i>et al.</i> (2010) Olaru <i>et al.</i> (2010) , Tsai and Chou (2009), Yang and Xu (2006)
Customer development	Stubblefield Loucks <i>et al.</i> (2010); Olaru <i>et al</i> (2010), Tsai and Chou (2009); Yongvanich and Guthrie (2006)
Employee development	Prud'homme and Raymond (2016); Olaru <i>et al</i> (2010), Stubblefield Loucks, <i>et al.</i> (2010); Yang and Xu (2006)
Growth of SME	Lavric (2010) ; Tsai and Chou (2009); Yang and Xu (2006)
Social development	Olaru, <i>et al.</i> (2010); Yongvanich and Guthrie (2006)

DATA ANALYSIS

Reliability Analysis

Reliability is the measure of how consistency a scale will give the same response, if data are collected at different points in time (Hair & Anderson, 2010). The cut-off point of Cronbach's alpha coefficient of a scale should be above 0.7 or 0.5 (Nunnally, 2010).

Table 2: Reliability scores of construct of the conceptual model

Construct	Cronbach's alpha Coefficient
Differentiation	0.822
Cost leadership	0.635
Focus	0.800
Promotions	0.622
Green purchasing and manufacturing	0.806
Green process and waste disposal	0.600
Green supply chain	0.603
Financial development	0.872
Customer development	0.871
Sustainable job and benefits	0.613
Worker development	0.834
Leadership	0.656
Growth of SMEs	0.812
Social development	0.784

Overall Cronbach's alpha coefficient for all the constructs is 0.792. This suggests that the internal consistency of every construct was within the acceptable limits. Kaiser (1974) recommends that the

accepted index of KMO & Bartlett's Test of Sphericity should be over 0.5. Also The KMO value is 0.845 with Barlett's test of Sphericity (BTS) co-efficient as chi-square= 1818.7, df=741 and BTS=0.000. Hence, data indicate the suitability and appropriateness.

Confirmatory Factor Analysis

CFA was performed initially factor-wise on each of the independent and dependent variables(Hair & Anderson, 2010). Both measurement estimates and structural estimates were examined for overall model fitness as recommended by Hair & Anderson (2010).

First Order CFA Result

CMS has four dimension as differentiation, cost leadership, focus and promotion. Fourteen item were assigned to CMS. Low factor loading (<0.5) of four items were deleted. Balance ten items were moderate to high factor leading (Table 3). Another variable green marketing strategy consists of 11 items, five items were deleted by the low factor loading. Balance six items were moderate to high factor loadings (Table 3). One item from the financial development, two item from customer development, four items from employee development, one from growth and three from social development were deleted by low factor loadings. Balance items were moderate and high factor loadings.

Table 3: First order CFA result of independent variables

Items	SRW	Model fit indices
Competitive marketing strategy		Chi-Square=88.417
<i>Differentiation</i>		CMIN/df=2.947
Product quality	0.85	NFI= 0.912
Innovative product features	0.87	CFI=0.968
product customization (tailor-made products)	0.89	RMSEA =0.8
Cultural match	0.86	GFI=0.949
<i>Focus</i>		AGFI=0.906
Selected market	0.88	
Market leadership	0.82	

innovate products/services	0.58	
<i>Advertising and promotion</i>		
Adequate awareness	0.60	
Adequate promotions	0.71	
Personal selling	0.53	
Green marketing strategy		Chi-Square=7.276
<i>Green purchasing and manufacturing</i>		CMIN/df=0.909
Use biodegradable recyclable materials	0.882	NFI=0.993
Use natural products	0.857	CFI=0.945
Avoid producing waste matter, wastewater, exhaust gas	0.898	RMSEA =0.3
<i>Green supply chain</i>		GFI=0.992
commitment from senior managers	0.621	AGFI=0.980
reduce energy consumption	0.888	
greenhouse gas emission and low energy	0.680	

The CFA of CMS had a CMIN/df value of 2.947 and it is below the cutoff point. Also fit indices CFI, GFI, TLI and AGFI were above 0.9. Additionally, RMSEA value was below the cutoff points. These indices suggest a good model approximation to the sample data (Table 3). The CFA of GMS had a CMIN/df value of 0.909 and it is below the cutoff point. Also fit indices CFI, GFI, TLI and AGFI were above 0.9. These indices suggest a good model approximation to the sample data (Table 3).

CMS and Financial Development

The chi-square, CMIN/df, CFI, RMSEA and NFI values for the CMS – financial development model came to be 464.096, 3.73, 0.909, 0.072, 0.890 respectively, showing high model fit (Table 4). The SRW of items lie between 0.508 and 0.894.

Table 4: SEM result for CMS and Financial Development

CMS and financial development	SRW	Model fit indices
Competitive marketing strategy		Chi-Square=464.096
<i>Differentiation</i>		CMIN/df=3.73
Product quality	0.851	NFI= 0.890
Innovative product features	0.873	CFI=0.909
product customization (tailor-made products)	0.894	RMSEA =0.072
Cultural match	0.868	
<i>Focus</i>		
Selected market	0.881	
Market leadership	0.823	
innovate products/services	0.583	
<i>Advertising and promotion</i>		
Adequate awareness	0.604	
Adequate promotions	0.711	
Personnel selling	0.538	
Financial Development		
Cash flow	0.805	
Total revenue	0.875	
Return on equity	0.577	
Gross profit	0.551	
Return on assets	0.508	

CMS and Customer Development

The model values for chi=quare, CMIN/df, CFI, RMSEA and NFI values for the CMS and customer development were recorded as 248.567, 4.361, 0.953, 0.076, 0.94 (Table 5). SRW values were between 0.53 and 0.88 for items of CMS (Table 5).

Table 5: SEM result for CMS and Customer Development

CMS and customer development	SRW	Model fit indices
Competitive marketing strategy		Chi-Square=248.567
<i>Differentiation</i>		CMIN/df= 4.361
Product quality	0.85	NFI= 0.94
Innovative product features	0.87	CFI=0.953
product customization (tailor-made products)	0.89	RMSEA =0.076
Cultural match	0.86	
<i>Focus</i>		
Selected market	0.88	
Market leadership	0.82	
innovate products/services	0.58	
<i>Advertising and promotion</i>		
Adequate awareness	0.60	
Adequate promotions	0.71	
Personal selling	0.53	
Customer Development		
Number of new customers	0.86	
Customer retention rate	0.77	

Customer satisfaction through on time delivery	0.80	
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CMS and Growth of SMEs

The CMS and employee development model indicated that the items were significantly contributing as the SRW was quite acceptable as per the threshold criteria (Table 6).

Table 6: SEM result for CMS and Growth of SMEs

CMS and Growth of SMEs	SRW	Model fit indices
Competitive marketing strategy		
Growth of SMEs		Chi-Square=276.946
Increased of branches or sales centers	0.856	CMIN/df= 3.258
Number of employees	0.873	NFI= 0.913
Turnover	0.791	CFI=0.937
Capital growth	0.779	RMSEA =0.077
New product introductions	0.790	

CMS with employee development and social development

The model of CMS with employee development and social development indicated that the items were not significantly contributing as the SRW was not met the threshold value.

GMS and Customer Development

The chi-square, CMIN/df, CFI, RMSEA and NFI values for the GMS – financial development model came to be 51.014, 2.2126, 0.987, 0.061, and 0.975 respectively, showing high model fit. The SRW of items lie between 0.621 and 0.882 indicating that all items are significant predictors.

Table 7: SEM result for GMS and customer development

Items	SRW	Model fit indices
Green marketing strategy		Chi-Square=51.014
<i>Green purchasing and manufacturing</i>		CMIN/df=2.126
Use biodegradable recyclable materials	0.882	NFI=0.975
Use natural products	0.857	CFI=0.987
Avoid producing waste matter, wastewater, exhaust gas	0.748	RMSEA =0.061
<i>Green supply chain</i>		GFI=0.966
Commitment from senior managers	0.621	AGFI=0.936
Reduce energy consumption	0.828	
Greenhouse gas emission and low energy	0.680	
Customer Development		
Number of new customers	0.812	
Customer retention rate	0.845	
Customer satisfaction through on time delivery	0.627	

GMS and Employee Development

The model values for chi=quare, CMIN/df, CFI, RMSEA and NFI values for the GMS and employee development were recorded as 241.563, 4.558, 0.889, 0.078, 0.943 (Table 8). All SRW values were between 0.513 and 0.862 for items of GMS.

Table 8: SEM result for GMS and Employee development

Items	SRW	Model fit indices
Employee development		Chi-Square=241.563
Worker development and training		CMIN/df= 4.558

employee involvement,	0.742	NFI=0.943
productivity	0.813	CFI=0.889
promoting to constructive group/ team work	0.862	RMSEA =0.078
developing multi-skilled and new method by initial and continuous training	0.800	GFI=0.966
Leadership		AGFI=0.936
employee care	0.564	
equal and fair treatment,	0.807	
building the confidence	0.513	

GMS and Social Development

The GMS and employee development model indicated that the items were significantly contributing as the SRW was quite acceptable as per the threshold criteria (Table 9).

Table 9: SEM result for GMS and Social Development

Items	SRW	Model fit indices
Social development		Chi-Square= 57
Sell products related to the natural, historical and cultural environment	0.524	CMIN/df= 2.375
The education for the community	0.795	NFI=0.969
Reducing risks to human health and safety	0.864	CFI=0.882
		RMSEA =0.068
		GFI=0.959
		AGFI=0.922

GMS with Financial Development and Growth

The model of GMS with employee development and social development indicated that the items were not significantly contributing as the SRW was not met the threshold value. In addition the model of GMS indirectly contributing to the financial and growth through the customer development (Table 10). Financial and growth of SMEs were not affected by GMS ($r^2 = 0.325$ respectively, insignificant 0.474). GMS has significant effect on the customer development (0.553, 0.000) and customer development significantly impacts on financial development (0.357, 0.032). So there is full mediation of customer development between the green marketing strategy and financial development and hypothesis 11 was accepted. Customer development has significant impact on the growth of SMEs (0.427, 0.012). There is also full mediation between green marketing strategy and growth of SMEs hypothesis 12 was accepted.

Table 10: Indirect result of SME for GMS and Financial Development and Growth

Items	SRW	Sig.
Green marketing strategy and financial development	0.172	0.474
Green marketing strategy and customer development	0.553	0.000
Customer development and financial development	0.357	0.032
Green marketing strategy and growth	0.202	0.325
Green marketing strategy and customer development	0.553	0.000
Customer development and growth	0.427	0.012

RESULT OF HYPOTHESES TESTING

The study show that competitive marketing strategy has a significant and positive impact on financial development (0.757), customer (0.653) and growth (0.525) of SMEs (Table 11). Green marketing strategy has directly impact on the customer development, employee development and social development and indirectly impact on financial development and growth through customer development.

Table 11: Hypotheses testing

Hypotheses	SRW	Sig.	Conclusion
H1: competitive strategy impact on the financial development of manufacturing SMEs in Jaffna district	0.757	0.000	Accepted
H2: competitive strategy impact on the customer development of manufacturing SMEs in Jaffna district	0.653	0.001	Accepted
H3: competitive strategy impact on the employee development of manufacturing SMEs in Jaffna district	0.284	0.245	Rejected
H4: competitive strategy impact on the growth of manufacturing SMEs in Jaffna district	0.525	0.000	Accepted
H5: competitive strategy impact on the social development of manufacturing SMEs in Jaffna district	0.102	0.321	Rejected
H6: Green marketing strategy impact on the financial development of manufacturing SMEs in Jaffna district	0.160	0.474	Rejected
H7: Green marketing strategy impact on the customer development of manufacturing SMEs in Jaffna district	0.544	0.000	Accepted
H8: Green marketing strategy impact on the employee development of manufacturing SMEs in Jaffna district	0.794	0.021	Accepted
H9: Green marketing strategy impact on the growth of manufacturing SMEs in Jaffna district	0.199	0.325	Rejected
H10: Green marketing strategy impact on the social development of manufacturing SMEs in Jaffna district	0.448	0.000	Accepted

DISCUSSION AND IMPLICATION

The present study considered owners/ managers of the SMEs(Manufacturing) operating in Jaffna district. The study is undertaken on competitive and green marketing strategy on the development of SMEs. The findings confirm the three dimensions of CMSconstruct. Unlike the dimension construct

of earlier studies and theories (Yan and Chew, 2011; Porter, 1979), this study established three appropriate dimensions of CMS, namely, differentiation, focus and promotions. These dimensions are quite significant in the context of manufacturing SMEs. The differentiation consists of four items, out of which high contribution is done by quality, innovative features, product customization and culture match. The SMEs try to produce quality products, most of their products are handmade with innovative features, SMEs directly communicate with customers and fulfill the needs of customer, and consider their culture to produce the products. Second factor loaded moderate contribution, namely, focus strategy consists of three items as selected market, market leadership and innovative products for selected market. SMEs consist of 90% of micro business. Most of the micro producers focus on a selected market, produce innovative and unique products for that selected market and try to access the market leadership in the selected market. Another dimension of promotion includes that SMEs advertise to create awareness and induce to purchase, promote and induce customer to purchase and have personnel selling to sell their products. SMEs do not use cost leadership strategy as its contribution is below average, that is, SMEs haven't low prices by high cost of production, have high operating cost, don't use latest technology in operation. Further under factor of differentiation, SMEs haven't complex and imitated products, easily they can be copied by others, so this item has low contribution. CMA has significant positive impact on the financial, customer and growth of SMEs. So the study establishes that firms can induce the development through adopting CMS. Over all strong contribution of CMS is on financial and growth of SMEs and moderate impact of CMS on customer development. The result indicates that the firms that adopt the phenomena of competitive marketing in their activities can ultimately develop the SMEs.

This present study considered GMS with three dimensions for Manufacturing SMEs. This study focused on three dimensions, namely green purchasing and manufacturing, green process and waste disposal, and green supply chain, these are gathered from earlier studies (Wu and Lin, 2016, Chahal, Dangwal and Raina, 2014). Two dimensions are quite significant, namely green purchasing and manufacturing and green supply chain. SMEs urge to use biodegradable recyclable materials, use natural resources, avoid to produce waste matter, water and exhaust gas, reduce energy consumption, maintain green gas emission and low energy consumption and manager have higher commitment towards the greener productions. Use of bio_degradable recyclable material and use of natural product have high contribution, this means SMEs use environmental friendly raw materials as much as possible. Commitment from SMEs' managers for green productions is average contribution, further reduce energy consumption, avoid for producing waste matter, waste matters and exhaust gas, reduce energy consumption and greenhouse gas emission is also average contribution by SMEs. GMS has significant impact on customer development, employee development and social development. Further GMS has indirectly impact on financial development and growth of SME through the customer

development. This study reveals that SMEs induce their development through adopting environmentally friendly marketing strategy (Koner and Cohen, 2001; Wu and Lin, 2016). There is strong positive impact of GMS on customer and employee development and moderate impact on the social development. From overall perspective there is strong contribution of CMS and GMS on the development dimensions.

Implications

National and international competitions for SMEs creates challenging environment in Jaffna district. Measuring CMS is considered to manage these competitive pressure of SMEs. Our study findings have implications for theory development of SMEs and practice. GMD is considered one of today's pressing issues for manufacturing SMEs both globally and as nationally. GMO is a key approach in the comprehensive development of the organizations and important strategies for manufacturing SMEs. SMEs associate green concerns in the purchasing manufacturing and delivery and supply of goods. As Earlier researches (Chahal, Dangwal and Raina, 2014; Koner and Cohen, 2001) stressed this study establish firm must take an initiative to understand the role of green marketing strategy and its long run impact on the development and the society. The SMEs efforts in the CMS are established in the study but cost leadership can be successful by limited resource capacity of SMEs. GMS adoptive for SMEs, at the same time SMEs unable to adopt green process because unable to use of cleaner technology and urges customers to take create. In the case of recycle and reuse of unwanted industrial products and substances, government must create infrastructure to adopt green perspectives for SMEs.

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Micro and Small Scale Entrepreneurs in Estate Communities in Sri Lanka: Success Factors and Challenges

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Abstract

Households in the estate sector in Sri Lanka currently lag behind in almost all indicators of poverty. In that context, the National Poverty Alleviation Programme has supported micro and small enterprises in the estate sector too to uplift the living conditions of people living in estate communities. The objective of the paper is to explore the success factors and road blocks of these entrepreneurs. Findings of the study will help project designers and implementers in designing and implementing such projects and programmes productively. The paper is based on a survey carried out in December 2015 with 150 entrepreneurs selected randomly from Badulla District. Descriptive statistics such as frequencies and percentages were used for data analysis. Respondents have been supported by giving loans (96% of respondents), assets (33%), training (21%) and other services (6%). There were 219 activities and 62 percent were running successfully, 15 percent running with difficulties and 23 percent closed at the time of the study. The most common successful enterprises were cattle rearing, operating a retail shop, vegetable/green leaves cultivation and goat rearing. The highest number of respondents were of the view that the external assistance such as capital, grants, training and other services they received in need were behind their success followed by availability of good markets/good demand and personal traits. The majority of unsuccessful businesses were also poultry management, cattle rearing, vegetable cultivation and running a retail boutique. The main challenges were pest and disease attacks on livestock and agriculture, lack of market linkages and limitations in capital and space. Therefore, it is recommended to focus more on market linkages and credit facilities in designing such programmes and coordination between relevant local authorities is also a must in identifying remedies to pest and disease attacks and attention should be paid to introduce livelihood activities which are more suitable for limited space. Further, capacity development of entrepreneurs is also important as it is one of the main success factors and a holistic approach should be adopted when providing these services.

Keywords: estate communities; micro and small enterprises; success factors; challenges

INTRODUCTION

The estate sector in Sri Lanka traces a history of almost 150 years. The British started the industry in the 1800s with 'imported' indentured labour from South India and today's estate population are descendants of this labour that was brought into the country up until the 1940s. Isolation and limited mobility owing to a range of factors has marginalised the sector which has not reaped the full benefits of developments that other sectors of the country have enjoyed. According to the data of the

Department of Census and Statistics, households in the estate sector are currently among the poorest in the country and the sector still lags behind in almost all indicators of poverty.

Lack of formal employment has raised the population, mainly the poor, relying on informal activities such as self-employment and micro and small scale enterprises. The International Labour Organisation (2002) has also rationalised the need for the development of micro-enterprises for poverty alleviation and economic and social empowerment of the poor. Therefore, promoting micro and small enterprises (MSEs) is a strategy used in developing economies in poverty alleviation and economic and social empowerment of the poor as it represents a promising source of productive employment, especially for the lowest income groups. Mead and Liedholm (1998) also stated that micro and small enterprises as a major source of employment and income in many developing countries and detailed surveys in a number of countries suggest that as many as a quarter of all people of working age are engaged in MSE activities. Similarly, Tefera et al. (2013) also describe the sector as in bringing economic transition effectively using the skill and the talent of people without requesting high-level training, much capital and sophisticated technology and these MSEs are recognized as a real engine of economic growth and technological progress. This makes MSEs a major area of concern for government and non-governmental organizations with an objective of unemployment reduction, income generation and equitable income distribution, import substitution, innovation, poverty alleviation etc. Robert and Otero (1985) also stated that the capacity of micro and small enterprises to generate employment is particularly important in the light of the magnitude of these sectors in the majority of developing countries.

In that context, a MSE sector supported by many agencies including the state with the objective of improving the living standards of the poor can be identified in estate communities in Sri Lanka too. Therefore, it is important to explore the success factors and road blocks of these entrepreneurs managing a micro and small enterprise which is the objective of the paper and the findings would help project designers and implementers in designing and implementing such projects and programmes productively.

LITERATURE REVIEW

The Government of Sri Lanka recognises micro, small and medium enterprises as the backbone of the economy, as it accounts for more than 75 percent of the total number of enterprises, provides 45 percent of the employment and contributes to 52 percent of the Gross Domestic Production (Ministry of Industry and Commerce, Sri Lanka). Ahmed and Rashid (2014) stated that being the largest source

of employment after agriculture, micro and small enterprise sector in India enables many of men, women and children living in slums, upcoming towns, remote villages and isolated hamlets to use indigenous knowledge, cultural wisdom and entrepreneurial skills for the sustenance of their lives and livelihoods. Apart from contributing to national income, MSEs are instruments of inclusive growth, touching the lives of the most vulnerable and the most marginalized groups. For many families, it is the only source of livelihood. For others, it supplements family income. Thus, instead of taking a welfare approach this sector seeks to empower people to break the cycle of poverty and deprivation. It focuses on people's skills and energy. According to Tefera et al. (2013), in Ethiopia also MSEs are the second largest employment generating sector next to agriculture. Further, confirming that, ILO (2002) also views MSE sector as an essential catalyst for job creation, unemployment reduction and social progress at large since it takes the lion share of fast growing labour force in the world particularly 48 percent in North Africa, 51 percent in Latin America, 65 percent in Asia and 72 percent in Sub-Saharan African countries.

Mead and Liedholm (1998) found that employment in MSEs expands as a result of new enterprises springing up and through expansion of existing enterprises. Some projects aim to promote new business starts by addressing the constraints that make it difficult for people to establish new enterprises. Other projects provide assistance aimed at countering the forces that cause existing enterprises to fail while still others seek to help existing businesses improve their performance and expand.

There is no universal definition for micro and small enterprises. Different countries use different definitions and even within single countries definitions could vary from programme to programme. Often, it depends also on the sector of the business such as manufacturing, agriculture, services and retailing. In Sri Lanka, Ministry of Industry and Commerce has defined the MSEs in the National Policy Framework for Small Medium Enterprises (SME) Development. However, there is some agreement on the general characteristics of the micro and small enterprises practiced in the developing countries. According to the International Labour Organisation (2002), being very small scale, using low level of technology, having low access to credit, lacking managerial capacity, low level of productivity and income, tendency to operate in the informal sector, fewer linkages with modern economy and non-compliance with government registration procedures are certain features. OECD (2004) has identified small and medium scale enterprises as a very heterogeneous group. Ahmed and Rashid (2014) show that micro enterprises are generally artisan based. These enterprises use local skills and resources and sell their products locally. These enterprises involve lower levels of

investment in machinery and provide largely part-time employment. Small and medium enterprises use power-driven machines and possess some technological sophistication.

Similarly, Mead and Liedholm (1998) observe that the majority of MSEs consist of one person working alone. Self-employment is thus a central element in these economies. With most enterprises operating as one-person undertakings, it is not surprising that the largest employment category is working proprietors, a group that comprises more than half the MSE work force in most countries. When unpaid family members are added, the numbers reach three-fourths of the workers in most places. Further, they stated that it is a common perception that micro and small enterprises are primarily vendors and small traders. There is truth in this perception, since in several countries the majority of enterprises are engaged in commerce. It is important to recognise that in all countries, small manufacturing activities are also an important component of the MSE sector.

The dimensions and determinants of MSEs growth are vast and complex. According to Premaratne (2001) cited in Aheeyar (2007), factors influencing the enterprise performance are grouped into several categories, namely demographic (gender, marital status, etc.), human capital (whether entrepreneur has had training, level of education, etc.), family ties (whether the enterprise is a family business/traditional, whether family members work in the business, etc.) and enterprise related factors (amount of first loan, size of labour force, method of investment, receive of a grant, type of enterprise, source of micro-finance, etc.). Aheeyar (2007) says management related factors such as maintaining of accounts, managing separate funds for business and household expenses and registration of business also influence the success or failure of an enterprise. According to Johnson (1989), success of entrepreneurial businesses is limited by the availability and quality of five fundamental ingredients: (i) innovation, (ii) entrepreneurship, (iii) leadership, (iv) infrastructure and (v) risk financing.

Mead and Liedholm (1998) argue that most closures occur in the early years of a firm's existence. MSEs are particularly vulnerable during the initial years, when entrepreneurs are learning how to operate a new business. Further, Mead and Liedholm (1998) also cited that differences in the amount of the treatment invested, in access to capital, in ability, in risk aversion or due to females spending the business grants on household investments have an impact on the growth and success of enterprises.

In addition, the initial investment on the firm, the location and the sector in which the MSEs operate are instrumental in the growth of these enterprises. Resource endowment, capabilities and competitive advantages are major determinants of firm growth as per resource-based view since resources are the

basis for profitability and growth. MSEs that began operation with higher initial investment are more likely to grow than their counterparts that started operation with relatively smaller initial investment. Therefore, as the initial investment size of MSEs increases the probability of stepping forward from being survival MSEs increases (Tefera et al., 2013). In contrast, Mead and Liedholm (1998) state that firms that started the smallest, other factors held constant, were more likely to survive than their counterparts that started large scale.

Mead and Liedholm (1998) also cited that location also played a significant role in determining MSE's chances of survival and urban MSEs had an almost a quarter chance of surviving the year, holding all other factors constant, compared to their counterparts in other areas. Moreover, MSEs located in commercial districts were more likely to survive than those that operated out of the home. Proximity to growing markets would thus seem to be an important determinant of the prospects for an enterprise to survive.

Ahmed and Rashid (2014) found that MSEs suffer from a number of constraints and weaknesses. A predominant number of enterprises are in the unorganized sector. The sector is heterogeneous and majority of units suffer from low technology base, resulting in low productivity and poor quality of products. The units being small in size also have poor access to equity and credit. In most cases, capital comes from savings and loans from friends and relatives rather than through banking systems. This problem is particularly acute for the lower end of micro industries. This sector continues to face a shortage of skilled manpower due to lack of affordability and poor managerial capabilities. Another major weakness is absence of marketing channels and brand building capacity (Ahmed and Rashid, 2014).

Consequently, workers engaged in the MSE sector (and these are often the most vulnerable and poor) have very little bargaining power and are exploited by middlemen, unit owners and big business houses (Ahmed and Rashid, 2014). They are unable to take up aggressive marketing like big players and they cannot find customers despite good quality and competent prices. In addition, the dispersed, unorganized nature of the industry also raises issues of quality, bulk production and inability of meeting big orders.

OECD (2004) shows that MSEs identify financing, especially medium to long-term finance, as their topmost obstacle to growth and investment. Further, MSE constraints in access to finance are described as follows; (i) MSEs are regarded by creditors and investors as high-risk borrowers due to insufficient assets and low capitalization, vulnerability to market fluctuations and high mortality rates.

(ii) Information asymmetry arising from MSEs' lack of accounting records, inadequate financial statements or business plans makes it difficult for creditors and investors to assess the creditworthiness of potential MSE proposals. (iii) High administrative/transaction costs of lending or investing small amounts do not make MSE financing a profitable business.

Begley and Boyd (1987) cited in Gladwin et al. (1989) show that there are fewer customers and sales due to the smaller population in an area, so that every customer is needed. The result is that businesses without the personal touch can fail faster than a similar other business would. The market potential for such firms is limited.

However, Mead and Liedholm (1998) observe that it is important to recognize that only a portion of MSE closures can be described as traditional 'business failures', where the firm was not financially or economically viable. Somewhat less than half of the MSE closures were in this category; lack of demand and shortage of working capital were the two most frequently mentioned underlying causes of these closures due to bad business conditions. For the others, approximately one quarter of the MSEs closed for personal reasons such as illness or retirement, while the remainder closed because the entrepreneur was able to move on to better options or because the government forced them to close. Further, more detailed, follow-up information from Kenya indicates that those who closed their business for demand reasons were more likely to start a new enterprise than those who closed because of a lack of working capital.

Therefore, OECD (2004) highlights that MSE development strategies should be country and context specific. Each country may have its own challenges, opportunities and priorities for change. In addition, resources available for implementation may also vary by country. Therefore, results achieved may also be different. Further, MSE development requires a crosscutting strategy (OECD, 2004). OECD (2004) also stated that the MSE development strategy has to be inclusive and may have a more holistic approach, involving measures for creating an enabling environment, public-private dialogue and business development services facilitation (business development services include training, consultancy and advisory services, marketing assistance, information, technology development and transfer and business linkage promotion).

Therefore, it is clear that micro and small enterprise sector contributes significantly to the socio-economic development of vulnerable communities and enable them achieve socio-economic equity. As such, MSE development emerges as a key instrument in poverty reduction efforts.

METHODOLOGY

The paper is based on a survey of 150 micro and small scale entrepreneurs selected randomly from Haliela, Passara and Soranathota Divisional Secretariat Divisions in Badulla District and multi-staged random sampling technique was used to identify respondents for the survey. Badulla district was selected purposively to represent the estate sector. Thereafter, estate population in the district was considered and according to the data of the Department of Census and Statistics, 21 percent of the total population in the Badulla district was in the estate sector. Next, the five divisional secretariat divisions of the district with the highest concentration of the estate population were selected. Thereafter, three divisional secretariat divisions were selected from those five selected divisional secretariat divisions based on the highest concentration of *Samurdhi* (National Poverty Alleviation Programme) livelihood development beneficiaries. At the next stage, ten *Grama Niladhari* divisions were selected from the identified divisional secretariat divisions based on the highest concentration of beneficiaries. Thereafter, databases maintained by the *Samurdhi* programme were used to prepare the sample frame. At the same time, beneficiaries who had obtained assistance from the programme during 2010-2011 were considered. The reasons for selecting 2010-2011 as the reference period were (a) providing at least three years for an entrepreneur to get established in their respective industry, (b) of the twenty years, the highest amount of funds for livelihood development had been allocated in 2011 and (c) two successive years to prepare the sample frame to make sure the availability of adequate numbers of beneficiaries to perform random selection. Thereafter, 150 entrepreneurs were selected randomly from the sample frame to administer the questionnaire.

Analysing the critical review of literature, a structured questionnaire was prepared to gather data from selected respondents and the questionnaire consisted of coded, open and multiple response questions. The purpose and the objectives of the study were explained to respondents prior to administering the pre-tested questionnaire and their consent was sought to take part in the study. Interviews were conducted as face to face interaction with the respondents and the interviews were carried out by the author and three research assistants in December 2015. Data were tabulated using the software package, SPSS and descriptive statistics such as frequencies and percentages were used for data analysis.

Ethnicity and the religion of the majority in the sample were Tamil (83%) and Hinduism (81%) respectively and 57 percent were men and 43 percent were women. The majority (79%) concentrated in the age group 30-59 years. A considerable number of senior citizens (18%) and a limited number of youth (4%) were also in the sample. Further, 31 percent of the respondents were from *Samurdhi*

recipient families and the others were from low income families. Nearly half of them (42%) has studied up to grade six to ten followed by grade one to five (38%) and passed Ordinary Level (10%).

RESULTS AND DISCUSSION

The respondents of the survey have been supported by the livelihood development programme and 96, 33, 21 and six percent had been given loans, assets, training and other services respectively to improve their livelihood activities. There were 219 activities as 53 percent livestock management related, 19 percent trading/buying/selling/services related, 18 percent cultivation related and 10 percent industry/manufacturing/preparation related activities. It was found from the study that the insufficient family income as the main reason in the case of majority (87%) of activities to initiate it. At the time of the study, according to the perception of the respondent, nearly two thirds (62%) were running successfully, 15 percent were running with difficulties and 23 percent were closed.

Therefore, the objective of the paper of exploring the success factors and challenges of entrepreneurs was achieved based on the 136 activities operating successfully and 83 activities which were either running with difficulties or closed at the time of the study respectively.

Success Factors

According to the perception of the respondent, the most common successful enterprises were cattle rearing (for milk) with ≤ 5 cows, operating a retail shop, vegetable/green leaves cultivation under ≤ 1 acres, goat rearing with ≤ 5 goats, poultry (for meat) with > 10 chicken and goat rearing with > 5 goats (Table 1). It was observed that the majority of activities were managed by the respondent him/herself with the support of family members. A few entrepreneurs had used paid labour in their activities and two types of labour were identified as regular and hired on availability of work and of them the majority was hired on availability of work. Only three entrepreneurs had provided regular employment to one to three employees and eight entrepreneurs had hired labour depending on the availability of work.

Table 1: Successful Enterprises

Type of the Enterprise	No	%
Cattle rearing (for milk) with ≤ 5 cows	28	21
Operating a retail shop	23	17
Vegetable/green leaves cultivation under ≤ 1 acres	23	17
Goat rearing with ≤ 5 goats	15	11
Poultry (for meat) with > 10 chicken	9	7
Goat rearing with > 5 goats	9	7
Sewing garments on request	7	5
Carpentry work on request	3	2
Poultry (for meat) with ≤ 10 chicken	3	2
Cutting, sewing and selling garments	2	1
Operating a school cafeteria	2	1
Operating a motor garage	1	1
Preparing and selling of meal parcels	1	1
Poultry (layers)	1	1
Cattle rearing (for milk) with > 5 cows	1	1
Masonry work on request	1	1
Operating a studio	1	1
Operating a salon	1	1
Vegetable/betel leaves/hardware items wholesaler	1	1
Making and selling gold jewelry	1	1
Mixed livestock farm (Goat - 2 and Chicken - 5)	1	1
Mobile selling of vegetables	1	1
Mushroom cultivation	1	1
Total	136	100

Source: Field Survey, 2015

Next, the reasons for the success of these enterprises as perceived by the respondents were investigated and presented in Table 2. The highest number of respondents (37%) were of the view that the external assistance such as capital, grants, training and other services they received in need were behind their success followed by availability of good markets/good demand/good price/ stable buyers / stable orders (30%) and personal traits such as commitment/hard work/enthusiasm/trustworthiness/self-confidence (28%). Further, in analysing all the success factors mentioned by the entrepreneurs, they can be categorized into five different groups as presented below.

- (i) Personal traits - commitment/hard work/enthusiasm / trustworthiness / self-confidence, having good PR skills, past experience on the business
- (ii) Inputs/raw materials – external assistance in need, family support,
- (iii) Process of the activity - requirement of less labour/time, low cost of production, proper maintaining of livestock/cultivation/vehicles/machines
- (iv) Environment / infrastructure - suitable climate for cultivation/livestock

(v) Market - availability of good markets/ good demand/ good price/ stable buyers/ stable orders, no competitors, refraining from conducting business/transactions on credit, providing goods/services according to the demand, providing quality goods/services to the customers, providing goods/services on time

Table 2: Reasons for the Success of the Enterprises

Reasons for the Success of the Enterprise	No.	%
External assistance such as capital, training, grants and other services in need	50	37
Availability of good markets / good demand / good price / stable buyers / stable orders	42	30
Commitment / hard work / enthusiasm / trustworthiness / self confidence	38	28
Requirement of less labour/time	22	16
Proper maintaining of livestock / cultivation / vehicles / machines	14	10
Suitable climate for cultivation/livestock	14	10
Low cost of production	14	10
Past experience on the business	8	6
Providing quality goods/services to the customers	7	5
Not doing business/transactions on credit	5	4
Providing goods/services on time	2	1
Having good PR skills	2	1
Family support	1	1
Providing goods/services according to the demand	1	1
No competitors	1	1
Total	136	100

Multiple Responses

Source: Field Survey, 2015

Challenges

The nature of activities rated by the respondents as unsuccessful are presented in Table 3 and the majority were poultry management (20%), cattle rearing (18%), vegetable cultivation (16%) and running a retail boutique (10%). Similar to successful activities, entrepreneurs with difficulties also had used paid labour at a minimum level. Only one entrepreneur had one regular employee in the venture and another one had hired labour depend on the availability of work. None of the closed down activities had either regular or paid workers on the availability of work.

Table 3: Nature of the Livelihood Activities Running with Difficulties and Closed Down

Nature	Running with Difficulties		Closed Down		Total	
	No	%	No	%	No	%
Poultry (for meat) with >10 chicken	3	9	14	28	17	20
Cattle rearing (for milk) with ≤5 cows	9	27	6	12	15	18
Vegetable/green leaves cultivation under <1 acres	7	21	6	12	13	16
Running a retail boutique	2	6	6	12	8	10
Goat rearing with ≤5 goats	1	3	6	12	7	8
Poultry (for meat) with ≤10 chicken	3	9	3	6	6	7
Goat rearing with >5 goats	2	6	2	4	4	5
Mobile marketing (vegetables, fruits, grains, cloths, costume jewellery etc.)	1	3	2	4	3	4
Other activities	5	15	5	10	10	10
Total	33	100	50	100	83	100

Source: Field Survey, 2015

The challenges of livelihood activities identified by the respondents are presented in Table 4. Confirming the findings of empirical studies found in the literature, entrepreneurs in the estate sector in Sri Lanka also faces similar difficulties and challenges. Table 4 shows that the main difficulties identified by the entrepreneurs as pest and disease attacks on livestock and agriculture (30%), no proper price for the produce/no proper market/lack of demand/high competition/unstable market (24%), lack of investment to continue (22%) and no proper place / limited space to do the business/cultivation (17%).

Similar to the success factors, the difficulties, too, can be categorized under the same five groups.

- (i) Personal - ill health of the respondent or a family member, lack of time
- (ii) Inputs/raw materials - lack of investment to continue, lack of raw material / high cost of raw material, no proper place / limited space to carry out the business/cultivation
- (iii) Process of the activity - high cost of production
- (iv) Environment – pest and disease attacks on agricultural activities and livestock, climate change/natural disasters
- (v) Market - no stable price for the produce/no proper market / lack of demand / high competition/unstable market

Table 4: Difficulties of the Livelihood Activities

Difficulties	Running with Difficulties		Closed		Total	
	No.	%	No.	%	No	%
Pest and disease attacks on agricultural activities and livestock	9	27	16	32	25	30
No proper price for the produce/no proper market / lack of demand / high competition/unstable market	11	33	9	18	20	24
Lack of investment to continue	8	24	10	20	18	22
No proper place / limited space to do the business/cultivation	8	24	6	12	14	17
High cost of production	3	9	3	6	6	7
Ill health condition of the respondent or a family member	1	3	5	10	6	7
Lack of time	2	6	2	4	4	5
Climate change/natural disasters	-	-	4	8	4	5
Lack of raw material / high cost of raw material	1	3	2	4	3	4
Other	3	9	5	10	8	10
Total	33	100	50	100	83	100

Multiple Responses

Source: Field Survey, 2015

CONCLUSIONS AND RECOMMENDATIONS

According to the perception of respondents, the main success factors behind the livelihood activities were external assistance such as capital, grants, training and other services they received in need, availability of good markets/good demand and personal traits. The main barriers/challenges faced by the micro and small scale entrepreneurs in running their livelihood activities were pest and disease attacks, lack of market linkages and capital and lack of space.

Therefore, the recommendation is to focus on market linkages and credit facilities in designing programmes on supporting livelihood activities. Further, capacity development of entrepreneurs is also important as it is one of the main success factors. Therefore, training modules should focus more on development of personal traits and capacities. In addition, coordination between relevant local authorities is also a must in identifying remedies to pest and disease attacks on livestock and agriculture and attention should be paid to introduce livelihood activities which are more suitable for limited space as the space is a limiting factor in estates. Further, a holistic approach should be adopted when providing these services and providing only one service per entrepreneur should be avoided.

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Profiling Intrapreneurs to Develop Management Interventions:

Evidence from Sri Lanka

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Abstract

Intrapreneurship, defined as the entrepreneurial behaviour of employees in established firms, has received growing research and practitioner attention. Despite increased efforts to develop and promote intrapreneurial behaviour, little is known about characteristics differentiating high intrapreneurs from low intrapreneurs. This research attempts to understand if and how intrapreneurs differ based on their demographic characteristics.

Using intrapreneurship data collected from 329 middle level employees from Sri Lanka, we first carried out K-mean cluster analysis. The results suggest that the respondents belong to two significantly different ($p = 0.000$) clusters. Around 65% of our respondents belong to high intrapreneurship cluster while the remainder belong to low intrapreneurship cluster. We then carried cross tabulation analysis to derive demographic profiles for each cluster based on age, years of experience, industry, educational qualifications, and gender. The standardized residuals revealed that females are significantly higher (than expected frequency) in low intrapreneurship cluster and significantly lower in high intrapreneurship cluster.

Overall, gender reveals to be a significant differentiator between intrapreneurship clusters. Our findings contribute to theory by providing novel insights on demographic profiles related to intrapreneurship. From practitioners' perspective, it suggests that management interventions promoting intrapreneurial behaviour in organisations should specifically target females.

Keywords: Intrapreneur, Demographic profile, K-mean cluster analysis, Cross tabulation, management interventions

INTRODUCTION

Intrapreneurship, referred to as the entrepreneurial behaviour of individual employees within established firms (Pinchot III, 1985), has received growing scholarly and practitioner interest. Intrapreneurs recognise the opportunity for change, evaluate them and exploits them, with the belief that this exploitation of the new pathway will lead to organisational goal achievement (Felicio, et al., 2012). Therefore, it positively relates to individual employee level outcomes such as job performance (Ahmad, et al., 2012), feedback seeking, (De Jong, et al., 2011), and

organisational outcomes such as new products/services, new methods, new entry, and new organisation creation (Felicio et al., 2012). Well known intrapreneurial examples include Kelly Johnson, who was an aeronautical systems engineer at Lockheed Skunk Works – USA, developing Lockheed Martin-Engine. His contribution to jet engine industry, by putting his novel ideas into action, gave him immense recognition, and also improved organisational performance. Similarly, Ken Kutaragi (also known as the father of Play Station) who later became the CEO of Sony Computer Entertainment, first joined Sony as a fresh graduate. His novel thinking and proactiveness in identifying opportunities for solving problems, made him one of the most valuable employees at Sony. Therefore, intrapreneurship is a way of revitalizing and rejuvenating firms.

Despite the interest in promoting intrapreneurship in organisations, the research in intrapreneurship has paid limited attention to the need to develop customised interventions to promote intrapreneurship (e.g. Kuratko & Rao, 2012; Brunaker&Kurvinen, 2006). This knowledge gap is significant for two primary reasons. First, as mentioned earlier, intrapreneurship can result in a great array of individual and organisational benefits. Therefore, a detailed understanding of if and how the degree of intrapreneurship demonstrated by employees differ will have useful implications to theory and practice. Second, innovative companies (e.g. 3M and Google, as explained in the proceeding section) invest a large proportion of resources to foster a culture of intrapreneurism. Identifying if a particular employee group(s) require customised managerial interventions may assist better utilisation of such resource allocations.

Against this backdrop, our study focuses on understanding if employees can be profiled based on the degree of intrapreneurship demonstrated by them. Adopting a quantitative non-parametric approach, we analyse the data collected from 329 middle level employees in Sri Lanka. Our analysis suggests respondents can be categorised to two significantly different clusters based on the intrapreneurship demonstrated. Furthermore, females were found to have a significantly high level of presence in the low intrapreneurship cluster. Overall, our findings draw new insights to theory and practice.

The remainder of this paper is structured as follows: First the literature related to intrapreneurship, developing management interventions, and profiling for targeted interventions are revisited to understand and further establish the grounds for our study. Second the method of data collection and analysis is presented along with the key findings. Third, the implications to theory and practice are discussed along with directions for future research.

LITERATURE REVIEW

Intraprenurship (INT)

We define intraprenurship as the entrepreneurial behaviour of an individual or a group of people whom are passionately involved in entrepreneurial activities while residing inside the organisation (Pinchot III, 1985). Established large corporations often have access to resources and capable individuals. Such corporations encourage employees who are enthusiastic for entrepreneurship, by giving them time and freedom to implement and take leadership on their own ideas, and thereby promote intraprenurship (Pinchot III, 1985). The research suggests three behavioural approaches in intraprenurship namely, pursuit of entrepreneurial opportunity, new entry, and new organisation creation (Bosma, et al., 2012).

Since intrapreneurship is a school within entrepreneurship theory (Cunningham & Lischeron, 1991), we draw from the entrepreneurship literature to get an in-depth understanding of intrapreneurship. The behavioural approach to entrepreneurship (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Shane & Venkataraman, 2000) conceptualises entrepreneurship as a three-dimensional construct consisting of *innovativeness* (engage in and support new ideas, novelty, experimentation), *pro-activeness* (opportunity-seeking, forward-looking behaviour) and *risk-taking* (committing significant resources to ventures in uncertain environments). Accordingly, we conceptualise intrapreneurship as an individual behaviour within established firms, where the individual demonstrates innovativeness, pro-activeness and risk-taking behaviour.

While the similarity between entrepreneurship and intraprenurship is identified, these are conceptually different phenomena. Entrepreneurship is identified as creation of new resources or combining the resources in a new manner to create value and to capitalize on opportunities, identified in start-ups or small and medium enterprises (Shane & Venkataraman, 2000). Contrast to this, intrapreneurship refers to a behaviour of individuals whom are passionate on entrepreneurial effort while residing and executing it inside the established organisations (Pinchot III, 1985).

Intrapreneurial behaviour of employees indicates an organisation's ability to create new ideas, technologies, technological processes (Lumpkin & Dess, 1996), and creation and exploration of opportunities (Bruyat & Julien, 2001), leading to organisational value creation.

Intrapreneurship therefore leads to operational and market advantage, resistance against competitive forces (Brunaker&Kurvinen, 2006) and also talent retention (Kuratko & Rao, 2012). Overall, the literature suggests that entrepreneurial attitude and behaviours of an employee is a necessity for firm success in competition (Barringer&Bluedorn, 1999). It not only improves individual performance (Guth& Ginsberg, 1990) and but also contribute to organisational performance (Antoncic&Hisrich, 2001).

Management Interventions (MI) Fostering Intrapreneurship

Understanding the importance of intrapreneurship, organisations have created multiple programs, policies, and practices to encourage and promote intrapreneurship. For instance, 3M fosters intrapreneurship by providing moral and financial support to take risk and venture into new areas as well as recognition for individual innovation successes (3M Company, 2002). This has paved the way for many successes such as the introduction of light control films (by Andy Wong) and sticky notes (by Art Fry) (Bosmaet *al.*, 2013). Similarly, Google follows an entrepreneurial innovation model, in which the entire organisation fosters and supports the entrepreneurial behaviour of employees. Some of their salient features are the flat organisational structure, the '20 percent time' policy, where employees get 20 percent of their paid time to work on a project of their preference, an open development environment which makes knowledge sharing easier and generous rewards and recognition for successful employees (Copeland & Savoia, 2011). These characteristics make Google's work environment similar to that of a start-up company. The literature in general suggests that access to resources, autonomy, professional freedom, respect, and recognition, as factors encourage intrapreneurial behaviour.

However, the motivation literature suggests that every employee is different and thus gets motivated by different factors (Burton, 2012; Ganta, 2014). It therefore highlights the need for customised approach to encourage desirable employee behaviours. However, the intrapreneurship literature has paid little to no attention on developing customised interventions for intrapreneurship development. Considering the pivotal role management interventions can play in encouraging intrapreneurship, yet limited scholarly attention, we next focus on the need to develop customised management interventions.

Management interventions are management's actions to intervene and override prescribed policies or procedures for a legitimate purpose (Department of Finance & Management, 2015). This action is a necessity for dealing with non-recurring or non-standard

actions or events and handles inefficiently in the normal system (Department of Finance & Management, 2015). In the context of intrapreneurship, such interventions may go beyond generic approaches to fostering intrapreneurship to customised approaches identifying and encouraging those employees demonstrating low levels of intrapreneurship.

The literature in management interventions (e.g. Mikkelsen, et al., 2015) suggests that there are two approaches to interventions namely, soft and hard approaches. The soft approach, which is based on dialogue and suggestion, is generally identified to be better than hard approach, which is based on use of directives, monitoring, and threats of punishment, in the context of promoting intrapreneurship in particular. Such an approach may involve one-to-one discussions (to open up employee ideas and concerns), avoiding temporary fixes (and opt to training and development) and help building employee trust (for your leadership and care) (Augustine, 2013).

However, as mentioned earlier, the success of such interventions in organisational context depends on the management's ability to appropriately customise interventions to match the targeted employees. Therefore, profiling employees, the area which we focus on next, is an essential first step in the process of developing management interventions.

Profiling employees for customised interventions

Profiling is primarily used in market research to identify market segments (Diamantopoulos, et al., 2003). It provides a detailed picture of typical members of a segment (Lötter, et al., 2012) and thereby assist development of customised marketing campaigns. The literature suggests that the same can be effectively used in managing employees (Anand & Sharma, 2015). For instance, profiling and clustering employee based on their demographic characteristics and then developing targeted management interventions for each of the group are found to not only improve employee performance, feeling of containment, and job satisfaction, but also improve organisational performance and goal achievement (Anand & Sharma, 2015).

Despite increase in the use of demographic profiling to develop managerial interventions (Diamantopoulos et al., 2003), no known attempt has been made to profile employees based on the level of intrapreneurship, in Sri Lankan context in particular. Hence, our attempt to profiling intrapreneurial employees will assist organisations in fostering intrapreneurship in respective organisations.

METHODOLOGY

Sample and data collection

This research attempts to explain on the differentiation intrapreneurs present, based on their demographic characteristics. Considering this explanatory nature, we adopted a quantitative approach in this study (Muijs, 2004).

Demonstrating intrapreneurship requires some level of autonomy and resources (Kuratko et al, 2005), therefore we focused on the intrapreneurial behaviour of middle level employees. Since intrapreneurship takes place in large-scale organisations, the respondents were selected from Sri Lankan business organisations with over 100 employees and also have multiple branches and Strategic Business Units (SBU). Data were gathered from forty (40) different business organisations representing apparel, ICT, banking, cargo, hospitality, and automobile industries.

Data collection was carried out using a mail based self-administered survey questionnaire. The sampling technique used is convenience sampling; this is a non-probability sampling which involves collection of data from members of the population who are conveniently available (Sekaran & Bougie, 2010). The middle level managers were first contacted to get their informed consent to take part in our survey. Those who consented to participate received the questionnaire along with a reply paid envelop. Each response was received by us in a sealed envelope.

Measurements

Intrapreneurship: intrapreneurship was measured using the three-dimensional (innovation, risk taking, and pro-activeness) scale developed by Stull (2005), which has been validated in multiple subsequent studies (e.g. Ahmed, Ali & Ramzan, 2014; Valsania, *et al.*, 2014). Each dimension consists of five question items, measured on a five-point Likert scale ranging from 'Strongly agree' to 'Strongly disagree'. For example, risk taking dimension included items such as "*I engage in activities at work that could turn out wrong*", innovation items included "*I develop new processes, services or products*", and proactiveness items included "*I anticipate future problems, needs, or changes*". Subsequent analysis of validity and reliability using content validity, discriminant validity and composite reliability (CR) showed that while the measurement achieved content and discriminant validity, CR was 0.78 which fulfilled the reliability requirement as well (Hair et al., 2010).

Demographic data: Demographic data and the sub categories were identified by the previous studies done on demographics of employees (Lötter, et al., 2012; Anand & Sharma, 2015) and categories used in national surveys in Sri Lanka (e.g. Department of Census and Statistics Sri Lanka, 2015) targeted at the workforce. This included work experience, age, gender, highest education qualification, and marital status.

ANALYSIS

Sample statistics and initial analysis

From the 405 who consented to participate, we received 329 valid responses (81% response rate). IBM SPSS 20.0 software was used for the initial analysis of the data. Since missing data was less than 0.7%, those were imputed using Expectation maximisation (EM) method which gives reasonably consistent estimate to variables (Hair et al., 2010). Outliers were analysed using box plots (Hair et al., 2010), and found that there are no consistent outliers. Furthermore, having extreme points are normal in social science research and therefore none of the outlier responses were deleted.

The initial descriptive analysis presented in Table 1 reveals that closer to 70% of the participants are Male. Over 75% of the participants are below 31 years old. Over 60% of the participants have a degree or a postgraduate qualification.

Table 1: Demographic data

Characteristics of the sample		Percentage
Gender	Male	69.5%
	Female	30.5%
Age	20-25 Years	21.4%
	26-30 Years	46.1%
	31-40 Years	24.1%
	Over 40 Years	7.8%
Marital Status	Married	45.3%
	Unmarried	54.7%
Highest educational qualification	A/L	11.1%
	Diploma	25.9%
	Bachelors	50.6%
	Masters	12.3%
	0 – 5 Years	69.5%

Number of years in the present job	6-10 Years	19.3%
	11-15 Years	4.9%
	Over 15 Years	6.2%

Clustering and profiling

We used *K-means cluster analysis* to identify the segments of employees in terms of the level of intrapreneurship demonstrated by respondents. We examined two to four cluster solutions with the aim of maximising the number of clusters while avoiding very small segments with less than 10 per cent of the total number of employees (Everitt, 1974; Chetthamrongchai & Davies, 2000). The two-cluster solution was found to be the most appropriate, which has divided our sample in to low intrapreneurship and high intrapreneurship. The analysis of variance (ANOVA) statistics revealed that respondents belong to two significantly different ($p = 0.000$) clusters.

We then used cross tabulation analysis to identify the differences in demographic characteristics between the two clusters. As indicated in Table 2, we used standardized residual analysis to identify how each demographic category within demographic item behaves with the low intrapreneurs and high intrapreneurs. The categories with standardised residual values beyond two standard deviations (i.e. < -1.96 or > 1.96) were identified to be significantly different (Haberman 1973).

Our analysis showed that 65% of the respondents belong to the high intrapreneurship cluster and 35% of the respondents belong to the low intrapreneurship cluster. In the cross tabulation while all other demographics was not presenting any significant differentiation, gender was showing a significant difference. In the low intrapreneurship cluster, gender distribution was 54% to 46% among males and females respectively. The standardised residual value of the female category is 2.4 (above 1.96) suggesting that females are significantly higher (than expected frequency) in low intrapreneurship cluster.

Table 2: Cross tabulation for total sample

Demographic Item	Category	Low Intrapreneurship		High Intrapreneurship	
		Average	Std. Res	Average	Std. Res
Experience in the current job	0-5 years	73.5%		65.3%	
	6-10 years	21.2%		22.2%	
	11-15 years	2.7%		4.6%	
	Over 15 years	2.7%		7.9%	
Age	20-25	23.9%		21.3%	
	26-30	40.7%		47.7%	
	31-40	31.9%		21.8%	
	Over 40	3.5%		9.3%	
Gender	Male	54.0%		74.1%	
	Female	46.0%	2.4**	25.9%	
Highest Education Qualification	A/L	15.9%		9.7%	
	Diploma	25.7%		23.6%	
	Bachelors	49.6%		52.3%	
	Masters	8.8%		14.4%	
Marital status	Married	38.1%		47.2%	
	Unmarried	61.9%		52.8%	

**Only those with standardised residual values beyond two standard deviations (i.e. < -1.96 or > 1.96) have been reported.

We then moved in to industry based analysis of these clusters to get further insight. Our participants fall in to 6 categories of industries, which are *banking and finance* (12.8%), *hospitality* (1.8%), *information and communication technology* (51.4%), *logistics* (7.6%), *manufacturing* (14.3%) and *other* (12.2%). When the cross tabulation was executed, there was no significant difference in intrapreneurship based on differing categories of experience, age or marital status. However, gender and highest education qualification provided significant difference for the low intrapreneurship cluster in the information and communication technology (ICT) industry. Similar to the full sample, females in ICT industry showed residual value of 2.29 (> 1.96) for low intrapreneurship suggesting that females are significantly higher (than expected frequency) in low intrapreneurship cluster.

Table 3: Cross tabulation for ICT industry gender category

Category	Low Intraprenurship		High Intraprenurship	
	Average	Std. Res	Average	Std. Res
Male	63.2%		84.8%	
Female	36.8%	2.29**	15.2%	

***Only those with standardised residual values beyond two standard deviations (i.e. < - 1.96 or >1.96) have been reported.*

When considering the highest education qualification in ICT industry, those who have A/L as the highest qualification showed residual value of 2.37 (> 1.96) for low intrapreneurship. This suggests that those who have A/L as the highest education qualification are significantly higher (than expected frequency) in low intrapreneurship cluster.

Table 4: Cross tabulation for ICT industry Highest Education Qualification category

Category	Low Intraprenurship		High Intraprenurship	
	Average	Std. Res	Average	Std. Res
A/L	10.5%	2.37**	0.9%	
Diploma	22.8%		22.3%	
Bachelors	59.6%		67.9%	
Masters	7.0%		8.9%	

***Only those with standardised residual values beyond two standard deviations (i.e. < - 1.96 or >1.96) have been reported.*

The overall analysis suggests that females and those who have A/L as highest education qualification are more significantly more likely to demonstrate low levels of intrapreneurial characteristics. Therefore, management interventions fostering intrapreneurship, in ICT industry in particular, should aim at improving intrapreneurial behaviour of respective clusters.

DISCUSSION

Despite growing research and practitioner interest in intrapreneurship, management interventions targeting intrapreneurship development are generic in nature. No known attempts have been made to develop customised interventions in Sri Lankan context in particular.

Hence this study attempts to cluster employees based on the level of intrapreneurship demonstrated and thereby identify any significant demographic characteristics differentiating high intrapreneurs from low intrapreneurs. Such identification will assist development of customised intervention focused on each cluster. Our findings contribute to theory and practice as explained below.

Implications to theory

Our study contributes to theory in three ways. First, it provides insights into demographic profiling of employees based on the level of intrapreneurship demonstrated by them. Our findings suggest that there are two significantly different clusters of intrapreneurial employees. While subsequent analysis did not find significant demographic characteristics differentiating high intrapreneurial employees, low intrapreneurial group reported significantly high levels of female presence. This stands in line with the previous studies done, where it was observed less active participation from women (Sullivan & Meek, 2012; Tsyganova & Shirokiva, 2010). Considering the growing interest and emerging knowledge around intrapreneurship as a conceptually distinct, practically significant phenomenon, our efforts in profiling intrapreneurs can facilitate advancement of intrapreneurship research.

Second, we use non-parametric testing to cluster and profile employees. Although such statistical techniques are used in multiple social science disciplines (e.g. Chetthamrongchai & Davies, 2000), it is rarely seen in human resource management context. Therefore, we make a methodological contribution to HRM literature by demonstrating how K-means cluster analysis and cross-tabulation techniques be used for clustering and profiling.

Third, being one of the early studies on intrapreneurship in Sri Lankan context, our study makes a substantial empirical contribution by highlighting that (a) intrapreneurship exists in Sri Lankan context, and (b) there is a significant difference in the level of intrapreneurship demonstrated by employees. Considering the male dominance in higher levels of management and in ICT industry in particular in Sri Lanka (Asian Development Bank, 2015; Jayaweera, et al., 2006), females seen to be less intrapreneurial may subsequently lead them to lower rewards and recognition and career progression opportunities compared to their male counterpart. That may threaten the employee diversity in ICT and other knowledge based jobs in the country. This can be identified as a reason to which some sectors have higher concentration of women than ICT (International Labour Office, 2016; Moss, 2004). Management interventions intended to promote intrapreneurship should pay careful attention to improve more female participation in intrapreneurial activities.

Implications to practice

For practitioners, this study provides several crucial implications for promoting and harnessing intrapreneurship. One, this study provided strong evidence on existence of intrapreneurship in Sri Lankan workforce. This demands the attention of practitioners to change current employee motivational mechanisms and also see the opportunity in retaining such intrapreneurial employees to compete in a global market place. The HRM techniques that used traditionally might need to be tailored to suit the demand of retaining entrepreneurial employees in the organisations and continuously motivating them.

Second implication to practitioners is, there needs to be a high level of management intervention and support for the female employees in order to develop their intrapreneurial skills and mind set. Since female employees tend to be in low intrapreneurial but they consist a significant portion of modern labour force especially in Sri Lanka, management needs to put more investment and methods of improvement for female workforce intrapreneurial spirit. Rewards and recognitions might need to be customized in order to change the current approach in motivational support and increase the equality in gender wise intrapreneurial effort.

Third, for ICT industry professional in Sri Lanka, there are two implications from this study results. First, it is important females (as per the main analysis) to have management intervention and in the same level for those employees whom are only qualified up to A/L to have management attention on efforts put to uplift the low intrapreneurship to high intrapreneurship. Practitioners must specially create educational and knowledge enhancement plans to improve their educational standards while continuously promoting innovativeness, risk taking and proactiveness in them.

Limitations and directions for future research

This study contains few limitations which needs to be highlighted. One is that our sampling method limits the generalizability of the findings of research. Elaborating on this, the study used forty-four (44) organisation with more than 100 employees, which are established at the Western province of Sri Lanka. Even though we can justify this by identifying the fact that the majority of economic activities are centred in Western province (Kelegama, 2016), generalizing needs to be done with necessary precautions. Second the study used the cross-sectional design and this limits the ability to capture the causal relationships (Guest 2011; Wright et al., 2005), even though this limitation was minimized by focusing on the retrospective data. Third, the study holds data from several industries which is having limitation

since findings of the study is influenced by the inherent nature and the competitiveness of each industry. This calls for industry-specific future research.

Future research can also consider the surveying in to other factors such as geographical or sociological characteristics as well. This can be further improved by having an industry specific profiling effort which will give clarity to the findings. Considering the benefits and stability captured in the longitudinal study design in testing causal relationships related to behaviours (Zahra &Covin, 1995), future researches needs to move in to longitudinal study for demographic profiling and intrapreneurship. Lastly, since research highlights on gender specific findings, future research on gender studies should re-look at gender specific intrapreneurial characteristics to gain clarity on methods of improvement for the intrapreneurial behaviour.

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Social Entrepreneurial Intention among Final Year Undergraduates of the Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka

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Abstract

The purpose of this research is to find out the social entrepreneurial intention of final year undergraduates of the Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka. Independent variables of the study are, namely; attitude towards becoming a social entrepreneur, subjective norms on becoming a social entrepreneur and perceived behavioural control on becoming a social entrepreneur whereas the dependent variable is social entrepreneurial intention. The conceptual model used in this research is based on the Theory of Planned Behaviour by Ajzen (1991). A total of 270 students from the final year undergraduates participated in this study by responding to a structured questionnaire prepared after a comprehensive literature review. Data was analyzed by performing correlation analysis and multivariate regression analysis upon ensuring reliability and validity using Statistical Package for the Social Sciences. Findings of the study indicate that there is a positive association between the independent variables and the dependent variable. Attitude towards becoming a social entrepreneur is being identified as the most influencing factor on the social entrepreneurial intention of final year undergraduates of the Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka. It is further identified that there is a positive impact on social entrepreneurial intention among final year management undergraduates in terms of attitude towards becoming a social entrepreneur, perceived behavioural control on becoming a social entrepreneur, and subjective norms on becoming a social entrepreneur. The study suggests strengthening the entrepreneurial culture in Sri Lanka particularly as an initial step in strengthening social entrepreneurial intention and thereby the social entrepreneurial behaviours.

Keywords: Social Entrepreneurship, Entrepreneurial Intention, Social Entrepreneurial Intention, Theory of Planned Behaviour

INTRODUCTION

Research Background

Entrepreneurship, today is receiving a continuous interest all over the world (Mair & Marti 2006). It is a driving factor of economic development of any developing and developed nation. Thus, it has been identified as the engine of the economic growth with many positive antecedents such as innovations, employment generation, poverty reduction and speeding up the structural changes of the economy (Drucker 1985; Kirchoff & Philips 1988; Schumpeter 1936).

Social entrepreneurship can be considered as one of the concurrent research fields in entrepreneurship and as a form of entrepreneurial activity, social entrepreneurship can be considered as beneficial to the whole society more in addressing burning social issues (Ernst 2011). Social Entrepreneurship concept is defined as incorporating a wide range of activities: enterprising people dedicated in creating differences; social purpose business ventures committed to adding for-profit motivations to the nonprofit sector; new forms of donor individuals supporting venture capital-like 'investment' portfolios; and nonprofit organizations that are reinventing themselves by drawing on lessons learned from the corporate platforms (Mair et al. 2006).

Furthermore, it targets unmet social needs by the government or other enterprises. As a result of that, the concept of social entrepreneurship has enhanced the interest among scholars and policy makers currently, as a part of sustainable entrepreneurship concept due to its contribution and importance to the economic development of a country.

Although, social entrepreneurship concept is a somewhat popular and an emerging concept in the world, social enterprises have not been sufficiently recognized in Sri Lanka yet. In addition, community believes that social and welfare facilities should be provided by the government, mostly free of charge, and hence, individual or private sector involvement is not required (Weerawardena & Mort 2006). As a result, the responsibility has passed over to the government to address the burning social issues in most of the countries. Thus, the state of social entrepreneurial behaviours, and also the intention of people to involve in such behaviour amidst these circumstances denote a stance of ambiguity, and have created a lot of research demands.

Meanwhile, considering the intention to behaviours, many a researchers have attempted to find out intention of individuals for different types of behaviours while entrepreneurial behaviours are quite prominent among them. However, there is a dearth of studies in both local and global contexts aimed at understanding the social entrepreneurial behaviours and social entrepreneurial intention (SEI), especially focusing on the student populations such as undergraduates who are deemed to be the immediate next generation to develop a country. Hence, the main focus of this research study is to contribute to the field of social entrepreneurship considering the intention towards social entrepreneurship or in other words; the SEI among the final year undergraduates of the Faculty of Management Studies and Commerce (FMSC), University of Sri Jayewardenepura (USJP) in Sri Lanka.

In addition, Ambat and Damita (2015, p. 112) claims that most literature agrees on entrepreneurial intention can be determined by using Theory of planned behaviour (TPB) by Ajzen (1991) and recent literature on Miranda et al. (2017, p. 114) too support this view. Thus, its original three predictors attitudes towards a behaviour, social norms and perceived behavioural control have been adopted in predicting SEI in this study.

Therefore, this study attempts to bridge the research gap in the field of SEI of final year undergraduates in FMSC, USJP, Sri Lanka and suggest a social entrepreneurial intention model in the Sri Lankan context.

Problem Statement

Accordingly, this research study addresses the broad research problem, which is, what is the level of SEI among final year undergraduates of the FMSC, USJP, Sri Lanka.

Objectives of the Study

Based on the broader research problem one general objective and three other specific objectives are formulated as depicted in the next section of the paper.

Consequently, the general objective of this research study is, to examine SEI of the final year undergraduates of FMSC, USJP.

Moreover, the specific objectives are as follows:

- To identify the association between attitude towards becoming a social entrepreneur (ATB-SE) and SEI among the final year undergraduates of FMSC, USJP.

- To identify the association between subjective norms on becoming a social entrepreneur (SN-SE) and SEI among the final year undergraduates of FMSC, USJP.
- To identify the association between perceived behavioural control on becoming a social entrepreneur (PBC-SE) and SEI among the final year undergraduates of FMSC, USJP.

Significance of the Study

Sri Lanka is considered as a developing country in South Asia. The country needs to overcome many challenges like lack of innovation, having a limited number of educated entrepreneurial citizens as well as lack of social entrepreneurs.

Further, Social Entrepreneurship has been considered as a generator of national prosperity and competitiveness. Therefore, global interest in developing social entrepreneurship and SEI seem to be rapidly growing.

A dynamic economy, despite people's obsession with their trials and tribulation of life leading to human suffering yet it is possible to find needed solutions which requires a larger number of keen young people who are able to become social entrepreneurs. Since, education is key to effect changes in young people's attitudes, skills and culture; this study selects its research context as final year undergraduates who are perceived to be received and receiving a sufficient amount of education. Given the scarcity of empirical evidence relating to social entrepreneurship as well as SEI among undergraduates, this study sets out to bridge this huge research gap of examining the level of SEI among final year undergraduates of FMSC, USJP, Sri Lanka. Thereby, this research may act as an informative tool in facilitating the global interest in developing social entrepreneurship in strengthening the national prosperity and competitiveness.

Further, evidence of the importance of psychological factors and SEI upon the career orientation of higher education students is under-researched in the Sri Lankan context. This study is an attempt to understand various aspects that refer to SEI of young students of higher education systems especially on the issues of becoming a social entrepreneur. Hence, this research could be important for undergraduates on deciding their future education and career path apropos of this new concept. They could identify their capabilities that will help them to understand their intention to become a social entrepreneur.

This study is also important for policy makers on development and implementation of policies related to the field of social entrepreneurship in the education sector, corporate sector et cetera in regional and national levels.

LITERATURE SURVEY

Social Entrepreneurship

Various researchers have defined the concept of entrepreneurship in different ways. Onuoha (2007) defines entrepreneurship as the practice of starting new organizations or revitalizing mature organizations, particularly new businesses generally in response to identified opportunities. Garavan (1994) explained the concept of entrepreneur as a person responsible for setting up a business or an enterprise. Social entrepreneurship is defined as a process of social value creation in which resources are combined in new ways to meet social needs, stimulate social change, or create new organizations to sustain social benefits (Fowler 2000). Social entrepreneurship is emerging as an innovative approach for dealing with complex social needs. Social entrepreneurs are persons who create and manage innovative entrepreneurial organizations addressing social issues (Prabhu 1999).

Entrepreneurial Intention

Entrepreneurial intention is defined as the interest of a person to start a new business which depends on two factors, desirability and practicability of an individual (Douglas & Shepherd 2014). Given that any behaviour is led by intention (Ajzen 1991), SEI could be considered as one approach to understand the social entrepreneurial process or particularly its behaviour. It further suggests that intentions could provide a significant direction towards selecting the type of business if individuals become entrepreneurs, in the case of the research; the social entrepreneurs.

Since, large kinds of researchers have different views on measuring the entrepreneurial intention, there are different models for this purpose. Some of them are; Shapero's Entrepreneurial Event Model (Shapero & Sokol 1982), TPB (Ajzen 1991), Entrepreneurial Attitude Orientation (EAO) model (Robinson *et al.* 1991), Intention Basic Model (Krueger & Carsrud 1993), Entrepreneurial Potential Model (Krueger & Brazeal 1994), Davidsson Intention Model (Davidsson 1995) etcetera.

By considering all the models available, the study is focused on the TPB, the model by Ajzen (1991) which is well developed and well validated in social psychology, to predict intention (Kruger et al. 2000, p. 413) given that social entrepreneurship is considered as a planned behaviour (Ernst 2011).

Theory of Planned Behaviour

TPB predicts an individual's intention to engage in a behaviour at a specific time and place. It posits that individual behaviour is driven by behaviour intentions, where behaviour intentions are a function of three determinants, namely; an individual's Attitudes towards behaviours, Social norms, and Perceived behavioural control (Ajzen 1991). There are many factors that affect SEI. However, Mair and Noboa (2006) argued that several unique aspects of the social entrepreneurial context require an adaptation of the traditional measures used in the TPB and entrepreneurial intentions models.

In many studies, it is proven that attitude: favorable evaluation on a respective behaviour (Ajzen 1991) has a crucial impact toward the SEI. In fact among other factors attitude plays the major role in explaining SEI (Mair & Marti 2006). Social norms is the perceived social pressure to engage or not to engage in a behaviour. Social norms are depending on social background (Yousaf et al. 2014) and the opinions of parents, partners, friends and important others might be influential in business entrepreneurial intention (Geldern et al. 2008). Perceived behavioural control refers to people's perceptions of their ability to perform a given behaviour. Perceived behavioural control was originally formulated as the perceived ease or difficulty in performing a particular behaviour by Ajzen (1991).

Empirical Findings

In a recent study of measuring academic entrepreneurship in Spain using the Ajzen model as the theoretical base, explains a variance of 56.8 percent of entrepreneurial intention, with 49 percent of entrepreneurial attitude and 34.2 percent of the PBC (Miranda et al. 2017). Buana (2016) indicates tendency of entrepreneurial intentions of the students being relatively unstable with poor correlations. Further, Linan and Chen (2009) explains 55.5 percent of the variance

in entrepreneurial intention from attitudes and PBC while social norm reflects a result as a non-predictor of intention due to cultural implications in different countries.

Gap

Accordingly, it is apparent that there are mixed results in even studies on entrepreneurial intention and dearth of literature on assessing the level of SEI and the factors determining SEI and their related associations. Thus, this study expects to fill the gap in literature by using the conceptual model presented in the following section.

METHODOLOGY

Conceptual Framework and Hypotheses

The researcher has adopted Ajzen's TPB model as the theoretical base in developing the conceptual framework (Figure 1: Conceptual Framework). After the comprehensive literature review carried on considering the objectives and the conceptual framework three hypotheses are formulated in compiling the study.

Hypotheses

- Hypothesis 1: There is an association between ATB-SE and SEI among the final year undergraduates of FMSC, USJP.
- Hypothesis 2: There is an association between SN-SE and SEI among the final year undergraduates of FMSC, USJP.
- Hypothesis 3: There is an association between PBC-SE and SEI among the final year undergraduates of FMSC, USJP.

Population and Sample

The study concerns both male and female final year undergraduates of FMSC, USJP, Sri Lanka as the population. According to the Student Statistic Report issued by the Administrative Office of the university, there are 1255 final year students in the academic year 2017. Stratified sampling method has been used for sampling. Sample size has been calculated as 23.4 percent from the total population including both males and females from each and every department in the FMSC. Accordingly 294 respondents were selected as the sample of this study. There were 270 responses and the non-response was 8.1 percent. The study used both primary data as well

as secondary data for the analysis purpose. Primary data collection was done by distributing a structured questionnaire prepared based on a comprehensive literature review and especially referring to the work of Linan and Chen (2009). As the secondary data collection, the study mainly focused on statistics available at the Administrative Office of USJP, previously published research articles etcetera.

Conceptual Framework

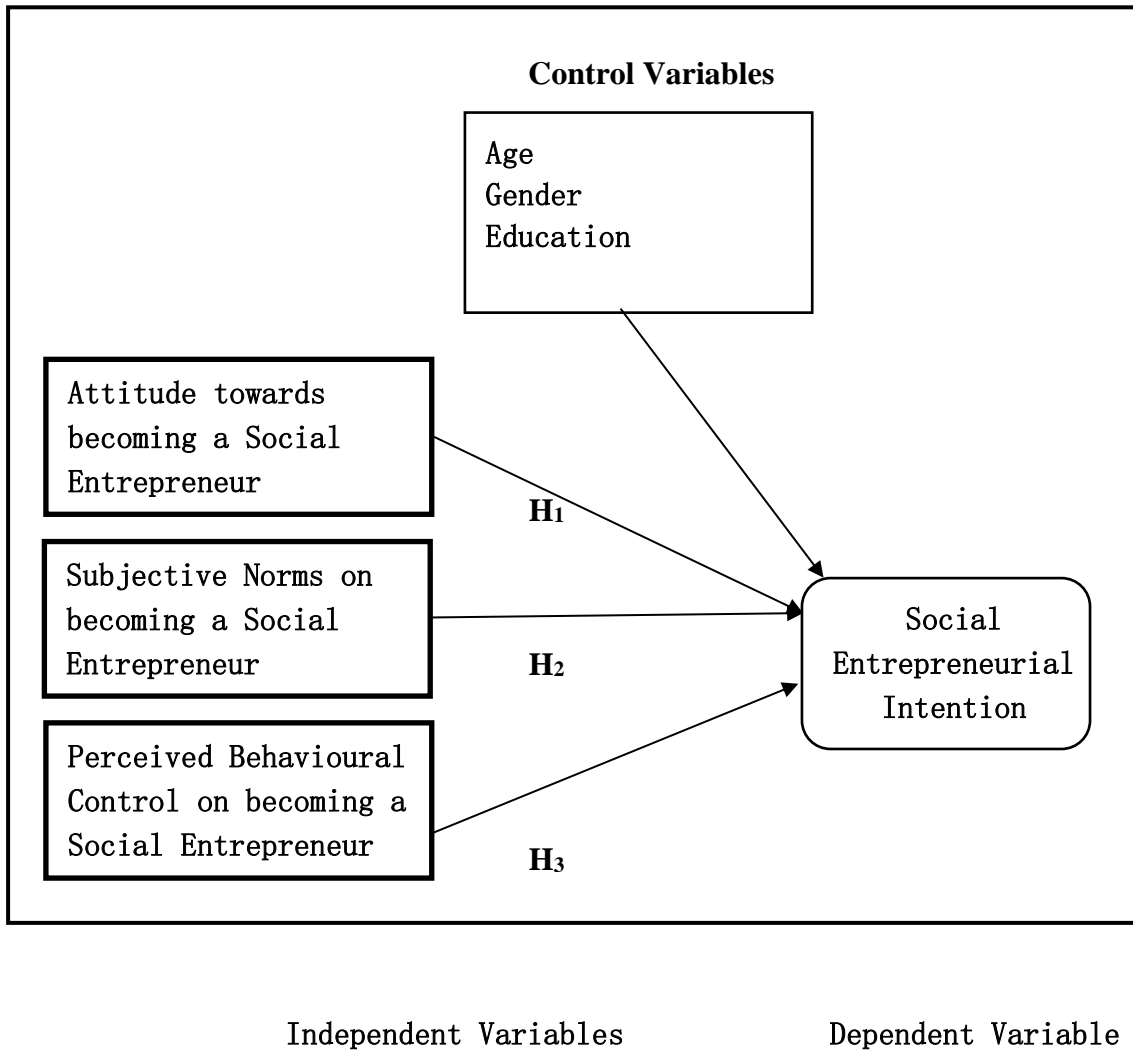


Figure 1: Conceptual Framework

DATA ANALYSIS

At the end of the data collection all the questionnaires were manually screened and incomplete questionnaires which were not considered suitable for analysis were removed and treated for missing values. Then the data was entered to Statistical Package of Social Sciences (SPSS) software to perform the analysis. Further to that, the reliability and validity of the data were ensured by conducting the Cronbach alpha test and factor analysis respectively.

Table 1 shows the main descriptive statistics related to the variables according to the 270 respondents.

Table 1: Descriptive Statistic for Main Four Variables

	N	Mean	Std. Deviation
<i>SEI</i>	270	4.05	1.301
<i>ATB-SE</i>	270	4.82	1.215
<i>SN-SE</i>	270	3.77	1.289
<i>PBC-SE</i>	270	4.40	1.040

Source: Survey data 2017

According to the mean score of the variables, they are all spread between 3.77- 4.82. Thus, it indicates all variables of the study have scored moderately. Mean value for SEI is 4.05, which suggests that, SEI is relatively neutral among final year undergraduates, FMSC, USJPSri Lanka and most of the respondents have no strong idea regarding becoming a social entrepreneur. That could be the reason for having a neutral mean value for the variable of SEI.

The lowest mean score of 3.77 is represented by the variable of SN-SE. First four questions are about how friends, closest relatives, teachers and persons are important to respondents to pursue the decision of becoming a social entrepreneur and the next four questions are on to what extent the thoughts of those parties are taken into consideration by the respondents. According to the scholar's view, social norms is considered as the most difficult variable to adjust.

Correlation Analysis

The correlation analysis was done in order to address the specific objectives of the study such as identifying the association between the independent variables and dependent variable.

Table 2: Correlation Analysis

Variables	SEI
ATB – SE	.561 ^{**}
SN- SE	.453 ^{**}
PBC-SE	.534 ^{**}

^{**} $p < .01$; ^{*} $p < .05$

Source: Survey data 2017

As per the Table 2 all the three types of correlations coefficients are significant and positive. ATB – SE denotes a coefficient value of 0.561, SN- SE 0.453 and PBC-SE of 0.534.

Multiple Regression Analysis

In addition to the above correlation analysis, the multiple regression analysis was performed in order to identify the impact of the variables of the study addressing the three hypotheses. The generated results are shown in Table 3.

The multiple regression model with three independent variables and three control variables generated significant results ($p < 0.01$) resulted in a coefficient of determination of 42.4 percent and an f value of 67.001. As shown in the Table 3, ATB-SE, SN-SE and PBC-SE have significant ($p < 0.01$) positive regression weights, indicating respondents who are having higher scales on these variables were expected to have higher SEI.

Based on the regression analysis results, ATB-SE can be identified as the most influencing variable on SEI of final year FMSC, USJP undergraduates in Sri Lanka, since it has the highest beta value of 0.375 to the SEI among other independent variables. Moreover, ATB-SE, SN-SE and PBC-SE together explain 42 percent of total variance of SEI.

Table 3: Multiple Regression Analysis

Dependent Variable:	Coefficient	T	VIF
SEI			
Intercept	0.027	0.093	
ATB-SE	0.375**	6.288	1.447
SN-SE	0.229**	4.371	1.255
PBC-SE	0.308**	4.244	1.570
Adjusted R²		0.424	
F		67.001**	
Sig		.000	
N		270	

** $p < .01$; * $p < .05$

Source: Survey Data 2017

Testing Hypothesis 1

- H₁: There is a significant association between ATB-SE and SEI among the final year undergraduates of FMSC, USJP.

According to the results of Pearson's correlation analysis, the correlation coefficient between ATB-SE and SEI is 0.561, whereas 0.375 according to the multiple regression analysis which are significant at 99 percent ($p < 0.01$). Accordingly, the data support the hypothesis that there is a significant positive association between ATB-SE and SEI.

Testing Hypothesis 2

- H₂: There is a significant association between SN-SE and SEI among the final year undergraduates of FMSC, USJP.

According to the results of Pearson's correlation analysis, the correlation coefficient between SN-SE and SEI is 0.453, whereas 0.229 according to the multiple regression analysis which are significant at 99 per cent ($p < 0.01$). Hence, significant positive association is identified.

Testing Hypothesis 3

- H₃: There is a significant association between PBC-SE and SEI among the final year undergraduates of FMSC, USJP.

According to the results of Pearson's correlation analysis, the correlation coefficient between PBC-SE and SEI is 0.534, whereas 0.308 according to the multiple regression analysis which are significant at 99 per cent ($p < 0.01$). Accordingly, the data support the hypothesis that there is a significant positive association between PBC-SE and SEI. Summary results are depicted in Table 4: Hypotheses Summary

Table 4: Hypotheses Summary

No.	Hypotheses	Correlation Analysis	Regression Analysis
H ₁	There is a significant association between ATB-SE and SEI among the final year undergraduates of FMSC, USJP.	Supported	Supported
H ₂	There is a significant association between SN-SE and SEI among the final year undergraduates of FMSC, USJP.	Supported	Supported
H ₃	There is a significant association between PBC-SE and SEI among the final year undergraduates of FMSC, USJP.	Supported	Supported

Sources: Compiled by the author

Discussions

The general objective of this research study is, to examine the individual SEI level of the final year undergraduates of the FMSC in USJP, Sri Lanka. The intention level of respondents was measured by using the descriptive test and mean value of the sample data set. The mean value of this study was 4.05. It denotes that there is mostly a neutral level of SEI of the final year undergraduates of FMSC in USJP. According to the findings of descriptive analysis of Achleitner, et al., (2007), they have also found that the SEI is at a low level in Germany.

The study results supported that associations are positive between the dependent variable (SEI) and the independent variables (ATB-SE, SN-SE, PBC-SE). According to the results of correlation analysis, there is a significant positive relationship between ATB-SE and SEI with 0.561 correlation coefficient and the regression analysis denote a significant positive associations of 0.375. Similar results can be found in studies of Mair and Marti (2006), Ernst (2011), Linan and Chen (2009) and Miranda et al. (2017).

Results of correlation analysis indicate significant positive relationship of 0.453 and regression analysis depicts a significant positive impact of 0.229 between SN-SE and SEI. Koe et al. (2014), Ernst (2011) and Rezai et al. (2016) support the empirical findings. Moreover, significant positive relationship between PBC and SEI with 0.534 is reported in correlation analysis whereas 0.308 impact in regression analysis. Similar findings are observed in the studies of Ernst (2011), Linan and Chen (2009) Kruger et al. (2000) and Koe et al. (2014) and Ajzen (1991).

CONCLUSION AND RECOMMENDATIONS

Based on the results obtained from the analysis of the study, SEI level among final year undergraduate of FMSC, USJP is at mostly a neutral level and ATB-SE accounts for the most significant association with SEI among the independent variables. Therefore, attitudes should be addressed at the first place when increasing SEI of final year undergraduates.

Meanwhile, Ernst (2011) leads a pressing question, how can the level of social entrepreneurship be accelerated? The social entrepreneurship can only grow if the quality and quantity of entrepreneurs grow as well as entrepreneurial thinking pattern also would grow. Hence, people get familiar with the entrepreneurial culture and get a proper awareness and understanding about the entrepreneurship concepts. After that social entrepreneurship can be promoted since it is useless promoting social entrepreneurship without having an entrepreneurial culture in the country.

According to the study findings the following recommendations are forwarded to improve SEI among final year undergraduates in FMSC in USJP. First of all, it is really very necessary to build up an entrepreneurial culture before focusing attention about social entrepreneurial culture among final year undergraduates of FMSC, USJP, thereby in the university system and later addressed to the country as a whole.

Referring to this stance, in order to make students aware about the social entrepreneurship, it can be included in the university curriculum as a subject or as a part of the entrepreneurship subjects. However, in the present context, students are studying social entrepreneurship as a part of the sustainable entrepreneurship in a few universities. But, the students have passively received its benefits and it is not insistent with for such an important topic. Also, social entrepreneurship can be incorporated into other social science subjects such as economics, marketing at a higher education level. Conducting forums, experience sharing sessions with successful social entrepreneurs within the universities will enhance the positive attitudes of students towards social entrepreneurship.

Government needs to give special attention for the social enterprises and also need to promote and encourage that type of businesses in the country. It is because people are thinking that social welfare conditions need to be fulfilled by the government and they are rejecting responsibilities relating to social matters. Furthermore, formulating strong policies, increasing investments and education in social entrepreneurship aspect, increasing the awareness by social entrepreneurial programs can be conducted by the government as a supportive service to social entrepreneurship. These will lead to develop a positive attitude towards social entrepreneurial intention among the undergraduates and the country as a whole.

Researcher suggest future research could be conducted to measure the Social Entrepreneurial Behaviour as well, as an extension to the proposed model of SEI in order to completely address and implement the recommendations forwarded.

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Sustainability through Eco-entrepreneurship: Analyzing the opportunities and challenges for micro and small-scale eco-enterprises in Sri Lanka

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Abstract

The 17 Sustainable Development Goals (SDGs) adopted at the UN Sustainable Development Summit in 2015 place a greater importance on Green Economy. These goals acknowledge that economic growth without social and environmental considerations will not contribute to sustainable development. Thus, the key aim for a transition to a Green Economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness. In this context, eco-entrepreneurship plays an important role. Green or 'eco' entrepreneurs are those consciously seeking business opportunities to provide, or support, profitable yet resource-efficient products and services. Therefore, eco-entrepreneurship lies at the nexus of innovation, environment, and entrepreneurship. This paper focuses on three case studies of eco-enterprises in Sri Lanka, the impact they are achieving and the challenges and opportunities they face. The eco-enterprises selected for the study are 1. Katana Upcycles from Negombo 2. Paalam Products from Jaffna and 3. Yaal fibre from Neerveli. These social enterprises achieve a mix of social, economic and environmental impacts through their businesses, including waste reduction, creating job opportunities and introducing eco-friendly alternatives to the market. The study also identifies that the eco-enterprises face numerous challenges to sustain their growth and scale up. Challenges include limited access to funds, lack of business and marketing skills and access to suitable markets. The study suggests that by providing networking opportunities and creating platforms for dialogue will support eco-enterprises to connect and build partnerships that will help in innovation, productivity enhancements, and unlocking new market opportunities.

Key words: Eco-entrepreneurship; innovation; eco-enterprises; small-scale; sustainable development

INTRODUCTION

The 17 Sustainable Development Goals (SDGs) adopted at the UN Sustainable Development Summit in 2015 place a greater importance on Green Economy. In particular, Goal 8 (Decent Work and Economic Growth); Goal 9 (Industry, Innovation, and Infrastructure); Goal 11 (Sustainable Cities and Communities); Goal 12 (Responsible Consumption and Production); Goal 13 (Climate Action) and Goal 17 (Partnerships to achieve the SDGs) recognize the importance of inclusive economic growth and development (United Nations, 2015). These

goals acknowledge that economic growth without social and environmental considerations will not contribute to sustainable development. Thus, the key aim for a transition to a Green Economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness.

Eco-entrepreneurship also known as, social and environmental entrepreneurship, could play an important role in achieving a Green Economy. Green or 'eco' entrepreneurs are those consciously seeking business opportunities to provide, or support, profitable yet resource-efficient and environmentally friendly products and services(Steurer, 2013). Therefore, eco-entrepreneurship lies at the nexus of innovation, environment, and entrepreneurship. Researchers have identified a list of characteristics as inherent to eco entrepreneurs(McEwen, 2013, Gibbs, 2009, Dean and McMullen, 2007). They act as entrepreneurs with a strong internal motivation related to environmental problems. They strive to address socio-environmental problems or needs consciously. This is at the core of their business activity. Their business activities have a net positive effect on the natural environment and at the same time aiming for financial sustainability.

Eco-enterprises are living proof that entrepreneurial drive can create innovative and novel solutions for delivering sustainable development at the grassroots level(Bymolt et al., 2015). While the value of eco-entrepreneurship is increasingly recognized, there is still very little data available on the overall impact of these enterprises and their contribution to sustainable development in Sri Lanka. This paper aims to bring together findings from three local case studies to help fill that gap by generating insights for policy and decision-makers on the role of eco-enterprises in achieving sustainable development and discuss enabling factors that can help them overcome barriers.

BACKGROUND

Over the last few decades, Sri Lanka has experienced many changes to its predominantly agriculture-based economy. Rapid urbanization and the pressure to provide economic opportunities for an increasing population has also given rise to new problems related to energy consumption, solid waste generation, water and air pollution and unsustainable lifestyles. Adding to these, in recent years, extreme weather events such as severe droughts and floods triggered by climate change have negatively impacted the country.

One of the most problematic environmental issues in the country is the waste problem. Managing waste has become a serious environmental concern, particularly in the urbanized areas of Sri Lanka with high population densities and the unavailability of suitable lands for waste disposal sites (Bandara, 2008). Open dumping in vacant lands and open burning still remains the most common waste disposal practices in the country. The failure to manage solid waste, particularly non-degradable waste such as plastics, metallized films and Styrofoam has resulted in widespread damage to the environment. Open dumping has been identified as a primary cause of vector borne diseases such as Dengue and Malaria in Sri Lanka (Sirisena and Noordeen, 2014, Environmental Foundation LTD., 2007).

Whilst, economic development is important, improving peoples' livelihoods, protecting the environment, and addressing climate change should be given equal attention. As such, waste management in developing countries need to adopt different strategies that focus on low-cost technology and community participation (Medina, 2005). Waste is a valuable resource in emerging economies such as Sri Lanka as virgin raw materials are generally expensive. Using waste as raw materials and its potential to create economic opportunities need careful attention. Industries in Sri Lanka generate a large volume of plastic waste in the form of packaging materials. Similarly, textile industries generate large volumes of textile wastes as offcuts (Park, 2017). A part of this is recycled or co-processed. However, a considerable volume is dumped in vacant lands and waterways or openly burnt. To reduce the negative environmental impacts, these wastes can be processed using machines that can be easily sourced to create excellent upcycled products thereby generating income opportunities for small entrepreneurs and social enterprises.

Findings from author's three-year Sri Lankan feasibility study (Jayasinghe, 2015) indicate that recycling waste to address these issues also offers opportunities for local economic development. Product design, prototyping and manufacturing are sparse due to the absence of affordable machinery, technological skills and knowledge of manufacturing processes and design protocols. As a result, the project, "Australia-Sri Lanka university partnerships to develop community-based waste recycling businesses" supported by DFAT Australia was initiated in 2015 to support local universities to set up waste upcycling training facilities. The University of Western Australia, together with the Universities of Moratuwa and Sri Jayewardenepura in the Western province of Sri Lanka, the University of Jaffna in the post-conflict Northern province, and the organization Waste for Life (WFL), developed a unique capacity building educational program that supports development of novel community-based

waste recycling and manufacturing businesses. The aim of the project was to support local communities to process waste into useful products – building materials, furniture, lifestyle products etc. Through the project two waste plastic processing and resource facilities were set up at the University of Moratuwa and at the University of Jaffna. With the help of the implantation partner, Waste for Life, three community-based eco-enterprises were successfully incubated namely; Yaal fibre, Katana upcycles and Paalam Products.

METHODOLOGY

There is a boom in community-based enterprises in Sri Lanka. It is crucial to report on the impact created by eco-enterprises and learn lessons from their successes, but also on the challenges they face and how they try to overcome those. For this study the above-mentioned eco-enterprises were taken as case studies. Data were collected through in-depth interviews, focus groups discussions and a simple questionnaire survey with all three eco-enterprises. Interviews were conducted in their workspaces.

A SWOT analysis (Table 1) was performed to identify the strengths, weaknesses, opportunities and threats. This was followed by an overall Triple Bottom Line (TBL) Impact assessment to identify the social, environmental and economic impacts created by these eco-enterprises. The Triple Bottom Line is a concept that was coined by John Elkington in the late 1990s (Elkington J., 1997). This sets out the range of values that enterprises should adopt to attain a more sustainable business: the social impact, environmental impact and economic impact. The economic impact is measured through indicators such as revenue, profit and employment. The environmental impact is calculated based on resource efficiency, waste management, energy consumption, emissions, recycling and water and land use. The social impact focusses on issues such as networking, social relations, fair trade, ethics, education and governance.

SWOT Analysis	
Strengths	Weaknesses
What advantages does your enterprise have?	What could you improve?
What do you do better than others?	What should you avoid?
What do people in your market see as your strengths?	What do people in your market likely to see as weaknesses?
What do you see as your strengths?	What do you see as your weaknesses?

What is your organization's Unique Selling Proposition?	
Opportunities	Threats
What good opportunities can you spot?	What obstacles do you face?
What interesting trends are you aware of?	What are your competitors doing?
What new technology are available?	Are opportunities available for your enterprise or products changing?
What new market opportunities are there?	Do you have financial debt or cash-flow problems?

Table 1: SWOT Analysis questions

CASE STUDIES: WASTE-TO-VALUE ECO-ENTERPRISES

One of the key aims of the aforementioned project has been to provide education and training in developing waste-based upcycling businesses and for participants to begin to create a real start-up by the end of their training. Three successful community projects have emerged which manufacture domestic products such as books, file folders, coasters, placemats, decorative sheets and panels. These community groups were trained in materials and products development. Subsequently as the community groups perfected the production processes and as the products were ready to enter the market, brand names and logos were developed for each business.

Case study 1: Yaal fibre - This is a group of women belongs to an Agriculture cooperative that processes Banana in Neerveli, Jaffna. The cooperative was using a simple machine, donated by a German NGO to extract fibre from discarded banana trees after harvest. The women were making baskets, hats and other small household items from banana fibre, but were struggling to find a reliable market in tourist-poor Jaffna. To turn around the prospects of the cooperative, a simple technology was introduced, which combined banana fibre with waste plastic to create different upcycled products such as books, placemats, coasters and clipboards. Since its inception in 2016, Yaal fibre has successfully developed a range of commercial products that have been well received across different markets resulting in several large orders from travel companies and gift shops. Waste plastics such as LDPE, HDPE, and PP packaging materials are collected from different industries in the area including bakery shops and a motorcycle spare parts store. The new eco-enterprise has provided an income source for around 14 women from nearby villages.

Case study 2: Katana Upcycles – This eco-enterprise was developed as the domestic product manufacturing arm of a recycling business run by a small entrepreneur in Katana, Negombo. He has provided employment for about 8 to 10 women from neighboring houses and villages. The women were preoccupied with their own financial situation and reported that was their main reason for working at Katana Upcycles. However, they see their involvement with the enterprise as being a valuable contribution to the environment. They convert plastic packaging materials, gunny bags, old sarees, curtains and metallized food wrappers into value added products. A range of commercial products made from discarded materials has been developed including file folders, wallets, purses, bags etc. Katana Upcycles run a weekly stall at Good Market; a market place for social and eco enterprises in Colombo which takes place every Saturday.

Case study 3: Paalam Products – This eco-enterprise consists entirely of women, supported by an existing charitable organization, the Paalam Project. Paalam Project works with war-affected communities in the Northern Province to support livelihood development and promote social responsibility in the local community. Currently 6 women, mostly single mothers from the area, work to upcycle fabric waste and plastics into products such as pencil cases, file covers, and folders. Products are sold both locally and abroad.

DISCUSSION

TBL Impacts

The case studies show that locally driven eco-enterprises can and are achieving TBL impacts and that scaling up or replicating them can contribute to greener and more inclusive growth. These three eco-enterprises address all three pillars of sustainability: economic, environmental and social, at different levels.

Addressing environmental issues is fundamental to reducing poverty and improving the quality of life. The environmental benefit of waste reduction and a cleaner environment is an indivisible benefit as all citizens will benefit from a cleaner environment. There is a direct positive impact on the environment by promoting the use of waste as a sustainable resource to generate income. These eco-enterprises help reduce the use of virgin materials needed for production, thereby conserving natural resources and energy while reducing air and water pollution.

One of the most significant social impact of the three eco-enterprises is improving livelihoods by providing training to women from low-income communities, helping them gain skills for life and improving their household incomes. Further, these eco-enterprises provide women a dignified place to work.

All three eco-enterprises have created a positive impact by encouraging large manufacturing industries that generate wastes to support eco-enterprises by providing clean waste as part of industries' CSR initiatives.

Environmental impacts	Social impacts	Economic impacts
Climate change mitigation by reduction of greenhouse gas emissions.	Increase of income and job opportunities for marginalised groups.	Encouragement of local business development.
Diverting waste from open dumps and reducing risk of open burning.	Education, training and skill development in local communities.	Reduction of community costs and increase of purchasing power.
Waste reduction through waste management, upcycling and development of value-added products.	Women empowerment and improvement of gender equality.	Creation of innovative value chains that are eco-friendly and inclusive.
Promotion of biodiversity and conservation.	Provision of basic services in local communities.	Support promotion of local crafts and tourism.
	Improve self-esteem, confidence and autonomy of members of the eco-enterprises.	

Table 2: TBL impacts created by the eco-enterprises

Identifying Challenges and Opportunities

Upcycled products made from discarded materials are gaining popularity in Sri Lanka, particularly among tourists (Jayasinghe and Baillie, 2017). The increasing amount of waste generated in Sri Lanka and the significant potential for resource recovery are the primary triggers for waste-to-value based business models. Simple products such as notebooks, document folders, pencil cases, bags, coasters and placemats made out of laminated textile and plastic materials have a good demand in local gift shops (Barefoot, Laksala, Podi Kade), eco-friendly market places (Good Market, the Colombo Flea Market) and in hotel gift shops. Upcycled products also has a demand as corporate gift items and conference gifts. Decorative panel boards and simple light fittings made from waste-based composite materials has a value as interior design element.

All three enterprises operate on a financially profitable basis, primarily because they procure the raw materials for their products free of cost. They convert waste into useful products such as artistic and utility products which is sold to a wider customer base at market prices. Since the enterprises incur cost mostly in operational expenses, their profitability depends on keeping these costs low and achieving competitive prices, scale and reach for the upcycled products. However, concerns regarding the fair distribution of revenue from the sale of items is an issue that needs attention. Further, the financial viability of these enterprises is heavily dependent on availability of good quality plastic packaging materials. Lack of good quality plastics in the Northern province is a huge challenge faced by both Yaal Fibre and Paalam Products.

One of the most critical challenges cited by enterprises in this study is business sustainability challenges. They encounter challenges because of customer perception and inadequate demand for recycled products. Customers attach higher value for products made from virgin raw materials, than from recycled items. This is specifically relevant when the price of upcycled products is at par or higher than normal products. The three eco-enterprises promote their products with an “eco-friendly” or a “green” tag to a niche market impacting scale.

Strengths (S)	Weaknesses (W)	Opportunities (O)	Threats (T)
Use of simple low-cost technology to process materials.	Gaps in business and marketing skills.	Availability of a wide spectrum of good quality waste in urban areas.	Limited access to finance for working capital or investments for scale up.
Partnerships and community engagement that provide access to various resources and networks.	Lack of TBL planning and monitoring.	Increasing interest on sustainable consumption and production.	Lack of sustainable market opportunities.
Capacities for innovation to address problems and needs in local communities.	Flexible working hours that often lead to members not committing to work efficiently.	Tourist-rich niche-market that values eco-friendly products.	Customer acceptance and willingness to pay for waste upcycled products.
	Lack of understanding and attention on branding and quality standards.		Lack of support from large industries to provide a continuous supply of clean waste.

Table 3: SWOT Analysis of the eco-enterprises

Way forward for eco-enterprises in Sri Lanka

To support the growth and long-term sustainability of eco-enterprises, the following recommendations were drawn from this study.

1. Recognition and promotion of eco-enterprises as a viable business model

Governments, donors and investors should give proper recognition to the importance of eco-enterprises in an emerging economy like Sri Lanka. Policy makers should develop policies conducive to the success of these grassroot enterprises as they help to drive local economic

development, address local social and environmental challenges and can inspire other entrepreneurs and start-ups to make steps in this direction. Government needs to create supportive bureaucratic processes and protect intellectual property to promote innovation and support new developments in eco-enterprises.

2. Create platforms for eco-entrepreneurs to share their stories

Eco-entrepreneur support innovation and job creation and should be invited to participate in policy development discussions. Creating platforms for discussions also provide opportunities for enterprises to connect and build new partnerships which is vital for innovation, product and process enhancements, and unlocking new market opportunities.

Partnerships make a real difference to eco-enterprises in pooling and accessing resources. Networks can facilitate joint learning and knowledge sharing. Policy makers should see themselves as indirect stakeholders and seek out the views of SMMEs to understand and address the specific barriers they face in each sector.

3. Provision of training in business development

Eco-enterprises require business development support to become financially sustainable while scaling up their business activities. A special attention should be given to women-led eco-enterprises which are essential contributors, especially in rural economies.

4. Facilitation of access to finance

Access to start-up and scale-up funds is one of the biggest obstacles identified by all three eco-enterprises. Financial institutions need to develop products and approaches that are responsive to micro and small enterprises' requirements.

5. Impact monitoring and evaluation

It is important for eco-enterprises to define and monitor the positive impacts they create, and to be able to communicate these impacts – both qualitatively and quantitatively. For example, how much waste is diverted from landfills, the number of jobs created, monthly/ annual income and profit needs to be recorded. Donors are willing to support eco-enterprises, particularly those that have a stated mission to improve the quality of life of local communities and address environmental pollution. Further, when TBL impacts are clearly visible, it is easy to materialize collaborations with large industries.

CONCLUSION

Waste upcycling not only addresses environmental pollution due to untreated waste, but also reduces consumption of virgin raw materials, and energy for production processes. In the process, it also creates job opportunities for low income communities. Considering the diversity and volume of waste produced in Sri Lanka, the simplicity of operations and availability of low-cost technology, waste-to-value eco-enterprises have a huge potential to expand in Sri Lanka. Eco-enterprises, however need to invest in creating awareness in source separation of waste, value addition, marketing upcycled products and brand positioning to firmly establish their business model.

Eco-enterprises, through waste-to-value innovations generate high value products, minimize waste disposal issues, and provide employment opportunities for local communities. The increasing amount of waste generated in Sri Lanka and the significant potential for resource recovery are the primary triggers for waste-to-value based business models. However, Sri Lanka needs more independent studies that quantifiably measure the positive impacts of eco-enterprises. Indicators such as number of jobs created for people from low income communities, amount of waste diverted from open dumps, amount of greenhouse gases and carbon emissions prevented need to be measured. These results then could be fed back into policy, particularly in reviewing the implementation of the Sustainable Development Goals (SDGs).

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The Relationship between Access to Finance and Growth of SMEs in the Northern Province of Sri Lanka: Financial Literacy as a Moderator

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Abstract

The direct effect of access to finance on the growth of Small and Medium Enterprises (SMEs) run by entrepreneurs is well studied. However, there is limited understanding on the difference in the rate of entrepreneurship growth across a nation. Further, the empirical findings relating to the financial literacy of entrepreneurs significantly differ across different geographic communities. Thus, the purpose of this study is to examine the impact of financial literacy on the access to finance and the business growth of the SME Sector in the Northern Province of Sri Lanka in the post-civil war context, as SMEs promote resilience of communities to recover from adversities such as civil war. The Indebtedness of Northern Province has suddenly increased, as there is a sharp growth is evident in the average debt per family in the post-civil war context. Thus, demonstrating the lack of proper financial literacy and the discipline required to be financially stable, which is a crucial benchmark for a successful business. According to the model of ambidextrous management in entrepreneurial growth companies, entrepreneurship is process where the entrepreneurial orientation turns into implementation and thereby leads to the business growth. However, the effect of access to finance to the entrepreneurs and the impact of financial literacy of the entrepreneur on this relationship is not examined. Thus, this study incorporates the effect of access to finance and the moderating effect of financial literacy to the existing model. It was evident from this study that, access to finance has a direct impact on the growth of the SMEs in the Northern Province of Sri Lanka. The results also reflect that the financial literacy and ability to make the financial decisions influence access to finance, resulting in business growth.

Keywords: Small and Medium size Enterprise (SME), Financial Literacy, and Entrepreneurial Growth

INTRODUCTION

SMEs and individual entrepreneurs continue to play critically important roles in the growth of developing economies (Baumol, 2004 as cited by Majumdar, 2008). Over a period of time, SME have gained vast importance as a major source of employment creation, income generation, poverty alleviation and regional development. Hence, this study focuses on studying the entrepreneurial growth of the SME sector in the Northern Province of Sri Lanka.

According to the National Human Resources and Employment Policy (NHREP, 2012), SMEs account for a large part of Sri Lanka's economy. Even though SMEs in Sri Lanka account for an overwhelming proportion of industrial establishments in Sri Lanka, their share of employment and value addition is much smaller. Further 'investment to generate employment' or 'investment per employee' is said to be the lower in small-scale industries compared to large entities (Small and Medium Enterprise Sector Development, 2002). According to the findings of international researchers, Sri Lanka is still in the half way stage in the SME sector (Joseph, 2014).

This study focuses particularly on the Northern Province of Sri Lanka as there are a fewer number of surveys and studies that have focused on this province, due to the ethnic conflict that prevailed until 2009. Further, SMEs promote resilience of communities to recover from adversities such as civil war. Focusing on the Labour Force Survey results of the Department of Census and Statistics, the Northern Province has a higher level of unemployment and lack of labour force participation when compared to other provinces. The average unemployment rate in Sri Lanka was 4.4% in 2016; however the unemployment rate in the Northern Province was 6.3%. According to the labour force survey of 2016, only around 34.6% of the employed population is engaged in self-employment. According to the Household Income and Expenses Survey (HIES), poverty in the districts of the Northern and Eastern provinces are comparatively higher than in the other provinces (HIES, 2013). As per the Poverty incidence (headcount index) of 2016, Northern Province is the highest with 7.7. Thus, it is vital to identify the determinants of growth of the SME sector particularly in the post-civil war context, in order to achieve a satisfactory level of employment opportunities and economic development.

According to the model of ambidextrous management in entrepreneurial growth companies (Moore, 1986; Bygrave, 1989), entrepreneurship is a process where entrepreneurial orientation turns into implementation and thereby leads to business growth. However, the effect of access to external finance and the financial literacy on this relationship is not examined. The purpose of this study is to identify the access to finance and the growth of SMEs in the Northern Province of Sri Lanka and the moderating effect of financial literacy on this relationship. The objectives of this study would be to analyse the growth of the SME sector in the Northern Province of Sri Lanka in the post-civil war context as SMEs promote resilience of communities. Further to examine the influence of access to finance on entrepreneurial growth and to examine

the moderating effect of financial literacy on the relationship between the access to finance and entrepreneurial growth.

Focusing on the significance of this study, one of the key challenges faced by Sri Lanka at present is to ensure post war growth by minimizing the regional growth disparities and by developing the living standard of all peoples. The Northern Province in particular, which is in process of slow recovery in the post 2009 era, after the end of a long period of civil war, needs to be paid disproportionately more attention in order to ensure that development across the country is evenly balanced. As such there is a high potential for the success of SMEs in Sri Lanka particularly in the Northern Province, the Government can create the right atmosphere for entrepreneurs to create new employment ventures and thereby improve the living standard of the Northern Province.

This paper proceeds as follows; the next section is the literature review relating to the study variables and will be followed by hypothesis development and the conceptual framework. The research methodology and the data analysis is presented in the next section and the final section is a discussion of the key findings, the theoretical implications and the managerial and social implications, this will be followed by the conclusion.

LITERATURE REVIEW

Entrepreneurship

Drucker (1985), as cited by Elenurm (2012), has explained that entrepreneurs are those who exploit the identified opportunities and induce changes. Further he also emphasized that innovation and risk taking are two key entrepreneurial challenges. In order to create economic growth in a country, an entrepreneur plays the role of innovator by inducing change and creating new opportunities. Some other definitions would be, a person who identifies opportunity and develops new business (Bygrave & Hofer, 1991 as cited by Sesen & Pruett, 2014) and a person who makes new combinations in creative destruction (Schumpeter, 1934 as cited by Sesen & Pruett, 2014). Parston (1998), as cited by Thompson (1999), defines the process of entrepreneurship as the managerial behaviour which continuously exploits opportunities to deliver better results.

The cultural values of the individual and the level of entrepreneurship is highly influenced by experience, education and religion (Hayton et al., 2002; Morrison, 2000 as cited by Altinay & Wang, 2011). Nooteboom (2002), as cited by Majumdar (2008), claimed that not only the personal characteristics of the entrepreneur determine the success or failure of the entity, but the result is also determined by the collaboration of these characteristics with contingency factors in the environment in which the business operates. Entrepreneurs play a role in achieving growth, as they accelerate the creation, dissemination and application of creative and innovate ideas (McDougall & Oviatt, 1997 as cited by Tseng, 2012). The creation and development of entrepreneurship results from the formation of entrepreneurial opportunities and utilization of entrepreneurial capacities. Therefore the role of entrepreneurship on the economic growth is influenced by the number of entrepreneurial opportunities and the level of entrepreneurial capacities (Tseng, 2012).

Small and Medium Enterprises

Small businesses are the players in the niche where they have the flexibility and close relationship with customers (Nooteboom, 2002; Van Kirk & Noonan, 1982 as cited by Mujumdar, 2008). Mulhern (1995), as cited by Hyz & Gikas (2014), emphasized that in today's economy a vital role is played by SMEs, which can be seen clearly since the highly developed economies are dominated by a network of small and medium-sized enterprises. Several studies have recognized the importance of SMEs as their performance is important in bring about social and economic growth by contributing to employment creation, income generation and developing both urban and rural areas (Hallberg, 2000; Olutunla, 2001; OECD 2004, Williams, 2006 as cited by Israel et al., 2014). Small entrepreneurial organizations and entrepreneurs play a crucial role in the growth of developing economies (Baumol, 2004 as cited by Majumdar, 2008). One of the key reasons for helping SMEs is that these businesses utilize the resources efficiently and thereby contribute to the pro-poor growth and employment generation as SMEs use more labour than capital (Fairoz et al., 2010).

Sri Lanka does not have a commonly accepted definition for SME. There are several definitions given by different authorities and institutes in order to offer benefits to this sector such as tax concessions and the promotion of innovation. According to World Bank criteria any enterprise having below 99 people can be termed as SME. The Industrial Development Board (IDB) identifies an SME as an institution whose capital investment in plant and machinery does not exceed Rs.4 million (US\$42,000) (Gamage, 2003).The Department of Census and Statistics

also determines an SME by using the number of employees, where the organizations with up to 149 employees are considered medium scale businesses. According to the Task Force for Small and Medium Enterprise Sector Development established in December 2002, an SME is defined as an entity with less than an investment of 50 Million and employs less than 30 employees. The paper published by the taskforce in 2002 illustrated that in Sri Lanka, despite the various reforms by the government and assistance by donor agencies, the SME sector is not very dynamic and is under developed and it also continued to state that the expansion of the SME is constrained by both personal and market factors. Further it is obvious that the numerous definitions of SMEs adopted by several institutions has led to a misunderstanding in identifying SMEs for a number of supportive measures (Gamage, 2003).

According to Fogel(1994), as cited by Mai& Gan (2007), many researchers have indicates the effect of different factors of entrepreneurial environments on entrepreneurial intention and thereby on SMEs. Socio economic factors, the credit availability, technical assistance, physical facilities, and information are some of the key infrastructure facilities required by the small business (Gartner, 1985 as cited by Mai& Gan, 2007).Several kind of social and other network required to enhance SMEs (Aldrich et al., 1989; Birley, 1996; Chu, 1996; Cromie et al., 1994; Greve, 1995; Ostgaard & Birley, 1996; Sadler & Chetty, 2000; Weick, 1991 as cited by Vijayakumar, 2013).Additionally, aspects such as, networks in urban areas, the access to financial resources, and the existence of universities for training and research are also found to be very significant in increasing the rate of new business creations (Pennings, 1982 as cited by Mai& Gan, 2007). Further, according to Gamage (2003), usage of outdated or inappropriate technology results in low productivity and quality of products, leading to higher expenses to the producer and a decrease in industry competitiveness.A main problem in the SME sector of Sri Lanka is the scarcity of capital due to lack of access to bank facilities,lack of information on bank procedures,long delays and inability to offer guarantees (Gamage, 2003).For the expansion of SME sector in Sri Lanka, inadequate market demand is also identified as a constraint (Abeyratne & Ranasinghe, 2004 as cited by Nishantha & Padmasiri, 2010).

Access to finance

According to Zhang et al. (2016), the access to external finance to SMEs varies essentially from larger companies, where only the private debt and equity markets are the options that SMEs have access to whereas larger companies have access to both private and public markets. Based on the studies of Hussain (2018), the most common finding in the existing research is

SMEs encounter external finance restrictions and the limited financial skills also negatively influence SMEs' in relation to the chances of survival, growth and innovation. Fraser et al. (2015), as cited by Hussain (2018), emphasis that an insufficiency of financial management skills is correlated with businesses' access to finance that in return adversely affects firms' ability to access optimal debt and equity that leads toward bankruptcy. A study by World Bank (2013), as cited by Bongomin et al. (2017), indicates that access to finance enhanced firm performance and growth by smoothing market entry, risk reduction, encouraging innovation and entrepreneurial activity particularly in developing economies.

With reference to the seminal work on small business finance, Berger and Udell (1998), as cited by Zhang (2018), conceptualise the supply of capital as a dynamic process that alters the given SMEs' needs and options, and also the degree of information opacity between firms and fund suppliers. Carpenter and Petersen (2002), as cited by Hussain (2018), indicates that, the financial possessions are a pre-requisite for all organizations to initiate, sustain and grow. According to Zhang (2018), not all SMEs that apply for external credit are fruitful (Fairlie and Robb, 2007; Levenson and Willard, 2000; Shen, 2002; Cowling et al., 2012). This happens for numerous reasons including lack of asset cover (Coco, 2000), poor information flows giving increase to moral hazard and adverse selection issues (Diamond, 1984; Myers, 1984; Myers and Majluf, 1984), non-feasible projects, poor management teams, and exogenous factors such as unfavourable economic conditions. According to Kwong et al. (2012), researches have suggested that banks impose their credit processes and criteria subjectively against female entrepreneurs (Fay and Williams, 1991, 1993; Orser and Foster, 1994; Carter et al., 2007; Amatucci and Sohl, 2004; Martin and Wright, 2005). According to Hussain (2018), several of studies were carried out to evaluate the "finance gap" related with SMEs which caused in findings as; to operate efficiently, SMEs require acceptable debt and equity finance, there exists an "equity gap" for SMEs (Brown and Lee, 2014), and they pay higher loan charges (Deakins and Hussain, 1994; Hussain and Matlay, 2007) and need greater collateral (Hussain et al., 2006; Storey, 1994).

Financial Literacy

According to Bongomin et al. (2017), financial literacy referred to as "ability to obtain, understand and evaluate the relevant information necessary to make financial decisions and choices with an awareness of the likely financial consequences" is crucial for access to financial services by SMEs in developing economies. The OECD INFE explains financial

literacy as, ‘A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.’ The ANZ Survey of Adult Financial Literacy in Australia (2003; 2005; 2008) adopted the revised UK Adult Financial Capability Framework (FSA 2006a) as cited by Gallery (2011), classified financial literacy into four key segments of numerical literacy and Standard literacy’, ‘financial understanding’, ‘financial competency’ and ‘financial responsibility’; with two broad levels of financial literacy of ‘basic requirement’ and ‘advanced competency’.

According to Schagen & Lines (1996), as cited by Gallery (2011), financial literacy has a diversity of definitions but it is commonly mentioned as “the ability to make informed judgements and to take effective decisions regarding the use and management of money” United Nations (2003), as cited by Bongomin et al. (2017), states that financial literacy, which is the capability to use knowledge and skills to manage financial resources, is a key element to financial success of SMEs in developing economies, especially as a tool for fighting poverty. Scholarly work shows that SMEs run by financial literate entrepreneurs have a higher chance of being more successful than those run by illiterate counterparts. According to (FSA 2006 a), as cited by Gallery (2011), it is reasoned that capability comprises broader concepts than simply knowledge and that financial capability consists of three interrelated elements: knowledge, skills and attitude.

Oseifuah (2010), as cited by Bongomin et al. (2017), suggests that entrepreneurs, irrespective of their age, regularly involved in decision-making activities regarding resource attaining, allocation and utilization and these activities always have financial significances and thus, to be effective, entrepreneurs must be financially literate. Worthington (2006), as cited by Gallery (2011), some researchers interpret financial literacy as a more general understanding of economics and how household decisions are affected by economic conditions and environments, whereas others maintain a more narrowly defined focus on basic money management tools such as budgeting, saving, investing and insurance (Hilgert, Hogarth & Beverly 2003; Mandell 2001).

Growth of Entrepreneurship

According to Panda (2000), entrepreneurial growth is an on-going progression of expansion and renovation in the areas of socio-economic effort, which is an individual’s reply to the environment. Business growth describes the size of the entity (Vijayakumar, 2013). However,

Majumdar (2008), emphasized that growth is not uniformly and consistently defined by small business organizations. According to Phillips & Kirchoff (1989) as cited by Vijayakumar (2013), the growth of SMEs is closely related to the total success and survival of the entity.

The growth of entrepreneurship can be measured based on the capacity utilization ratio, investment per employee, sales to investment ratio and employee satisfaction (Panda, 2000). “Employment, profit, value addition, turnover, total assets and market share are major parameters of growth suggested by theorists” (Majumdar, 2008). According to Wijewardana & Tibbits (1999), as cited by Nishantha (2011), sales can be used to measure growth, However Robson & Obeng (2008), as cited by Nishantha (2011), used the level of employment to the measure growth of the business. Further, as per Vijayakumar (2013), firm growth is not purely accidental, but is dependent on the mindful decision making and selections of the management.

Brush & Vanderwerf (1992), as cited by Vijayakumar (2013), advocate that entity growth is the suitable indicator for measuring the performance of surviving small businesses. This has been accepted by several other researchers as well, and the deviations in the revenue can also be used as a measure of business growth (Hoy et al., 1992; Venkatraman & Ramanujam, 1986; Weinzimmer et al., 1998 as cited by Vijayakumar, 2013). According to Puhakka (2007), the most widely used measures of growth are growth of sales and growth of employees, which should be evaluated over the period concerned, so that it will best reflect the value addition to customers and society.

HYPOTHESES AND THE CONCEPTUAL FRAMEWORK

Access to finance and the Entrepreneurial Growth of SMEs

According to Bongomin et al. (2017), access to finance and financial management are identified in numerous business studies as the most important factor in influencing the survival and growth of SMEs (IFC, 2010; Organization for Economic Cooperation and Development (OECD), 2006a, 2006b). Beck and Demirguc-Kunt (2006), as cited by Bongomin et al. (2017), claim that access to finance permits SMEs in developing economies to obtain productive investments to expand their businesses and to acquire the latest technologies, and thereby ensuring their competitiveness, and fostering innovation, macroeconomic resilience and GDP growth. Based on the studies of Hussain (2018), the most common finding in the existing research is SMEs encounter external finance restrictions and the limited financial skills also

negatively influence SMEs' in relation to the chances of survival, growth and innovation. Fraser et al. (2015), as cited by Hussain (2018), emphasis that an insufficiency of financial management skills is correlated with businesses' access to finance that in return adversely affects firms' ability to access optimal debt and equity that leads toward bankruptcy. Kevane and Wydick (2001), as cited by Bongomin et al. (2017), suggest that the provision of credit to SMEs boosts economic growth in the informal sector through encouraging increased capitalization of business, creating employment opportunities and sustainable income growth. This is reinforced by Aghion and Bolton (1997), as cited by Bongomin et al. (2017), who argue that more credit means further entrepreneurship, further firm formation and economic growth. Carpenter and Petersen (2002), as cited by Hussain (2018), indicates that, the financial possessions are a pre-requisite for all organizations to initiate, sustain and grow. According to Zhang (2018), current papers argue that "managerial capital" or business skills including financial literacy are main drivers of firm growth and a key factor of productivity (Bloom, Mahajan, McKenzie & Roberts, 2010; Bruhn, Karlan & Schoar, 2010).

Therefore the following hypothesis can be derived from the literature:

Hypothesis1: Access to finance positively influence growth of SMEs in the Northern Province of Sri Lanka.

Moderating effect of financial literacy

According to Cole and Fernando (2008), as cited by Bongomin et al. (2017), financial literacy is a vital determinant of access to finance. Further Bongomin et al. (2017), emphasised that, low levels of financial literacy may avoid the acceptance of more complicated financial products including insurance, as investor may be uncertain to buy a product whose utility they do not fully comprehend. According to Zhang (2018), prior research it proposes that lack of financial literacy is one of the reasons of inertia in financial decision-making. As per Bongomin et al. (2017), financial literacy allows managers and owners of SMEs in developing economies to make suitable financial decisions and selections on the complex financial products offered by the financial systems without being intimidated and the available evidence proves a strong association between financial literacy and entrepreneurs' success. According to Fatoki (2014), financial literacy helps to progress behaviours such as the avoidance of over-indebtedness and it enables SMEs to make better financial decisions and to understand and manage risk.

De Mel et al. (2012), as cited by Bongomin et al. (2017), claim that financial literacy through business skills attainment is a vital driver of SMEs' growth and a key factor of productivity. Bruhn and Zia (2011), as cited by Fatoki (2014), examined the impact of business and financial literacy on firm outcomes of young entrepreneurs where results indicate that entrepreneurs with higher levels of financial literacy demonstrates better business performance and sales. Njoroge and Gathungu (2013), as cited by Bongomin et al. (2017), individuals with financial literacy skills tend to make better financial decisions with fewer management mistakes, thus, sound financial management is critical to the survival and management of SMEs as financial literacy skills permits and trains SMEs owners so that they can evaluate financial products and make informed decisions.

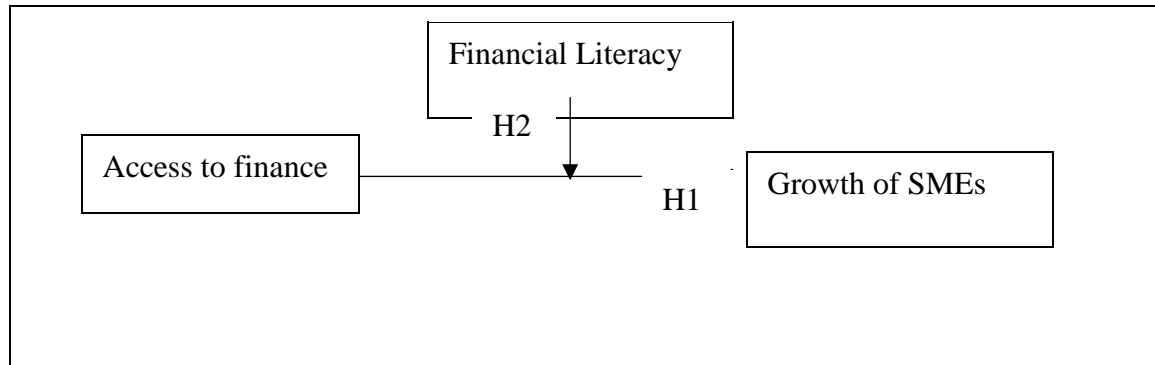
Andoh and Nunoo (2011), as cited by Fatoki (2014), find that the financial literacy of owners of SMEs is a very important factor in explaining utilization of financial services by SMEs.

Therefore the following hypothesis can be derived from the literature:

Hypothesis 2: Financial literacy moderates the relationship between access to finance and the growth of SMEs in the Northern Province of Sri Lanka.

In view of the above hypothesis the conceptual model has been developed.

Figure 1: Conceptual Framework of the Study



Source: Author

METHODOLOGY

Sample

This research is a quantitative study with a sample of 231 entrepreneurs of SME sector taken from the Northern Province of Sri Lanka. The respondents represent the SMEs of various industries located in the Northern Province of Sri Lanka. The economic activities are classified

using the latest version of the Sri Lanka Standard Industrial Classification (SLSIC) developed by the Department of Census and Statistics which is compliant with the International Standard Industrial Classification (ISIC Revision IV) developed by the United Nations Statistical Commission in 2008. Table 1 illustrates the criteria for classification.

Table 1: Identifying Small and Medium Enterprises (SMEs)

Major Economic Sector	SME Groups	Criteria (Number of Persons Engaged)
Industry and Construction	Small	5 to 24
	Medium	25 to 199
	Large	200 and above
Trade	Small	4 to 14
	Medium	15 to 34
	Large	35 and above
Services	Small	5 to 15
	Medium	16 to 74
	Large	75 and above

Source: Department of Census and Statistics, 2013/14.

The total number of persons engaged in the business during the survey period is considered for the research purpose which includes; permanent and temporary employees, hired workers, ownaccount workers, unpaid-family workers and active partners. Looking into the regional distribution of SMEs according to the Department of Census and Statistics, the sample is selected from the five districts of the Northern Province; Jaffna, Killinochchi, Mannar, Vavuniya, Mullaitivu. Respondents are selected on the basis of convenience and ease of access to information. The confidentiality of the information collected is assured to the participants.

The pilot survey was conducted with 30 respondents to test the reliability and face validity of the data collection. Various examinations were made in order to ensure the face validity of the sample data collection using the pilot survey. Initially the questionnaire was distributed to experts in the field in order to obtain their feedback to test the face validity. Based on the pilot survey the Cronbach alpha was calculated in SPSS to check the reliability, which is the extent to which the test emphasizes consistency of measurement. The Cronbach alpha is the estimate

of internal consistency associated with the scores of the scale. The pilot survey resulted in a Cronbach alpha greater than 0.5 for all the variables. Measurements are reliable to the degree to which they are repeatable which was ensured through the Cronbach alpha calculation.

Measures

The measurement scales used by Bongomin et al. (2017), were obtained for the measurement of access to finance, financial literacy and growth of business. All items are scored on a five-point

Likert scale anchored with 'strongly disagree' (1) to 'strongly agree' (5).

DATA ANALYSIS AND RESULTS

The data collected was analysed through a structural equation modelling (SEM) technique using SPSS and AMOS packages. According to Hair et al. (2006), SEM is a method where the dependent variable's relationships are separately identified, which gives the most suitable and efficient estimation technique for the sequence of separate multiple regression equations. As the initial step, the data collected was checked for accuracy using frequency analysis and the missing values were identified. The methods to deal with missing data can be, to simply delete any cases with missing values on any variable in the analysis or to substitute the missing value. According to Hair et al. (2006), if the missing values are under 10% of the total sample, any imputation method can be applied where, mean substitution and regression imputation are two imputation techniques that could be used to compute the replacement value. According to Roth (1994), the normally used missing data handling technique is, where the missing data points are substituted by that variable's mean. Since in this study only a few cases representing less than 3% were missing, the cases have been replaced with the mean value of that indicator.

According to Hair et al. (2006), outliers are the observations with distinct differences to other observations. Further Hair et al. (2006), also emphasised that, boxplot analysis, which reflects the data distribution of variables, will highlight the outliers and extreme values by symbols outside the whiskers. Accordingly in this study, outliers were identified through boxplot graph. After identifying the outliers based on the graph, the z-values for each value of the variables were computed and using a cut off value of 3, only 11 cases out of 231 responses were identified as outliers and deleted. Therefore, after treating for missing values and checking for outliers, 220 responses were considered for the final data analysis. This sample size sounds

adequate for the study based on the justification of Hair et al. (2006), where it is specified that a, minimum sample size should be 100 for models containing five or fewer constructs or variables and thus, the conceptual frame work of this study contains only three variables.

The study specially focuses on the Northern Province of Sri Lanka, where the respondents were selected from the five districts. The total respondents were 220 SME entrepreneurs, where 139 were selected from Jaffna amounting to 63.2% of the total sample, 36 respondents were from Vavuniya, 29 respondents from Killinochchi, 4 respondents from Mullaitivu and 12 respondents from Mannar. Looking into the sector classification, the SMEs represent three sectors, namely, Industry, Service and Trade. Out of the total sample collected 138 responses were from the Trade sector business representing 62.7%, 44 represent the Industrial sector and 38 represent the Service sector.

Table 2, reflects the mean, standard deviation and variance of the study variables.

Table 2: Descriptive statistics of the variable

	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
Financial Literacy	3.7601	.50943	.260	-.874	.164	1.136	.327
Access to finance	3.8259	.51410	.264	-.859	.164	1.097	.327
Business growth	3.6395	.47564	.226	-.850	.164	.962	.327

Source: Survey data

Most of the statistical tests assume that there is an equal population variance and therefore, the Levene test has to be performed if there are two or more groups in the population (Gastwirth, Gel, & Miao, 2009). As the respondents for this study are from three different sectors, the Levine's test was conducted to ensure that there is no significant differences in measuring the study variables within and among the groups. The results reported that there are no significant variations among groups and therefore responses were considered as a whole for analysis.

This study followed a two-step SEM process. According to Hair et al. (2006), in a two-step process, first the fit and the validity of the proposed measurement model is obtained and then the structural theory is tested. Further, the authors mention that, distinct testing of the measurement model through a two-step approach is vital because a valid structural theory cannot be shown with bad measures (Hair et al., 2006).

Measurement model

Focusing on the measurement model of financial literacy, the following findings were identified. Even though the pilot test was conducted and the results were verified, during the analysis of the final sample collected it was observed that certain questions had not clearly understood by the respondents. As these indicators were not significant in measuring the variable, they have been dropped and the model has been refined with six indicators. The model fit was verified for a refined measurement model where the CMIN/DF is 5.189 and the Goodness of Fit Indicator (GFI) is 0.938. In relation to access to finance, the measurement model was tested by AMOS and based on the output, the indicators having less than 0.45 standardized regression weights were deleted from the model to increase the model fit. Tests were done to verify the refined measurement model with six indicators, where the CMIN/DF is 3.040 and the GFI is 0.958. In relation to business growth, the measurement model was tested by AMOS and based on the output, the indicators having less than 0.45 standardized regression weights were deleted from the model to increase the model fit. Tests were done to verify the refined measurement model where, the CMIN/DF is 3.872 and the GFI is 0.935.

Based on the refined measurement models for individual variables, the complete measurement model was developed and tested where, the CMIN/DF is 5.105 and the GFI is 0.739. According to Benter & Chou (1987), in order to produce a practical set of results, the SEM programs need a satisfactory number of known correlations or covariance as inputs. That has also been verified in the refined model. Focusing on the output reported by AMOS in relation to the refined complete measurement model, the results indicated a good fit of the measurement model. The results of absolute indices are; GFI – 0.739, RMSEA – 0.153. The incremental and parsimony indices are; NFI – 0.470, TLI – 0.422, CFI – 0.507 and AGFI – 0.656.

Structural Model

Based on the refined model, the hypotheses were tested for the direct effect and the interaction effect. Focusing on the direct effect of the study, it was proven that there is a strong significant relationship between access to finance and entrepreneurial growth of the firm. The value of CMIN/DF is 4.882 and the GFI is 0.867. The hypothesis for the direct effect was proven significant where $p = 0.000$, which clearly indicates that access to finance significantly influence the growth of the SMEs. The path correlation between the two variables is 0.80. Focusing on the output reported by AMOS in relation to the hypothesis for direct effect, the results indicated a good fit structural model. The results of absolute indices are; GFI – 0.867, RMSEA – 0.133. The incremental and parsimony indices are; NFI – 0.667, TLI – 0.629, CFI – 0.710 and AGFI – 0.795.

Therefore the output clearly indicate that hypothesis one is proven in the study.

Focusing on the interaction effect, based on the test it is evident that financial literacy significantly moderates the relationship between access to finance and growth of the entity. The hypothesis for the interaction effect, for the moderator, financial literacy was proven significant where $p = 0.016$, which clearly indicates that financial literacy significantly influence the relationship between access to finance and revenue growth of the SMEs. The path correlation between the two variables is 0.58.

DISCUSSION

The civil war in the Northern Province created a causality list of well over 100,000 killed and many more injured, mentally affected, displaced both internally and overseas and the total ecosystem destroyed (Somasundaram & Sivayokan, 2013). As SMEs can promote resilience of communities, the study examined the entrepreneurial growth of Northern entrepreneurs. Further, having finished the war, there is no remarkable progress in the development of SMEs (Vijayakumar, 2013). According to the statement of Central Bank Governor Mahendran (2009), the average debt of the average family in Northern Province has increased from 52,000 rupees to 194,000 rupees based on Central Bank surveys, where this emphasis the need for financial literacy by holding educational programs especially for SME sector to guide them on better borrowing techniques.

The study shows that there is a strong positive relationship between access to finance and entrepreneurial growth, and this confirms the previous arguments of most literature in this area

of study. Hussain (2018), the most common finding in the existing research is SMEs encounter external finance restrictions and the limited financial skills also negatively influence SMEs' in relation to the chances of survival, growth and innovation. Fraser et al. (2015), as cited by Hussain (2018), emphasis that an insufficiency of financial management skills is correlated with businesses' access to finance that in return adversely affects firms' ability to access optimal debt and equity that leads toward bankruptcy. Based on the survey results, financial literacy can be seen to positively influence access to finance resulting in entrepreneurial growth. This has reinstated the previous findings. According to Cole and Fernando (2008), as cited by Bongomin et al. (2017), financial literacy is a vital determinant of access to finance. Further Bongomin et al. (2017), emphasised that, low levels of financial literacy may avoid the acceptance of more complicated financial products including insurance, as investor may be uncertain to buy a product whose utility they do not fully comprehend.

Another key observation made based on survey results was, when looking into the background information regarding the entrepreneurs, it was evident that most entrepreneurs recently emerging in the Northern Province give preference to trade sector business, as their willingness to take a risk is less. Looking at the year of establishment and the sector of the businesses, it was observed that most of the businesses that emerged during the last three to four years were primarily into trade. This reflects that entrepreneurs of the Northern Province who were highly involved in the agricultural and industrial sectors previously are now shifting to trade due to its 'risk averse nature' and short term profit orientation. Based on the discussions had with some of the entrepreneurs in Jaffna, Vavuniya and Killinochchi, it was identified that, soon after the end of the ethnic conflict, many businesses from the South, particularly traders from Colombo, opened up branches in the Northern Province. According to Miriyagalla (2014), a substantial enhancement to trading in the North took place when the main land route, the A9, was opened and goods could be transported conveniently. However, this mainly focuses on short term gains and in the long run sustaining profit margins is challenging due to the high levels of competition.

Further, during the study it was also identified that the average debt of the average family in Northern Province has increased significantly in the recent years. According to Mithula (2015), representing the lack of proper financial literacy and the discipline for financial stability, is one of the critical benchmarks for a successful and a sustainable business. Thus, this area needs to be further investigated in the Sri Lankan context.

Theoretical implications

Perusing the literature, it can be seen that there are several studies that have been carried out to emphasize the factors affecting entrepreneurial characteristics and orientation and thereby it influences the growth of the business. Further there are studies relating to the relationship between access to finance and business growth. However, according to Oswald (2008), as cited by Fairoz, Hirobumi & Tanaka (2010), there is limited understanding on the difference in the rate of entrepreneurship growth across a nation. Further, academics also have an inadequate understanding of the difference in access to finance and entrepreneurial success of firms across countries. (Shane, 1992 as cited by Fairoz et al., 2010). Thus, appropriate studies are needed to better recognize the degree of access to finance and its impact on business performance of SMEs. According to Zhang (2018), prior research it proposes that lack of financial literacy is one of the reasons of inertia in financial decision-making and there is a limited understanding on the difference in the rate of financial literacy across a nation.

According to the ambidextrous management theory in entrepreneurial growth companies (Moore, 1986; Bygrave, 1989) entrepreneurship is a process where entrepreneurial orientation turns into implementation and thereby leads to business growth. However, the effect of external factors such as access to finance and financial literacy on this relationship has not been examined. Thus, this study contributes to existing knowledge by incorporating the moderating effect of financial literacy in the relationship between access to finance and economic growth.

Managerial implications

Due to the immense advantages of the SME sector as a developing economy, Sri Lanka should focus on entrepreneurial development in this sector. This study particularly focuses on the Northern Province as there are only a few surveys and studies that have focused on this area due to the ethnic conflict that prevailed until 2009. Focusing on the statistical information available in the labour force survey conducted by the Department of Census and Statistics the average unemployment rate in Sri Lanka was 4.4% in 2016; however, the unemployment rate in the Northern Province was 6.3%. Despite the numerous programmes undertaken by the government and other non-governmental organization in relation to post war recovery in the Northern Province, the unemployment rate seems significantly high. According to the statement of Central Bank Governor Mahendran (2009), the average debt of the average family in Northern Province has increased from 52,000 rupees to 194,000 rupees based on Central Bank surveys, where this emphasis the need for financial literacy by holding educational programs especially for SME sector to guide them on better borrowing techniques.

One major implication of this study is that the findings will give existing managers and potential investors in the Northern Province an understanding of the access of finance to SMEs in this province and the influence of that on business growth. This will ensure the potential growth of the SMEs in these districts and thereby will reduce the unemployment and underemployment prevailing in this Province. This study also helps the Governmental and Non-governmental institutions to understand the level of financial literacy in the Northern Province, which would provide guidance for their future projects and policy implementation. The progress of SMEs is one of the essential segments in government policy making (Vijayakumar, 2013).

Social implications

One of the key challenges faced by Sri Lanka at present is to ensure post war growth by minimizing regional growth disparities by developing the living standard of the people. Particularly the Northern Province, which is slowly recovering after 2009, at the end of a long period of a distinctive civil war, needs to be paid more attention in order to ensure regional development across the country. The SME sector has an immense likelihood to produce maximum socio economic benefits to the country with little investment (Gamage, 2003). Since there is a high potential for success in SMEs in Sri Lanka particularly in the Northern Province, the focus needs to be placed on identifying the business growth of the SME sector. Thereby the Government can create new employment opportunities and improve the living standard of the Province. Even though several corrective actions have been taken to improve SMEs, their contributions have been insufficient, due to the fact that there is no operative public-private participation and lack of coordination (Vijayakumar & Marek, 2012, as cited by Vijayakumar, 2013). Therefore, by better understanding the present context of the Northern Province, both public and private sectors can focus on social and economic development.

Focusing on the employed population, the unemployment rate and the poverty levels in the Northern Province, this study has contributed identifying level of access to finance to the SME sector to achieve a satisfactory level of employment opportunities and growth. Even though the internal conflict ended in 2009, the living standard of most displaced people, particularly those in Jaffna, is yet to be improved (Vijayakumar, 2013). Therefore, the government should focus on proper policy development and implementation to encourage new entrepreneurial start-ups. Further, during the study it was identified that the average debt

of the average family in Northern Province has increased. Thus, this area needs to be further investigated in the Sri Lankan context.

Sri Lanka needs an external body to effectively regulate the financial service's processes in order to improve the financial literacy while protecting the financial consumers.

Limitations and future research

This study focused on the determinants of entrepreneurial growth in the Northern Province of Sri Lanka, and therefore the study is limited to a single province of Sri Lanka. Future studies can emphasise on covering both the Northern and Eastern Provinces, particularly highlighting post war entrepreneurship. The Northern Province consists of different ethnic communities, however, the study did not focus on the impact of ethnic or cultural differences on financial literacy and access to finance of the entrepreneurs. Therefore, in future researchers can focus on the ethnic or cultural differences among the entrepreneurs of the Northern and Eastern Provinces. Further, there are numerous definitions given for SMEs by different entities and the study has considered the definition provided by the Department of Census and Statistics, which classifies the SMEs, based only on the number of people engaged in the enterprise.

CONCLUSIONS

The aim of this paper is to better understand the growth of the SME Sector in the Northern Province of Sri Lanka. SMEs and individual entrepreneurs would continue to play critically important roles in the growth of developing economies (Baumol, 2004 as cited by Majumdar, 2008). Zahra (1999), as cited by Tseng (2012), notes that entrepreneurial progression has been reflected as one of the vital drivers for socioeconomic development because it provides numerous job opportunities, offers a variety of consumer goods and services, and generally increases national prosperity and competitiveness. Therefore, as a developing economy, Sri Lanka should focus on entrepreneurial development. Thus the purpose of this study was to identify the access to finance for SMEs in the Northern Province of Sri Lanka and the moderating effect of financial literacy on the relationship between access to finance and business growth.

The study shows that there is a strong positive relationship between access to finance and entrepreneurial growth, and this confirms the previous arguments of most literature in this area of study. Based on the survey results, financial literacy can be seen to positively

influence access to finance resulting in entrepreneurial growth. Another key observation made based on the survey results was, that the demographic information reveals that most of the entrepreneurship recently emerging in the Northern Province gives preference to trade sector business as entrepreneur's willingness to take risk is relatively low. Further, during the study it was identified that the average debt of the average family in Northern Province has increased in recent years. Thus, this area needs to be further investigated in the Sri Lankan context.

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Leadership, Organizational Behaviour & Human Resource Management

A Gravity Model Analysis of International Migration to South-East Asian and European Countries

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Abstract

Throughout the long history of labor migration in Sri Lanka, Middle East region dominated the foreign employment market. But recently, Sri Lankan migrants are paying more attention on moving to South-East Asian and European countries. In Sri Lanka, macroeconomic studies related to migration are less than that of microeconomic studies. As a contribution to reduce this gap, this research study examines the macroeconomic determinants of international labor migration from Sri Lanka to South-East Asian and European countries using gravity model of migration. When the heteroscedasticity is present, linear estimators result in inconsistency in estimated coefficients. Therefore, Poisson Pseudo Maximum Likelihood estimation technique was used to estimate panel data directly from its multiplicative form instead of log linearization. Secondary data over the period of 2007 to 2015 were used to estimate the model along with destination-year fixed effects to capture unobserved time-variant and time-invariant variables as well as to account for the multilateral resistance. According to the results, GDP per capita and unemployment rate of Sri Lanka are the push factors which force people to move from Sri Lanka while the destination countries' population and dependency ratio are the pull factors which attract migrants towards the destination. Moreover, population of Sri Lanka and poverty head count ratio were also discovered as significant under the research study.

Keywords: Gravity model, Labor migration, Poisson pseudo maximum likelihood technique, South-east Asian and European countries

INTRODUCTION

Labor migration as defined by Perruchoud and Redpath-Cross (2011) is the “Movement of persons from one State to another, or within their own country of residence, for the purpose of employment”. Since the end of the 1990s, issues related to international migration, and more

particularly to the international mobility of both highly-qualified workers and unskilled workers, are receiving increase attention from policy makers. There are now an estimated 258 million people living in a country other than their country of birth — an increase of 49% since 2000 — according to new figures released by United Nations Department of Economic and Social Affairs (2017), on International Migrants Day. The International Migration Report (2017) (Highlights), a biennial publication of the department, states that 3.4% of the world's inhabitants today are international migrants.

When Sri Lanka is concerned, international labor migration has grown in importance for the last several decades and the numbers have increased more than tenfold during the same period. The total number of out migrants of Sri Lanka on employment abroad at present is estimated to be 212,162 (female departures 72,891 and male departures 139,271) (Central Bank, 2017).

Foreign employment has become the largest source of foreign exchange in the Sri Lankan economy during the past few years. Since 1970's when formal employment migration commenced, foreign employment has generated substantial inflows of remittance while relieving pressure on unemployment of youth by providing employment abroad. During the year 2015, the workers' remittances accounted a sum of Rs. 948,957 million and it was around 9% of the GDP of the country (Sri Lanka Bureau of Foreign Employment, 2016).

Sri Lanka Bureau of Foreign Employment (SLBFE) (2016) concludes that although continuously Saudi Arabia has secured a significant high share of workers, in the recent past there has been a decline in the rate of growth in the departures and new destinations have become more lucrative especially for semi-skilled workers. Countries like Maldives, Cyprus, South Korea, Singapore and Malaysia are becoming more attractive destinations with regard to better pay and better working conditions.

International labor migration is thus an important and stable source of foreign currency inflow to the country reducing the pressure on authorities on account of the unemployment issue in the country.

Migration to South-East Asian and European Countries

International migration flows have increased in magnitude and complexity over the past decades receiving ever more attention at policy level. It has become increasingly significant and potentially a beneficial component of the socioeconomic fabric of Sri Lanka. International migration can generate significant welfare gains for migrants as well as to countries of origin

and destination in reduction in poverty levels and enhancing the living standards of many. People are exploring different destinations for this purpose. The emerging interest on European and South- East Asian countries is a result of it. According to Srivastava and Pandey (2017) 1.66% of total Sri Lankan migrations are for South-East Asia and 27.31% to Europe.

The South-East Asia region consists of 10 countries: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. These countries are members of the Association of Southeast Asian Nations (ASEAN). This region has experienced dynamic socio-economic developments that bring significant changes to the living conditions and labor productivity. In line with the increasing level of development, urbanization and international migration in the region have increased significantly. As Sugiyarto (2015) points out in his research of internal and international migration in South East Asia, Singapore tops the list with an urbanization rate of 100%. Other countries with high urbanization rates are Brunei and Malaysia, each with more than 70%. On the international front, the region is one of the main sources of migrants worldwide. It contributes more than 13 million or 6% of the total global migrant stock, which is estimated at 216 million (Canuto and Rafha, 2011).

After World War II Western Europe became one of the main immigration regions of the world (Zaiceva and Zimmermann, 2008). In Western Europe, many countries from which migrants departed in large numbers in the past century are now major destinations, especially Italy, Ireland, Portugal and Spain (United Nations, 2008). According to the data confronted by the SLBFE (2016) the major destinations of Sri Lankan migrants in Europe are UK, Italy, Cyprus, Greece and Ireland.

Srivastava and Pandey (2017) conclude that migration of low skilled workers to European Union (EU) countries, especially the United Kingdom, Italy, Germany and Spain, has been increased in recent years as a result of labor shortages in these countries. In recent years, the EU Commission has recognized the importance of skilled immigration from non-EU countries, but has so far failed to convince the member states of the need to establish a common European economic immigration policy. The United Kingdom is one of the EU countries that already executes a policy to attract such migrants from the new Eastern member states and non-EU countries under its Managed Migration policies and Highly Skilled Migrant Program (Ruhs and Martin, 2008).

The common problem encountered in gathering information about emigrants to this region is the irregular migration. The restriction of emigration at source, and restrictions on immigration at destination, result in irregular migration flows (Wickramasekara, 2002). Major destinations for Sri Lankan irregular migrants are Greece, France, Italy, the United Kingdom and Canada (United Nations Office on Drugs and Crime, 2012). Therefore the actual number of migrants to these countries are always higher than available amount.

The main purpose of this study is to find the determinants of international migration to South-East Asian and European countries. The study contributes to the available literature by empirically estimating the determinants of migration using push and pull factors together in one model. The estimation is done using nine years data from 2007 to 2015 and by applying the Extended Gravity Model. Results presented in the literature will be helpful for the policy makers to develop better migration policies.

The study is divided into the following sections: Section 2 presents the review of literature, Section 3 discuss the methodology and provides estimation technique and detail about data employed, and Section 4 explores the factors influencing international migration, while the last section provides conclusions and policy implications.

REVIEW OF LITERATURE

Determinants of International Migration

When examining through numerous of researches it was obvious that researchers have used several categories of determinants in realizing the reasons behind international migration. Most of the literature suggests that economic factors are the largest motivators which drive people (Lowell, 2009). Relatively a few studies like Hoffmeyer-Zlotnik (2007) and Deaux (2006) focus on social and cultural factors. Some other determinant categories are geographical factors, development indices of both source and destination countries, role of admission policies; the country's integration into the global economy and gender equality.

Starting from the most initial researches, in 1932, Sir John Hicks argued that differences in net economic advantages, chiefly differences in wages, are the main causes of migration. Borjas (2000) declared workers calculate the value of the opportunities available in each of the alternative labor markets, net out the cost of making the move, and choose whichever option maximizes the net present value of lifetime income.

Jayawardhana and Jaythilaka (2009) describe that one of the most commonly known causes of migration is the Push-Pull factors of migration. Push factors are factors which drive people to leave their country, and the pull factors are factors that attract them to a new country. Most commonly known push factors of migration are elements such as economic, social, and political hardships in the origin country, while the pull factors include the comparative advantages in the richer countries' economic and social policies. Therefore, in Sri Lanka, a combination of push and pull factors have affected the size and direction of migration flows of the country.

Kim and Cohen (2010) investigated non-economic variables as predictors of international migration. Because economic and demographic factors are closely related, the present study leaves open the option of using demographic variables like life expectancy, infant mortality rate (IMR), and potential support ratio (PSR) as proxies for economic or living conditions of countries.

According to Mayda (2005) economic and non-economic determinants affecting international migration are destination country's per worker GDP, distance between the source and host country and share of the origin country's young population.

Per capita GDP of destination and origin countries, the populations of both countries, the distance between the countries as well as colonial relationships, common language and contiguity are important determinants of global bilateral migration flows (Cuaresma *et al.*, 2013).

In the case of Sri Lanka, there are few research studies regarding the determinants of international migration and almost all of them have conducted using micro level factors. For example, Manel (2015), Manel and Perera (2017), Dharmadasa and Rathnayake (2017) and Dharmadasa and De Zoysa (2014) show that household size is major determinant of migration. Apart from household size, ethnicity (Manel, 2015; Manel and Perera 2017) and level of education (Manel and Perera, 2017) are also shown to be the determinants of migration. However, according to the best of our knowledge based on the available literature, studies to find out the macroeconomic determinants of international migration to South-east Asian and European countries using gravity model are lacking in Sri Lanka.

Gravity Model

Tinbergen (1962) first used the gravity model to explain international trade patterns. It has been well-proved as a robust ex-post methodology in that aspect. However, migration studies relying on the gravity model are fewer than those in the fields of trade and investment. Among others, Lewer and Berg (2008) applied this model to analyze various facets of international labor migration.

There are many theoretical hypotheses and models concerning the determinants of migration. Gravity model is selected as the framework because it yields results that were easy to interpret, and as recent developments in panel-data analysis enable estimation based on the model. The gravity model, in its simplest form, views migration as determined by the sizes of the populations of destination and origin and the distance between origin and destination. Gravity models are one of the macro models under the interaction models.

Gravity models were initially based on Newton's gravity law, but recent contributions have also provided the micro foundations in the context of migration analysis

The original gravity model is expressed as;

$$GF_{ij} = g \times \frac{M_i^\alpha \times M_j^\beta}{D_{ij}^\gamma} ; i \neq j \dots \dots \dots (1)$$

Where;

GF_{ij} - Gravitational bond between objects i and j

g - Gravitational constant

M_i and M_j - Masses of i and j

D_{ij} - Square of the distance between objects i and j

According to his law, the gravitational force is directly proportional to the masses of the objects and indirectly proportional to the distance between them.

Later, this equation was used to model international trade and investment. As the initial step, Zipf in 1946 used this equation to model migration replacing gravitational force with migrant flow from region i to region j and masses with populations of two regions.

The mathematical form of the gravity model is as follows;

$$M_{ijt} = k \times \frac{P_{it}^{\alpha} \times P_{jt}^{\beta}}{D_{ijt}^{\gamma}} ; i \neq j \dots \dots \dots (2)$$

Where;

M_{ijt} denotes the number of migrants from origin i to destination j in t time, P_{it} denotes population of i in t time, P_{jt} denotes population of j in t time, D_{ijt} refers to distance between i and j in t time, and k denotes a constant.

It predicts that, all other things being equal, countries with large populations send more emigrants to destinations than countries with small populations, and that countries with large populations attract more immigrants. The greater the distance between origin and destination, the smaller the migration predicted.

Gravity models are estimated in terms of natural logarithms, denoted ‘‘log. If we take the above equation in its logarithm form,

$$\log M_{ij} = \beta_0 \log(k) + \alpha \log(P_i) + \beta \log(P_j) + \gamma \log(D_{ij}) + \varepsilon_{ij} \dots \dots \dots (3)$$

$\beta_0, \alpha, \beta, \gamma$ - Elasticities

ε_{ij} - Random Error

There are additional factors that can affect migration flows. For this reason, gravity models are enlarged with variables related to different migration pull and push factors; for instance, better economic opportunities in the destination country (i.e. prospects for higher wages or lower unemployment rates), safer conditions, and higher political freedom, among others (Ramos, 2016). In 1966 Lowry extended this basic gravity model to the following form including push and pull factors. Currently the following extended model is used by almost all the researchers.

$$\log M_{ij} = \beta_0 + \beta_1 \log(P_i) + \beta_2 \log(P_j) + \beta_3 \log(X_i) + \beta_4 \log(X_j) + \beta_5 \log(D_{ij}) + \varepsilon_{ij} \dots \dots \dots (4)$$

X_i – explanatory variables describing different features of the origin (i.e. push factors)

X_j - explanatory variables describing different features of the destination (i.e. pull factors)

Most criticism of the gravity model has concerned its use as a predictive tool. Redding and Venables (2004) show that gravity model estimates are likely to be biased by standard error clustering when some variables in the model apply to only one of the two countries in each observation. Feenstra (2004) shows that adding fixed effects to the model eliminates this bias. According to Ramos (2016) the primary limitation to gravity models within the context of migration analysis has been the limited availability of bilateral migration data; however, the situation is improving quickly. Nowadays, the main concerns are related to issues such as multilateral resistance to migration or the frequent presence of zero observations.

Poisson Pseudo Maximum Likelihood Estimation Technique

As Santos Silva and Tenreyro (2006) points out, the log-linearization of the gravity equation changes the property of the error term, thus leading to inefficient estimations in the presence of heteroscedasticity.

Gomez (2013) concludes that if the data are homoscedastic, the variance and the expected value of the error term are constant but if they are not, the expected value of the error term is a function of the regressors. The conditional distribution of the dependent variable is then altered and OLS estimation is inconsistent. Heteroscedasticity does not affect the parameter estimates; the coefficients should still be unbiased, but it biases the variance of the estimated parameters and, consequently, the t-values cannot be trusted. Hence, the recent literature concerning estimation techniques have opted to use nonlinear methods as well as two parts models for estimating the gravity equation.

Among nonlinear estimation methods, the most frequently used are Nonlinear Least Squares (NLS), Feasible Generalized Least Squares (FGLS), the Heckman sample selection model and Gamma and Poisson Pseudo Maximum Likelihood (GPML and PPML) (Gomez, 2013).

Poisson Pseudo Maximum Likelihood technique estimates Poisson regression by pseudo maximum likelihood. It differs from Poisson because it uses the method of Santos Silva and Tenreyro (2010) to identify and drop regressors that may cause the non-existence of the (pseudo) maximum likelihood estimates. PPML is similar to GPML, but assigns the same weight to all observations.

Using the PPML estimator, we can avoid the problem of log-linearization which is found by Santos Silva and Tenreyro (2006) to lead to inconsistent estimates in the presence of heteroscedasticity. Recent works in the trade literature, Fally (2014) show that gravity

equations estimated using the Poisson Pseudo-Maximum Likelihood estimator with origin and destination are fully consistent with the structural constraints imposed to account for multilateral resistance factors.

Considering these factors and since the PPML estimator is becoming increasingly available using standard statistical software packages, these results suggest that it should be a valuable tool for econometric analysis of the gravity model.

METHODOLOGY

Data

Panel data from the year 2007 to 2015 were used to identify the significant macroeconomic determinants of international labor migration by applying Gravity model.

All the data regarding the variables were gathered from secondary data sources. Labor departures to ten countries namely Brunei, Malaysia, Singapore, Thailand, Cyprus, Greece, Italy, UK, Ireland were collected from Economic and Social Statistics of Central Bank of Sri Lanka-2016. These ten countries were considered as destination countries and Sri Lanka was considered as the origin country.

Distance between capital cities (in kilometers) was collected from the CEPII's database. Data regarding the populations of countries, unemployment rates, GDP per capita and the dependency ratio were collected from World Bank's World Development Indicators. From the Department of Census and Statistics Sri Lanka, poverty head count ratios were collected.

Variables

The gravity model presumed a (mechanical) direct relationship between migration and the size of the destination and origin regions, as well as an inverse relationship between migration and distance (Borjas,2000). Therefore, the coefficient should have a negative value.

When discuss about the population, the higher the population the higher is the potential stock of migrants, *ceteris paribus*(Rotte and Vogler, 1998). Similarly, larger the population in the destination country, larger the labor market for immigrants (Lewer and Berg, 2008). Hence, the coefficient is expected to have a positive sign.

Coefficient of the GDP per capita in the origin is expected to have a negative value while the coefficient of the destination is expected to have a positive value.

Jennissen (2003) describes that unemployment has a negative effect on net international migration. A rise in the unemployment rates of the origin will increase emigration and a rise in the unemployment rate of the destination will reduce migration towards the destination. Therefore, the coefficients of origin and destination are expected to have a positive and a negative values respectively.

Age dependency ratio is the ratio of dependents (people younger than 15 or older than 64) to the working-age population (those age 15-64). Low dependency ratio means more adults of working age are available. Increased dependency ratio has negative impacts on the growth of the economy resulting lower productivity in the country (Lainton, 2011). Therefore, coefficient is expected to have a positive value due to the fact that higher dependency ratio in a destination country will tend to encourage immigration.

Coefficient of poverty headcount ratio is expected to have a negative value referring that larger the percentage of people below the poverty line lesser the emigration.

Data Analysis

Taking logarithms gives the standard gravity model in linearized form, but makes clear that the error term is in logarithms too. The mean of log of error term depends on higher moments of error term, thus including its variance. If the error term is heteroskedastic, which means that if the error term does not have a constant variance which is highly probable in practice, then the expected value of the error term depends on one or more of the explanatory variables because it includes the variance term. Then the logarithmic transformation causes inconsistency in the estimated coefficients.

The presence of heteroscedasticity under the assumption of a multiplicative error term in the original nonlinear gravity model specification requires adoption of a completely different estimation methodology.

As a solution to this problem Silva and Tenreyro (2006) present that under weak assumptions – essentially just that the gravity model contains the correct set of explanatory variables – the Poisson pseudo-maximum likelihood estimator provides consistent estimates of the original nonlinear model. It is exactly equivalent to running a type of nonlinear least squares on the original equation. Since we are dealing with a pseudo-maximum likelihood estimator, it is not necessary that the data be in fact distributed as Poisson. Therefore, although Poisson is more

commonly used as an estimator for count data models, it is appropriate to apply it farmore generally to nonlinear models such as gravity.

Moreover, logarithmic transformation can cause troubles when dealing with zero migrant flows. Therefore, Breusch-Pagan/Cook-Weisberg test was conducted to check for the heteroscedasticity.

Owing to the presence of heteroscedasticity which was revealed from the test, application of OLS method will result in inconsistent estimation. Therefore, the analysis was done using PPML estimation technique following Silva and Tenreyro (2006).

Ramos (2016) states that multilateral resistance to migration which is related to the influence of third countries in determining migration flows between two particular countries should be considered when modeling migration. If it is not considered, the influence of alternative destinations could bias the results of analysis. One of the possible solutions to overcome this problem is to include origin-year dummies or destination-year dummies. Inclusion of these different type of fixed-effects also helps to reduce other potential negative effects, such as the omitted variable bias.

Beine and Parsons (2012) investigated climatic factors as determinants of international migration and used dummies to represent fixed effects to capture destination specific factors and time invariant origin factors with PPML technique. Chort and De La Rupelle, (2016), used PPML with destination year fixed effects to find out the determinants of Mexico-US outward and return migration flows using a state level panel data set.

Following the empirical studies, this research study uses destination-year fixed effects (DES_{jt}) using dummies to account for both time invariant and time variant destination specific characteristics as well as to account for the multilateral resistance.

The study was conducted under 2 main gravity equations as the basic gravity model and extended gravity model. According to the basic gravity equation, functional form of the equation can be written (Amirault *et al.*, 2012) as follow,

$$\text{MIGRATION}_{ijt} = f(\ln\text{POPULATION}_{it}, \ln\text{POPULATION}_{jt}, \ln\text{DISTANCE}_{ijt}) \dots \dots \dots (5)$$

The estimation was assumed in a time frame due to the application of panel data to the study. Therefore, t (time index) was added to the equation.

Statistical form of the extended gravity model which was used for the application of PPML technique is expressed as,

$$(\text{MIGRANT}_{ijt} | X_{ijt}) = \exp(\beta_0 + \beta_1 \ln \text{POP}_{it} + \beta_2 \ln \text{POP}_{jt} + \beta_3 \ln \text{DISTANCE}_{ijt} + \beta_4 \text{GDPPC}_{it} + \beta_5 \text{GDPPC}_{jt} + \beta_6 \text{UNEMPR}_{it} + \beta_7 \text{UNEMPR}_{jt} + \beta_8 \text{DPNDNCYR}_{jt} + \beta_9 \text{PVRTYHR}_{it} + \beta_{10} \text{DES}_{ji} \varepsilon_{ijt}) \dots \dots \dots (6)$$

MIGRANT_{ijt} -Migrant flow from Sri Lanka to destination

$\ln \text{POP}_{it}$ – Natural logarithm of Population of Sri Lanka

$\ln \text{POP}_{jt}$ – Natural logarithm of Population of destination region

$\ln \text{DISTANCE}_{ijt}$ - Natural logarithm of Distance between two regions

GDPPC_{it} – GDP per capita of Sri Lanka

GDPPC_{jt} – GDP per capita of destination

UNEMPR_{it} – Unemployment rate of Sri Lanka

UNEMPR_{jt} - Unemployment rate of destination

DPNDNCYR_{jt} - Dependency ratio of destination

PVRTYHR_{it} Poverty Headcount Ratio of Sri Lanka

DES_{ji} - Destination year fixed effects

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}$ – Coefficients (elasticities) to be estimated

ε_{ijt} – Random Error

RESULTS AND DISCUSSION

This section presents the results and discussion of the study. First we checked the presence of heteroscedasticity using Breusch-Pagan / Cook-Weisberg test. Result of the Breusch-Pagan / Cook-Weisberg test for was turned out as follows,

Ho: Constant variance

Variables: fitted values of MigrantFlow

chi² (1) = 36.79

Prob > chi² = 0.0000

The test checks the null hypothesis that all the error variances are constant versus the alternative, error variances are not constant. A large chi-square indicates that heteroscedasticity is present. As the heteroscedasticity is present in the data, estimation of the model through OLS technique results in biased estimates. Therefore, we used PPML technique to have unbiased estimates. The results of the parameter estimates of Gravity Model using PPML technique is

	(1)	(2)
Population of destination (in logs)	-0.4300***	0.4500 *
Population of origin(in logs)	-22.2700	-436.3900***
Distance between origin and destination (in logs)	-1.9800**	0.9900
GDP per Capita of destination	-0.0000	-0.0000
Unemployment rate of destination	0.0200	-0.1900
Dependency ratio of destination	0.0500	0.0032*
GDP per capita of origin	0.0600	0.0200***
Unemployment rate of origin	0.0007	9.2900***
Poverty headcount ratio of origin	-0.0200	-0.8000***
Constant	399.9666	7239.7510***
N	90	90
R-squared	0.1320	0.9350
Destination-year fixed effects	No	Yes

shown in the table 1.

Table 1: Results of PPML Estimation Technique

***p < 0.10, **p < 0.05, ***p < 0.01**

According to the methodology explained, column 1 indicates the results of extended gravity model without destination-year fixed and column 2 records the results of extended gravity model with destination-year fixed effects.

According to the results of applying PPML technique to extended gravity equation without fixed effects as shown in the first column, only the population of destination country and distance between the 2 countries were found out to be significant under 1% and 5% significant levels respectively. When considering the coefficient signs, distance has obtained expected negative sign but the destination population has obtained negative sign objecting the theory.

After implementing PPML technique to extended gravity model with fixed effects (column 2) six variables namely destination population, origin population, dependency ratio, GDP per capita, unemployment rate and poverty rate of origin turned out to be significant. Destination population and dependency ratio were significant under 10% significance level whereas origin population, GDP of origin, unemployment rate in origin and poverty head count ratio in origin were significant under 1% significance level. The expected signs for coefficients were resulted for destination population, dependency ratio, unemployment rate and poverty rate of origin. The signs of coefficients of origin population, and GDP per capita of origin are opposing to the expected signs.

According to the literature, population of both origin and destination should have a positive coefficient. Since the population reflects the labor force in a country it is agreed that with the increment of population migration also increases.

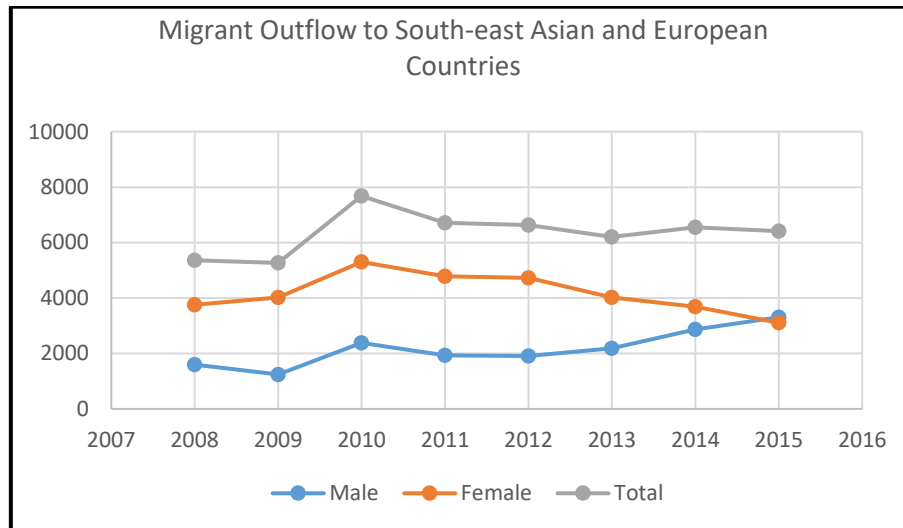


Figure 4: Migrant Flow from Sri Lanka to the selected Countries

According to the results with the increase in population in Sri Lanka migration decreases. Sri Lanka is recognized as a country where the female migration is higher. Therefore reduction in female migration results in the drop of total migration. According to figure 1 it is clear that total departures for the selected countries have reduced after the year 2010. If we carefully observe the male and female migration patterns we can observe that although male migration has increased while female migration has reduced over the years. Since the female migration is dominant in our country the reason behind the reduction of migration with increase in population of our country could be this reduction in female migration.

Various regulatory measures taken by the SLBFE to reduce the female migration on the influence of social cost may have been impacted on the decrease of the female migration which are shown below.

1. Increasing the lower limit of age of females leaving for domestic sector employment started on 14.02.2011.

2. NVQ Level III qualification has been made compulsory for employment as Domestic Housekeeping Assistants in K.S.A, Hong Kong with effect from 14.08.2013.

3. Requirement of a family background report (FBR) for all female migrant workers has been made compulsory to ensure that they do not have children under five years old.

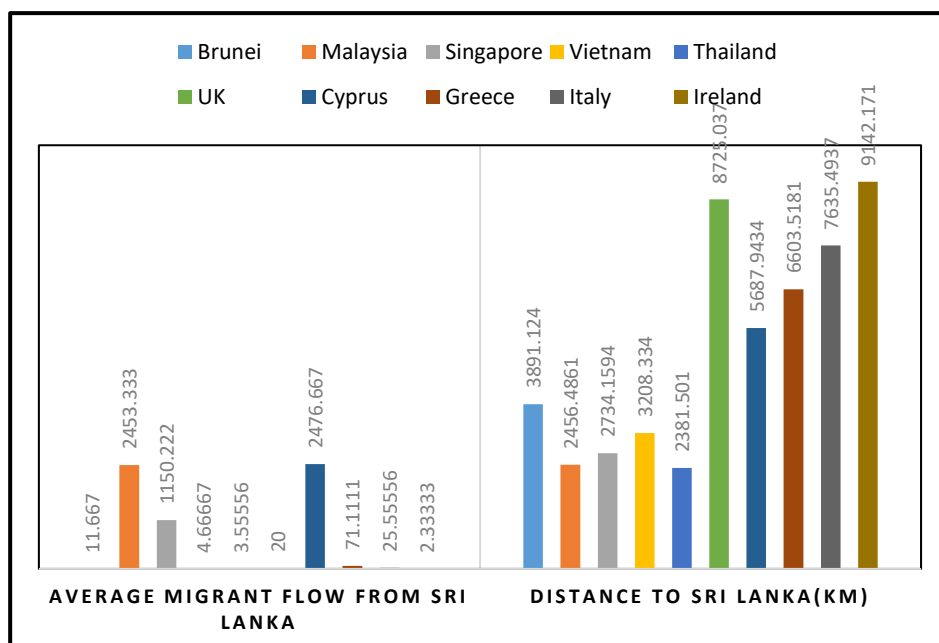


Figure 5: Distances and Average Migrant Flows from Sri Lanka to the selected Countries

The figure 2 depicts the distances and average migrant flows from Sri Lanka to the selected countries. According to the statistical results the coefficient of distance was insignificant with a positive sign.

Mayda (2010) declares that greater geographic distance between the two countries implies higher travel costs for the initial move as well as for visits back home. In addition, the further away the origin and destination economies are from one another, the more costly it is to acquire information about the foreign labor market.

From this graph it is clear that the closer countries to Sri Lanka are Malaysia, Vietnam and Thailand and therefore, migration is expected be higher to such countries. However, this assumption is true only for Malaysia and Vietnam. But for Brunei, Thailand and Vietnam it is

the opposite. Also for Cyprus which is a very distant country the migrant flow takes a higher value. Therefore, we can conclude that in our research the distance is an insignificant variable in projecting migration for these counties. As Wickramasekara (2011) found out Sri Lanka shows the lowest costs, probably reflecting an effective migration administration system, in migration.

According to the research carried out by Rotte and Vogler in 1998 in finding the Determinants of International Migration from Developing Countries to Germany they could observe that among the other explanatory variables distance was insignificant for African countries and those resulted positive coefficient value for distance variable.

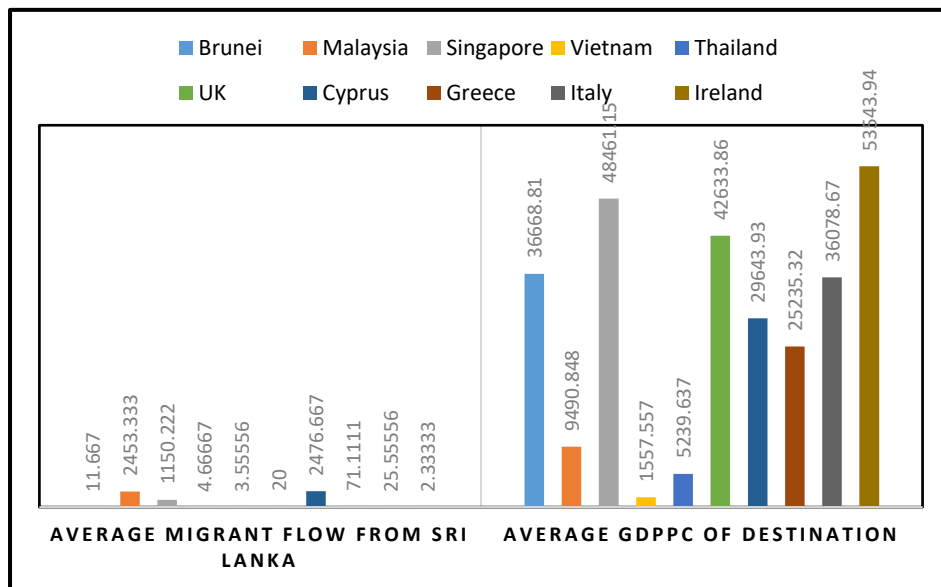


Figure 6: Average GDP per capita of destination and average migrant flows from Sri Lanka to the selected Countries

From the statistical analysis it was found out that the coefficient of GDPPC of destination to be insignificant and negative. As depicted by this graph, Ireland, Singapore and UK claim for higher GDP per capita. Therefore, we would expect a higher migrant flow to these countries. But according to the result it is obvious that this is true only for Singapore. Malaysia whose GDP per capita is 9490.8480, which is the 3rd lowest GDP per capita has the highest average migrant flow of 2453. Also Cyprus where the GDP per capita is 29643.9300 which is the 5th highest average GDP per capita has the highest average migrant flow. Hence it would be clear that the GDP per capita being insignificant in our research is justifiable.

Borja (2000) describes as workers move to the region that provides the best opportunities, they eliminate regional wage differentials. Since the workers can find the best living conditions, facilities and safety from these countries unlike the middle-east countries, we assume people are compelled to forget about the differences in GDP per capita.

Following the standard practice in the literature, the immigrant’s income perspectives in the host country are proxied by GDP per capita. Borjas (1989) and Mayda (2010), however, argue that this proxy does not signal the true income opportunities for an immigrant because differences between the GDP per capita in host and source country are affected by differences in skill intensity.

Jennissen (2003) conducted a research in realizing the economic determinants of net international migration in Western Europe. The results of this research can be confronted in order to support our result. Through his research he could find that the coefficients of GDP per capita in Austria, Sweden and Switzerland are not significant.

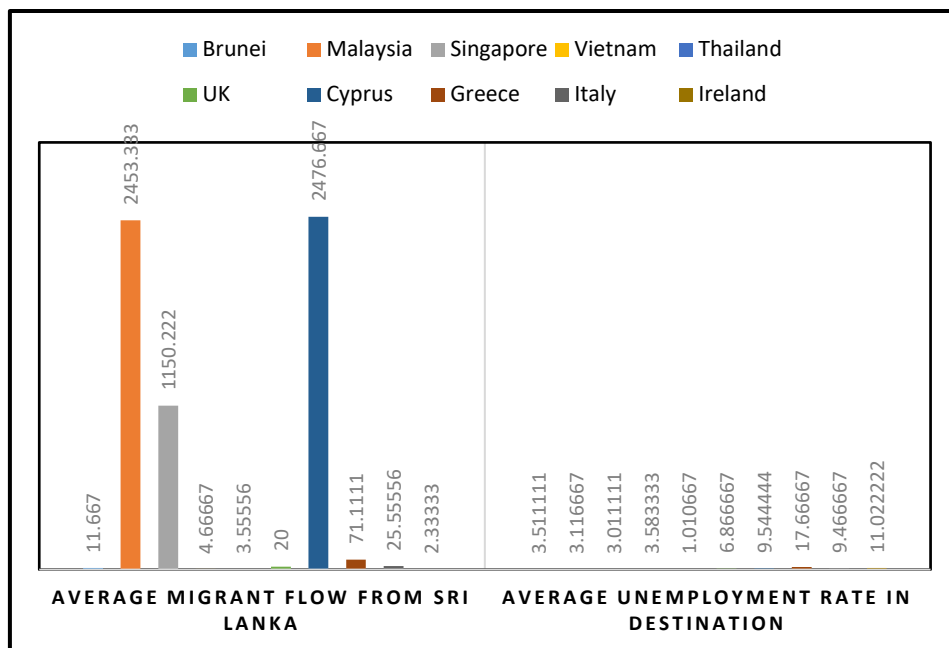


Figure 7: Average GDP per capita of destination and average migrant flows from Sri Lanka to the selected Countries

Although the expectation was a significant, positive coefficient value for the variable unemployment rate in destination the result was insignificant with the expected sign. Therefore, through figure 4, this scenario is explained. As the figure shows, Malaysia which holds a lower average unemployment rate as 3.1167% has the 2nd highest average migration flow and Cyprus

which has the 3rd highest average unemployment rate of 9.5444% ranks first as the country which highest average Sri Lankan migration flow is destined. Hence, it is apparent that unemployment rate in the destination is insignificant when considering to migrate to South-eastern and European countries.

Most of the time the migrations to these countries occur through direct contacts. The migrants may have either relatives or friends who are dwellers in these countries. Therefore, via their support migrants find occupations and then travel.

According to analyses by Van der Gaag and Van Wissen (1999), unemployment turned out to be the most important economic indicator of international migration in Germany, the Netherlands and the UK. But, Zaiceva and Zimmermann (2008) have found that the unemployment rate does not significantly affect the emigration intentions when considered at a 5% level in their research conducted in finding out the determinants of labor migration in Europe.

Mitchell and Pain (2003) carried out a research to identify the determinants of international migration into the UK using a panel based modelling approach. What they found was the unemployment rate of US as the destination country was insignificant and had positive sign.

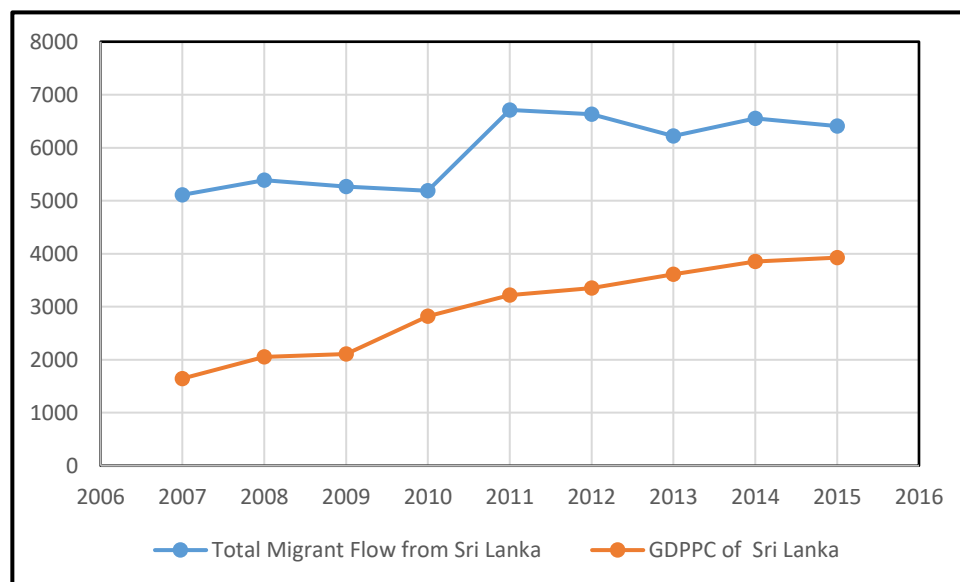


Figure 8: GDPPC of Sri Lanka and total migrant flow from Sri Lanka to the selected Countries

After referring to the literature we expected GDP per capita of Sri Lanka to be a significant variable with a negative coefficient sign. Nevertheless, after the statistical analysis it was revealed that when the GDPPC of our country increases by one unit the migration also increases

by 9.29%. The variable was significant under 1%, 5% and 10% significant levels with a positive sign. When looking at the figure 5, at a glance it is obvious that curve of total migration flows is an upward-sloping although there are several fluctuations in the curve. The figure 5 also denotes the directly proportional relationship between the migration flow and GDP per capita of Sri Lanka. Therefore, the positive coefficient which resulted for Sri Lanka's GDP per capita can be justifiable.

Moreover, this can be explained in another aspect. GDP per capita is a measure of average income per person per year which can be calculated by dividing the GDP by mid-year population. Since employees are categorized according to their skilled level as professional, middle level, clerical and related, skilled, unskilled and housemaids, there is a significant income inequality present in the country according to their wage rate. GDP per capita is constituted with the income of all these six categories. Therefore, considerable increment or decrement in any skilled level can cause significant fluctuations in country's GDP per capita.

As an example, if the income of professionals or any other higher wage category increases considerably compared to other categories with low wages, GDP per capita of the country also increases. But, the situation of the poor remains unchanged. Therefore, although the GDP per capita of our country increases poverty remains the same and ultimately people migrate irrespective of the GDP per capita of our country.

While identifying the determinants of Mexico-US outwards and return migration flows analyzing state-level panel data, Chort and De La Rupelle (2016), found that after controlling for other time variant factors at the Mexican state level (violence, climatic shocks) and dyadic factors, the GDP per capita at origin has a positive impact on the size of outward migration flows.

If we observe the variables as push and pull factors generally we can understand that out of the 5 push factors 4 become positive and out of the 5 pull factors 4 become negative. Mayda (2010) in her research of empirically investigating the determinants of migration inflows into fourteen OECD countries by country of origin, between 1980 and 1995 she has interacted an indicator variable of changes in destination countries' migration policies with pull and push factors, respectively. According to her findings pull effects become more positive and push effects turn negative in those years when a host country's immigration laws become less restrictive.

Jayawardhana and Jaythilaka (2009) states that the number of professionals, middle level and clerical and related migrants recorded a decline in 2007. This decline in skilled categories is

mainly due to restrictive migrant laws that were imposed in the wake of the global economic crisis. Hence, we can come to the conclusion that these restrictive migrant laws imposed by these countries can be a reason for the general results achieved through this research.

At the same time, it has to be noted that the data pertaining to professionals, middle level and skilled categories do not give the full picture as most migrants in these groups tend to migrate direct and do not register with SLBFE. Therefore, data pertaining to the skilled categories will be much higher if the direct migrant numbers are added. (Jayawardhana and Jaythilaka, 2009)

It should be emphasized that mainly the unskilled workers and the housemaids register with the SLBFE while the other tend to find jobs independently using direct channels. Therefore, these workers who migrate independently find job opportunities using direct contacts and do not register with the SLBFE as the existing law that mandates all migrants who go on employment needs registration with SLBFE is not practiced and monitored sufficiently. For example for 2007, the SLBFE shows that not a single professional worker has migrated to UK, USA, South Korea, Cyprus, Italy, China and Greece, which is a gross underestimation and contrary to the evidence in the foreign employment patterns for professional workers. (Jayawardhana and Jaythilaka, 2009)

Population of the destination found out to be significant under 10% significance level. Unit increment of the population in the destination country increases the migration outflow from Sri Lanka by a rate of 0.45%. When the population stock in the destination country the need of constructions and development of infrastructure and increases causing a higher demand for labor. For example the situation report on international migration in East and South-East Asia (2008) says that although the growth rate of the population of Malaysia remains relatively high, the country's robust economy and urbanization have generated a demand for foreign workers that is met by large numbers of both regular and irregular migrants. Therefore it is acceptable that migration increases as a result.

As defined by the United Nations (2017) dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old). Dependency ratios indicate the potential effects of changes in population age structures for social and economic development, pointing out broad trends in social support needs. From the statistical analysis we could find a positive relationship of dependency ratio of destination on the migration from Sri Lanka to the selected countries. Dependency ratio is significant under 10% significance level. With the increment of dependency ratio, productivity of a country

reduces (Lainton, 2011). As a result, destination countries encourage immigration to enhance their economic growth. A unit increment of dependency ratio in destination increases the out-migration from our country by 0.0032%.

Jones (2008) mentions about rapid fertility decline in his research study. The effect of rapid fertility decline on population ageing is what has attracted a lot of attention from planners in East and Southeast Asia. By 2030 Thailand's proportion of elderly will have reached 15 per cent.

The demographic transition in countries such as Japan, Korea, and Singapore, along with longer periods spent by the youth in school, has reduced the supply of new workers entering the labor force. The imminent decline in the labor force in a number of East Asian countries (Japan, South Korea, Taiwan, Singapore) will require increasing reliance on overseas workers, at both ends of the skill spectrum, and the European debates on 'replacement migration' will have increasing resonance in the region (Demeny, 2003). Sugiyarto (2015) also supports this idea. The author states that ageing in Singapore and Thailand has been increasing very fast over 2000-2010, such that they are now above the world average level.

Unemployment rate in the origin is significant under all the 3 significance levels and show a positive relationship with the migration from Sri Lanka. When unemployment rate in our country increases by one unit it increases the migration outflow by 0.02%. When the number of employments in the origin country are insufficient people decide to migrate in search of job opportunities.

Poverty headcount ratio is the percentage of the population living below the national poverty lines. It is significant under all considered significance levels and constitutes with a negative coefficient in the statistical analysis results. Generally, it is believed that when people are poor migration would be increased. But, according to the results migrant flow from Sri Lanka reduces with the increment of the people below the poverty line. It is true that the poverty can be reduced with the migration due to the impact of remittances (Adams and Page, 2003). But, if the people are unable to fulfil the initial requirement of migration, cost of moving, then their dream would not come true. Consequently, the migration reduces. Thus, when the poverty head count ratio increases by one unit the migrant flow reduces by 0.8%.

CONCLUSIONS

This research study was conducted to find out the macroeconomic determinants of international migration from Sri Lanka to selected ten South-East Asian and European countries over the period 2007-2015. Poisson Pseudo Maximum Likelihood estimation technique was applied to estimate the gravity model with destination-year fixed effects instead of linear estimators due to the presence of heteroscedasticity.

According to the results, GDP per capita and unemployment rate of Sri Lanka are the push factors which force people to move from Sri Lanka while the destination countries' population and dependency ratio are the pull factors which attract migrants towards the destination. Moreover, population of Sri Lanka and poverty head count ratio were also discovered as significant under the research study.

The coefficient sign of population and GDP per capita of Sri Lanka deviated from the expected sign and the variables, GDP per capita of destination, distance between origin and destination and unemployment rate of destination turned out to be insignificant in determining migrating to South-East Asian and European countries. However, by approaching necessary facts and figures those consequences were attempted to explain.

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A Study on the Effectiveness of the Career Guidance Model applied by NIBM

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Abstract

Opportunity to obtain higher education is considered as a privilege in countries like Sri Lanka, as people believe that this opens new avenues for young generation to obtain better employment and benefits in life. Therefore all the higher education institutions are keen to make their graduates employable. They use different models to inculcate skills and competencies required by the industry in their graduates, hence to make them employable. National Institute of Business Management (NIBM) is a statutory body which has been offering higher education opportunities for its students since 1968. They utilize their own career guidance model which is based on grooming school leavers with the graduate attributes based on TDF model (Thinker, Doer & Finisher) they have identified and finally making the students industry ready through a study module called Continuous Professional Development (CPD). This study aimed at identifying the level of satisfaction of the employers with whom the graduate students of NIBM completed their internships with regards to the graduate attributes as well as CPD module outcomes. A questionnaire developed to measure the satisfaction level of the employers regarding the graduate attributes and CPD module outcomes were distributed to 138 employers who have provided internship opportunities to NIBM students in 2017/2018. The results pointed out that the model utilized by NIBM is successful as it shows above average satisfaction level for all the areas that has been tested, but at the same time it shows that there is tremendous opportunity for improvements since none of the areas show extremely high satisfaction levels.

Key Words: Graduate Employability, TDF Model, Continuous Professional Development, Career Guidance Model, National Institute of Business Management (NIBM)

INTRODUCTION

Unemployment and underemployment of a country is a topic that has been widely researched and discussed throughout the world. In Sri Lanka also this problem is prevalent and many research works have been done to identify the extent of the problem, its causes and solutions.

Many Sri Lankan families give a priority to the education of their children; they take great efforts to get their children into a popular school run by the government to obtain the benefit of "free education". Once they complete their school education by sitting for highly competitive, GCE (A/L) examination, which is also considered as the university entrance examination, their highest expectation is to get selected into a state university to complete higher education. There is a great competition; according to Sri Lanka University Statistics 2016, 51.43% who sat for GCE (A/L) got eligible for university entrance but only 18.68%

received admission into a state university. In addition to the fifteen (15) state universities there are seventeen (17) institutes which provide degrees with the approval of the University Grants Commission (UGC) as well as many other institutes which provide degrees through affiliations with foreign universities.

Many parents in Sri Lanka consider higher education as a means of ensuring employability among their children, so they opt to provide higher education to them. Once a child is selected to follow a degree programme, the expectation in the minds of the future graduate, his/her parents, relations and the general society increases. "....almost all Sri Lankan families are having greater aspiration of providing university education for their children as a secured path of higher employability". (Ariyawansa,2008)

However, the reality might be different from their thinking, as "many students, who are fortunate enough to enter the universities, have to face numerous challenges especially at the end of the graduation in seeking suitable employments". (Ariyawansa,2008) It can be seen that this is a national level problem, which needs to be solved immediately, as it can lead to unhappiness and frustration among the most promising and talented young population of Sri Lanka as well as their parents. In the long run it may even lead to youth unrest and so many other social issues like getting delayed to achieve their life objectives, starting families, career growth etc.

According to the Census and Statistics department quarterly report, the total unemployment of Sri Lanka is 4.4% for the year 2016. The rate of unemployment among GCE (A/L) qualified and above category seems to be higher; 8.5%. This is a situation that needs to be considered seriously by the policy makers as well as academics, because it shows higher the qualifications, it becomes more difficult to find employment. The reason for this situation can be an increase in the expectations among the educated.

Most of the graduates expect to find government and pensionable jobs, but "private sector plays its role as a main actor in the labour market through its generation of labour market demand for personal qualified in computer science, finance, management and marketing with a sound knowledge of English." (Weligamage & Siengthai,2003) Many employers report difficulty in finding appropriately skilled labour, and identify this as a key constraint on business. Many research work has been done to identify the skills required. According to the Presidential Committee which was appointed has identified three main reasons for graduate unemployment;

negative attitudes of graduates, lack of communication skills and lack of English knowledge. (Ministry of Education and Higher Education, 1995)

When analyzing the current job opportunity advertisements, it can be seen that the employers are looking for potential employees with; leadership skills, team-work, self confidence, personality, interpersonal skills, positive thinking, practical mind set, business etiquette etc. The list can be quite long and comprise of two broad categories like soft skills and life skills.

The solution is to design the degree programmes to incorporate many of these skills as much as possible, according to Knight & Yorke (2003) "While it can be argued that subject matter has become more complex, governments, employers and other stake holders have come to expect higher education to contribute to the development of a variety of complex 'skills' which - they argue - enhances the stock of human capital." This task can be very challenging for universities or higher education institutions.

The National Institute of Business Management (NIBM) an institute that functions under the purview of the Ministry of Skills Development and Vocational Training in Sri Lanka has introduced a new career guidance model to the degree programmes offered with affiliation of foreign universities, in order to make their students employable.

Research Problem

The National Institute of Business Management (NIBM) is an institute that has been providing opportunities to acquire higher education to school leavers as well as professionals. NIBM offers degree programmes in the areas of Information Technology, Management & Creative Designing with the affiliations of many foreign universities for the last fifty years. As this institute did not want to add some more graduates who will join the group of unemployed graduates, they have introduced a unique career guidance model for their graduate programmes.

The model comprise of two years of full time studies which end with a compulsory internship, and the final year of the degree is conducted on part time basis, which can be followed by the student while being employed. This model is quite similar to the "sandwich degree model" applied by Salford Business School, University of Salford, UK. According to Procter (2010) a one year period of employment is an excellent opportunity for the student to develop knowledge and skills in their discipline and for the employer to assess the suitability of a student for a long term future graduate position."

The students, who join NIBM to continue their higher studies, would complete their first year of the degree, which is identified as Advanced Diploma in Business Management (ADB M) and the second year of the degree which is identified as the Higher National Diploma in Business Management (HNDBM). Throughout these two years students acquire knowledge, skills and attitudes which are critical to ensure employability and be successful in the corporate world. These two years are focused on creating a person with identified graduate attributes based on a model known as TDF – Thinker, Doer, and Finisher given in *Table 1*. These attributes are transferred to the students through study modules, application of different delivery methods like lectures, case studies, field visits, presentations, practical sessions,

The internship opportunities are provided by the "Career Guidance and Industrial Training" (CGIT) unit and the students are encouraged to continue with the employer until they complete their relevant degree or even beyond. Therefore when they graduate, they have acquired one year work experience in the industry, which will gain competitive advantage over other graduates who enter into the job market without any experience in the corporate environment. written reports, group and individual assignments and industry placements.

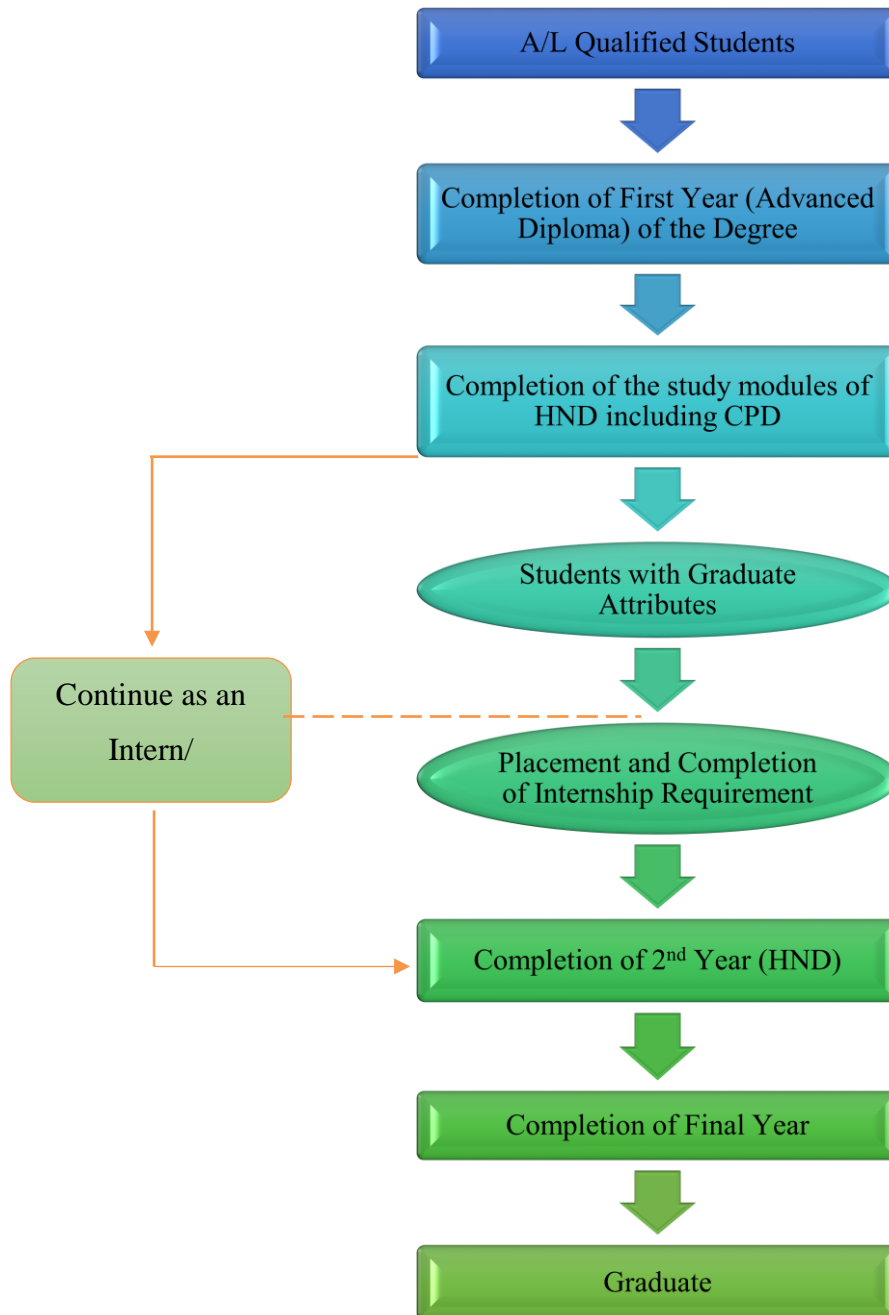


Figure 1: Study Model of NIBM

Table 1: Graduate Attributes of NIBM Students(TDF Model)

Broad Attribute	Specific Attribute
Thinker	Independent & critical thinker
	Investigator
	Resourceful & responsible person
Doer	Technical specialist
	Effective communicator
	Self confidence
	Collaborator & adaptable person
	Process oriented
Finisher	End in minder
	Ethically & socially responsible person
	Lifelong learner

The students are prepared for the industry specifically by grooming them to be aligned with the graduate attributes that have been identified. Also the students are taught the essential soft skills through a specific study module, Continuous Professional Development (CPD) during the third trimester of the second year or Higher National Diploma level. (*Figure 1*).

CPD Module covers the below given content (*Table 2*) which is delivered with class room lectures and workshops. The content can be divided in to three categories based on the categorization indicated by Knight & Yorke (2006)

Table 2: Module Content Covered in the Continuous Professional Development (CPD)

Categorization	Module Content
Personal Qualities	Identifying own personality
	Seven habits
	Stress management through time management
	Adapting to a new organizational culture
	Leadership & change
	Developing career plan
	Professional grooming & etiquette
	Maintaining health & fitness
Core Skills	Writing journal & web articles
	Writing business proposals
	Writing visionary report for business development
	Creativity & innovation
Process Skills	Office management & administration
	Problem solving process
	Process improvement

In addition the students are have to participate in CV writing sessions, face a mock interview, general health test, general IT knowledge test and general English knowledge test. These would help the student to get an additional advantage when facing a real employment interview and afterwards starting the internship in an organization.

Once the student start their internship which is for a minimum period of three months, a set of documents need to be completed by the external supervisor from the organization, internal supervisor from NIBM and the student.

1. Note book which is to be maintained by the student to enter important details in elaborated form
2. Daily diary which needs to be maintained by the student and certified by the external supervisor
3. Project report prepared by the student which incorporates details of a company process that the student is familiar with, collect & analyze data to identify the weaknesses and provide recommendations for improvements under the supervision of the internal supervisor
4. Interim presentation and final presentation done for students of the study group and internal supervisor
5. Feed-back given by the external supervisor

Since the internship is embedded into the study programme and considered as a module, marks are allocated for the above components and grades are given according to the performance of the student.

This model has been followed for the last ten years by NIBM and the feed – back received from the employers regarding the performance of the students have been satisfactory, but any formal survey has not been done. Therefore this research is conducted to study the effectiveness of this model and to see the level of satisfaction of employers regarding the students. The problem of the study is "How effective is the career guidance model applied by NIBM to ensure employability of their graduates?"

Literature Review

According to Celik (2006) ...work provides not only financial resources but also a means to self realization.” Having paid employment helps a person to be independent, to plan life pursuits and maintain a preferred life style, therefore paid employment is crucial for a young person.

Employability has been defined by Hillage & Polland (1998) as “having the capability to gain initial employment, maintain employment and obtain new employment if required.” They have proposed a model based on four elements;

- Employability assets based on knowledge, skills & attitudes
- Deployment of the assets based on career management and job searching skills

- Presentation of the person based on CV writing skills & interview techniques
- Personal circumstances based on opportunities in the job market

Knight & Yorke (2003) defined employability as “A set of Achievements - skills, understandings and personal attributes- that make individuals more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy.” This emphasizes the close relationship between employability and learning, which can be gained from higher education institutes. This is clearly indicated in their USEM model (*Figure 2*), which provides four interrelated components of employability.

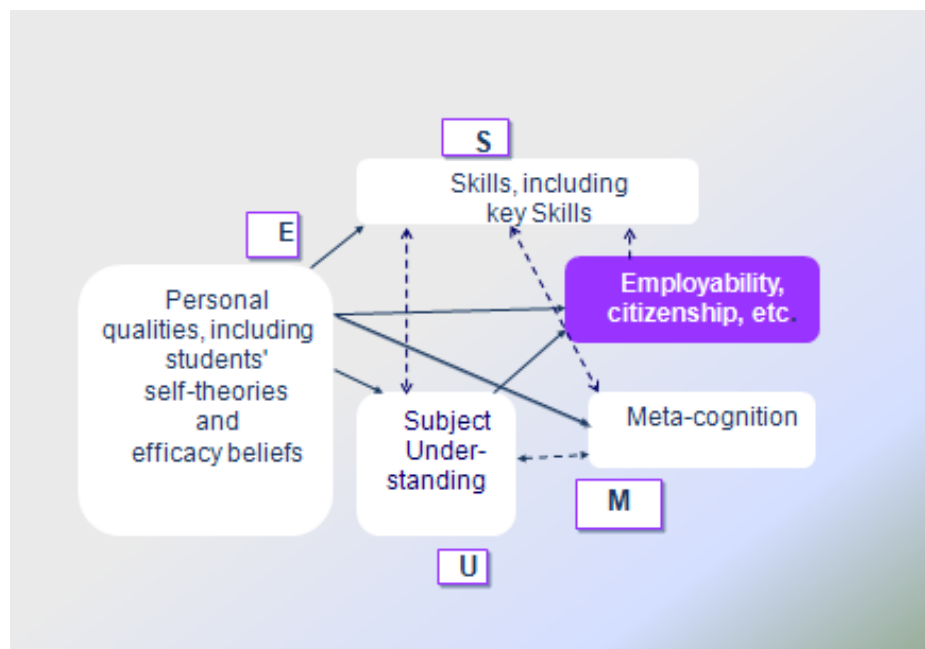


Figure 2: USEM Model (Knight & Yorke, 2003)

Many universities and higher education institutes work hard to make their graduates and undergraduate students employable. Making the graduates employable is a challenge faced by them. Corporate sector organizations have a doubt about the industry readiness of fresh graduates.”Employers in South Africa were the most dissatisfied with graduate’s ability to speak foreign language, their business acumen, leadership, problem solving, self awareness and customer orientation, willingness to learn, team work, interpersonal skills, lack of practical skills & experience” (Jonck & Minnaar, 2015). Therefore they prefer graduates with work experience, which leaves fresh graduates unemployed.

To face this, the universities and higher education institutes need to design their study programmes to embed skills and competencies essential for employment. According to Jonck & Minnaar (2015) a growing demand for adequately skilled graduates led to many higher education institutions to review their objectives and aims to meet industry needs.

The USEM model of employability introduced by Knight & Yorke in 2003, provide a framework to embed employability into the curriculum and this has become one of the best known and respected models for employability. (*Figure 2*)

This model identifies four inter-related components of employability;

- Understanding of subject matter
- Skillful practices in the context of academic, organizational and life in general
- Efficacy beliefs of the learner on self, self belief and improvement & development of self
- Meta cognition include knowledge on strategies for learning, thinking, problem solving & lifelong learning

Universities and higher educational institutes are focusing on enhancing the cognitive skills and for a graduate to be employable; they need to learn how to transfer this knowledge in to real life situations. But “spontaneous transfer is not nearly as frequent as one would expect, even with the best instructions.” (McKeachie, n.d.) Even though not easy, this is exactly what universities need to do because it is expected by the organizations and they need to make their graduates employable as it is a key indicator when ranking a university. Also this is a duty expected from a university by the country as a whole and how they can contribute to enhance the economy of the country.” A university can contribute to improving the competitiveness of businesses if it produces graduates possessing competencies demanded in the labour market.” (Sultanova *et al*, 2017)

A major issue faced by universities and higher education institutions is “that although authors agree that skills other than subject content are essential for securing and maintaining employment, the individual skills, competencies, and personality traits that have been identified in different countries as being pivotal are not universal” (Jonck & Minnaar,2015)

METHODOLOGY

A questionnaire was developed to cover the graduate attributes and competencies gained through CPD module. Expert opinion was obtained from 03 employer representatives and 03 senior lecturers of NIBM. Changes were made based on the expert suggestions. After ensuring the validity through expert opinion, a pilot survey was conducted by distributing this questionnaire to 10 employers to ensure the reliability of the research instrument. Cronbach's alpha value was calculated using SPSS 18 statistical package.

Table 3: SPSS Output for for Cronbach's Alpha

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.980	.980	42

This questionnaire was administered to all the organizations which have provided internship opportunities for NIBM students in the years 2017/2018 through Google Forms. There were 16 forms which returned and 39 organizations have completed the survey, which is 28% of the total population.

DATA ANALYSIS

Most of the employers in the sample had a favorable perception about NIBM undergraduate students which was reflected in the responses given by them for the initial questions:

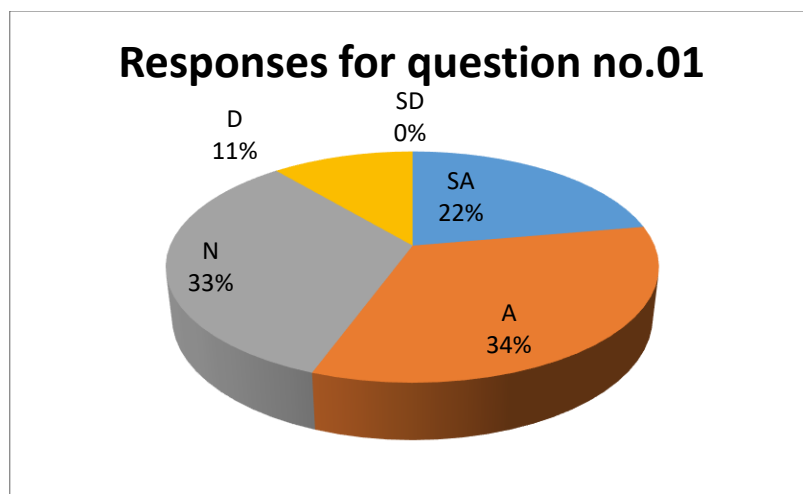


Figure 3: Whenever we have vacancies NIBM students are our preferred choice

Figure 3 indicates the responses given for the question whether NIBM undergraduates are their preferred choice, 33% was neutral. 22% of the sample strongly agrees, while 34% agree with the statement. 11% disagree with this.

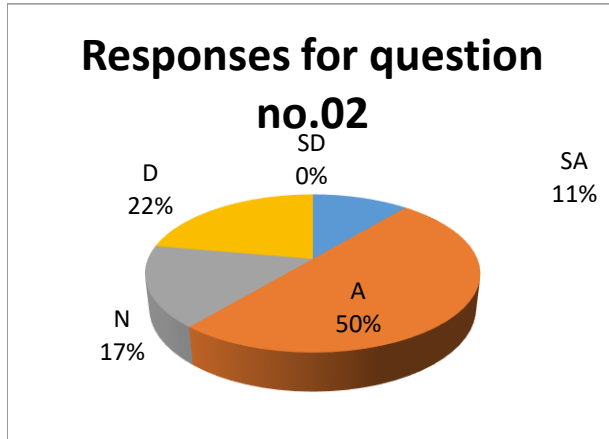


Figure 4: They perform well above other new recruits

Figure 4 indicates the responses given for the question whether NIBM undergraduate students perform well above others, 61% either agree or strongly agree, while 17% is neutral about it and 22% disagree.

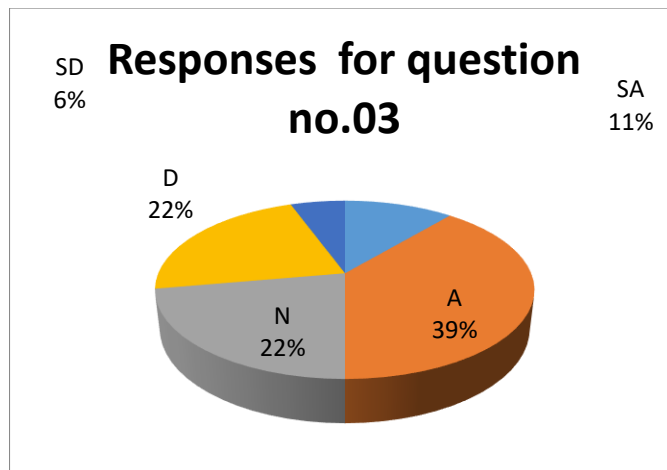


Figure 5: They stay with our organization longer than other new recruits

According to the *figure 5*, 50% of the employers either agree or strongly agree to the question whether NIBM undergraduate stay with the employer longer than other new recruits. While 22% is neutral about it and 28% either disagree or strongly disagree.

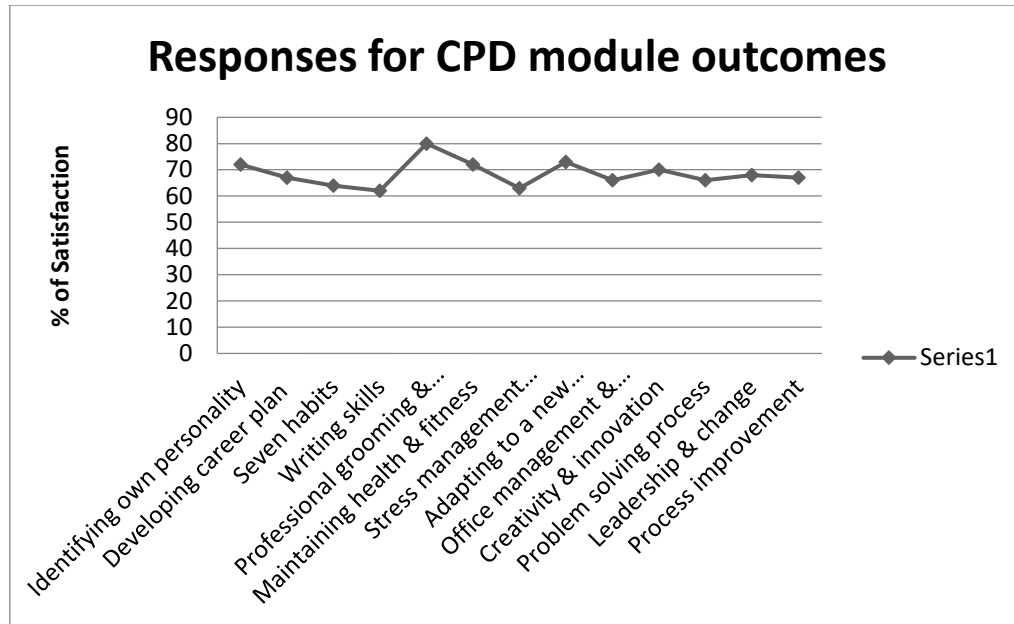


Figure 6: Satisfaction Level of Employers Regarding the CPD Module Outcomes

The *figure 6* shows the response received for the satisfaction level of employers on CPD module outcomes of the NIBM students. Overall level is above the average level (above 50%), but there is room for improvement. The highest level of satisfaction has been received for the professional grooming & etiquette (80%) lowest levels were received for seven habits, writing skills, stress management through time management and office management & administration.

Figure 7 shows the satisfaction level of employers regarding the graduate attributes and it can be seen that the largest gap exist for the thinker component of the graduate attributes. Employers have indicated the highest level of satisfaction for the doer component, but the level definitely can be improved as the highest level of satisfaction is 70%.

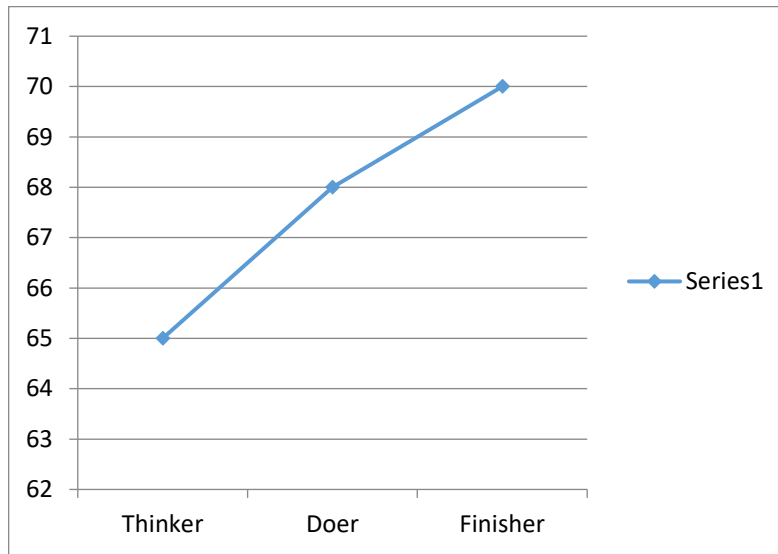


Figure 7: Satisfaction Level of Employers Regarding the Graduate Attributes

DISCUSSION

When it comes to expectations of students in Higher Education Institutions and their parents, employability takes a leading position. Most of the students complete their graduate level education expecting a better job with higher benefits. In order to achieve this, the higher education institution need to find ways of instilling skills required for employability into their graduates by incorporating them into the curriculum of the study programmes. Different institutions follow different models to provide better opportunities for their graduates. National Institute of Business Management has their own model where they have included a specific module *Continuous Professional Development (CPD)* and designed the whole programme to create a graduate with identified graduate attributes based on *Thinker Doer & Finisher (TDF) model*.

Based on the *Figure 3* it can be seen that 33% of the organizations are neutral may be due to the reason that the officer who completed the questionnaire is not the person who takes decision regarding who should be recruited and when. This can make them neutral regarding this question but 56% agree or strongly agree while 11% disagree. That means NIBM graduates are the preferred choice among majority of the employers in the population at the moment. It can be seen that 11% of the employers have disagreed and the reasons need to be found.

Figure 4 shows that a clear majority (61%) either agree or strongly agree when asked whether NIBM graduates perform better than other graduates. Only 17% stays neutral and 22% disagree with the statement. This is a favourable situation but it is good if it's possible to find out the reasons for employers to stay neutral or disagree with the statement.

For the question 3 (*figure 5*) about whether NIBM graduates stay longer than other graduates, 50% either agree or strongly agree and 22% stayed neutral while 6% disagree with the statement. Since a majority (50%) either agreed or strongly agreed, this means that NIBM graduates stay with the employers who have provided them with internship positions. The reason being, that after completing their internship the employer may be impressed and satisfied with the performance of the student and offer a long term and permanent employment opportunity. Also the student becomes familiar and comfortable with the work environment which keeps them with that particular employer for a longer time.

Continuous Professional Development (CPD) module has been introduced to the study programme especially to inculcate employability skills in to the NIBM graduates. According to the responses received for the questions asked based on the CPD module outcomes, the highest level of satisfaction level (80%) has been received only for professional grooming & etiquette. Four of the factors namely, Identifying own personality, Maintaining health & fitness, Adapting to a new organizational culture and Creativity & innovation, the satisfaction level stay between 60%-70%. Areas like seven habits, writing skills, stress management through time management and office management & administration have been given the lowest satisfaction levels (between 50% - 60%).

According to this analysis, NIBM can be satisfied since their students have been able to create an above average level of satisfaction in all the outcomes but they can look for greater improvements specially in areas like writing skills and stress management through time management.

According to *figure 7*, employer satisfaction regarding the graduate attributes displayed by NIBM graduates, again show an above average result but with room for greater improvements. The thinking component has received the lowest level of satisfaction (65%) and for both doing and finishing has received 68% and 70% respectively. This indicates that NIBM graduates are capable of implementing and finishing work rather than thinking and finding solutions. To overcome this situation, further emphasis on the areas where employers have

shown lower level of satisfaction is recommended, as they are essential skills for graduate employability.

CONCLUSION & IMPLICATIONS

When looking at this study it can be said that the model utilized by NIBM to make their graduates more employable seems effective since the students were able to satisfy the employers at a above average level. Also the results indicate that there is room for improvement as only in one area the satisfaction level has reached 80% or more. Therefore it can be said that NIBM need to look into the ways and means of improving their employability model further to help their graduates have better chances of finding employment opportunities.

Comparing this model with career guidance models which have delivered successful results and applying different methods of delivery can provide opportunity to further improve the effectiveness. Since it is not possible to find a common model which is suitable for all situations, finding the best suited model for each higher education university has to be done using their own experience as well as using examples from other success stories.

Limitations & Further Research

The limitations that have been identified are;

- Low level of responses received; the questionnaire was to be completed by the immediate supervisor of the intern student and they may be really busy and might not consider this as a priority, but this could have been overcome by contacting them individually and requesting them to complete the questionnaire. Due to the time and resource constraints this was not possible.
- Contacting the immediate supervisor might not be easy, as the contact point of the organization can be another person (eg: Human Resource Manager), then the questionnaire may not reach the immediate supervisor or sometime they may have been transferred or even left the company. If the questionnaire had been completed by a person other than the immediate superior, their views about the student may not be accurate

As a further research opportunity this research can be repeated with a larger sample and with some encouragement for more employers to take part in the research. Further the findings of this research open new avenues to find out the reasons for employers to be satisfied in certain areas but less satisfied in certain other areas. Therefore a qualitative study would open out new insights into the situation. Also if a comparative study can be done with other university graduates and NIBM graduates then a proper idea can be drawn regarding employability of NIBM graduates.

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Happiness and its Impact on Performance in the Work Field: a Case Study at a Navaratna Company Plant in Bhubaneswar, India

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Abstract

Happiness is a positive inner experience and is often used interchangeably with psychological wellbeing, quality of life or satisfaction. But the definition of happiness is quite different and distinct in the eastern world when we compared it with the western world. It has been described as multidimensional and does not centered around the subjective wellbeing elimination other dimensions as it is done in the west. Happiness at work is important for organizational success. It leads success, achievements and satisfaction. Researchers have found out that happiness transform people to more creative, energetic and successful. To understand the relation between happiness and performance at work, a study was conducted in a plant of a Navarantna Company at Bhubaneswar, India during June-July, 2017. A total of 201 responses were collected from the selected plant using judgmental sampling technique. Happiness among the employees was measured as per the Bhutan's GNH index. A structured questionnaire was constructed covering all the 9 domains in GNH index, 2010. First 3 domains are familiar with human development perspective- living standards (housing conditions, earnings, wealth) education and health. Then the good governance, ecological resilience and use of time are the nest 3 domains. The final three domains were quite ground-breaking- psychological wellbeing (happiness including feelings and mysticism), cultural diversity and resilience and community vitality. The methodology we used to measure happiness was "Alkire-Foster method (2007-11) for measuring multidimensional poverty" as used in the GNH index. Whereas, the performance of each of the sample employees was taken from the last year's office records as appraised by the company. There was no attempt made to reassess the performance of the employees by the investigator but the result was verified before taking it for analysis. The primary objective of this paper was to find out the impact of overall employees' happiness in their performance at the workplace. Is there any positive relation between happiness and performance of employees at workplace? There was also an attempt to see the relationship of each domain of nine selected domains with the performance of the employees. After the analysis, there could not be found any significant relation between overall happiness of the employees of the selected organization and their performances in the work field.

Key words: Happiness, GNH, Navaratna, workplace and performance

BACKGROUND OF THE STUDY

Kendrick (1987), productivity in the society is depended on individual's contribution and performance and ultimately results in self fulfillment and happiness in its highest degree.

The study on happiness is not new to the field of management. The study of happiness as a measure of collective functioning is based on an elongated history that extent multiple philosophical thinking (Kesebir & Diener, 2008). If we go to the ancient Greek literatures, Aristotle (2000) centered his Nicomachean Ethics on the quest for happiness. In India, it was the Dhammapada who describes a chapter on the theme of happiness and elucidates the ultimate end of a good quality life as the attainment of persistent happiness (Dhammapada, 2000). The metaphysical organizations like Confucianism and Taoism in China supported the various techniques by which both individuals and social gallantry create uplifting individual and social happiness (Lu, 2001). During the time of medieval period, St. Thomas Aquinas suggested that happiness was man's "last wish" and the eventual objective of the balanced life (Aquinas, 1947). In 20th century, Pascal (1669/1995) described: "All men search for happiness. There are no exceptions on it". In the 18th-century, philosopher Jeremy Bentham noted happiness as the supreme good (Bentham, 1823).

The statement, 'a happy worker is a productive worker' has strong origins in management ideology. During the time of Industrial revolution in the U.S. A., Barley and Kunda (1992) outline the importance of happiness but it gained importance during the Industrial Betterment movement that began about 1870. Proponents of this idea proposed that profitability followed from such acts as building housing, libraries, schools, and recreational facilities for employees and their viding fringe benefits such as profit sharing; and improving the sanitation factories. After a long gap of 25 years, in the 1920s, there was the development of Human Relations movement, seeded by the famous Hawthorne studies in Western Electric Company by Elton Mayo which changes the management thinkers and a shift towards behavioral science. Perrow (1986), a sociologist, was apprehensive about 'the happy worker-productive worker' notion is said to ambiguous the legitimate for conflict between labor and management.

Fisher (2010) narrates the definition and assessment of happiness at work and its precursors and outcomes. According to her, the definitions of happiness at work refer to pleasant individual decisions (positive attitudes) or pleasant practices (moods, positive feelings, emotions, flow states) at work. She differentiates between happiness defined as a set of

attitudes (e.g., job satisfaction, commitment) and happiness as a hedonic state. It means, on one hand, it can be characterized in terms of cognitive judgments of needs and wants and on the other hand in terms of an emotional state of mind. She identified seven alternatives for happiness at work. These are (1) job satisfaction, (2) organizational commitment, (4) engagement, (5) thriving and vigor, (6) flow and intrinsic motivation, and (7) affect at work. She proposes that researchers centered on 3 of them (job satisfaction, engagement, and affect) as ambassador of different facets of happiness at work.

When we check mostly the western literatures on happiness, most the studies are concerned to life satisfaction and happiness. Corporate world and behavioral scientist are busy studying the contribution of job satisfaction to quality of life; those who advocate women rights have studied what comprises happiness for women; gerontologists have examined the effects of age and aging on human happiness.

Until behavioural scientists came into existence, productivity was assumed to depend only on the absolute level of an individual's economic benefits. However, a huge chunk of literatures now shows that the relative level of these conditions also plays an important role and can be defined in terms of decision making or happiness, Markowitz (1952), Stigler and Becker (1977), Frank (1985), Constantinides (1990), Easterlin (1995), Clark and Oswald (1996), and Frederick and Loewenstein (1999).

Our study is concerned with the economics of happiness. For doing the study, we have taken the hypothesis that like GDP and inflation, happiness is also can be measured and has a linear relationship with productivity of labour. To be clearer, the happiness we have taken in our study is similar to the GNH index of Bhutan which is different from western literatures on happiness. Here also unlike western practices, happiness has been taken as multi-dimensional and not focused on subjective well-being only.

In 1972, it was Jigme Singye Wangchuck, the fourth King of Bhutan, who for the first time talked about (GNH) 'gross national happiness'. To him, GNH was more important than GDP (Gross Domestic Production). It simply means that development should take a holistic approach towards nations of progress and should give equivalent importance to non-economic aspects.

The GNH Index includes both traditional areas of socio-economic concern such as living standards, health and education and less traditional aspects of culture and psychological wellbeing. It is a holistic reflection of the general wellbeing of the population rather than a subjective psychological ranking of ‘happiness’ alone.

The GNH Index provides a general idea of performance across 9 areas; psychological wellbeing, ecological resilience, cultural diversity, good governance, time use, community vitality, health, living standard and education.

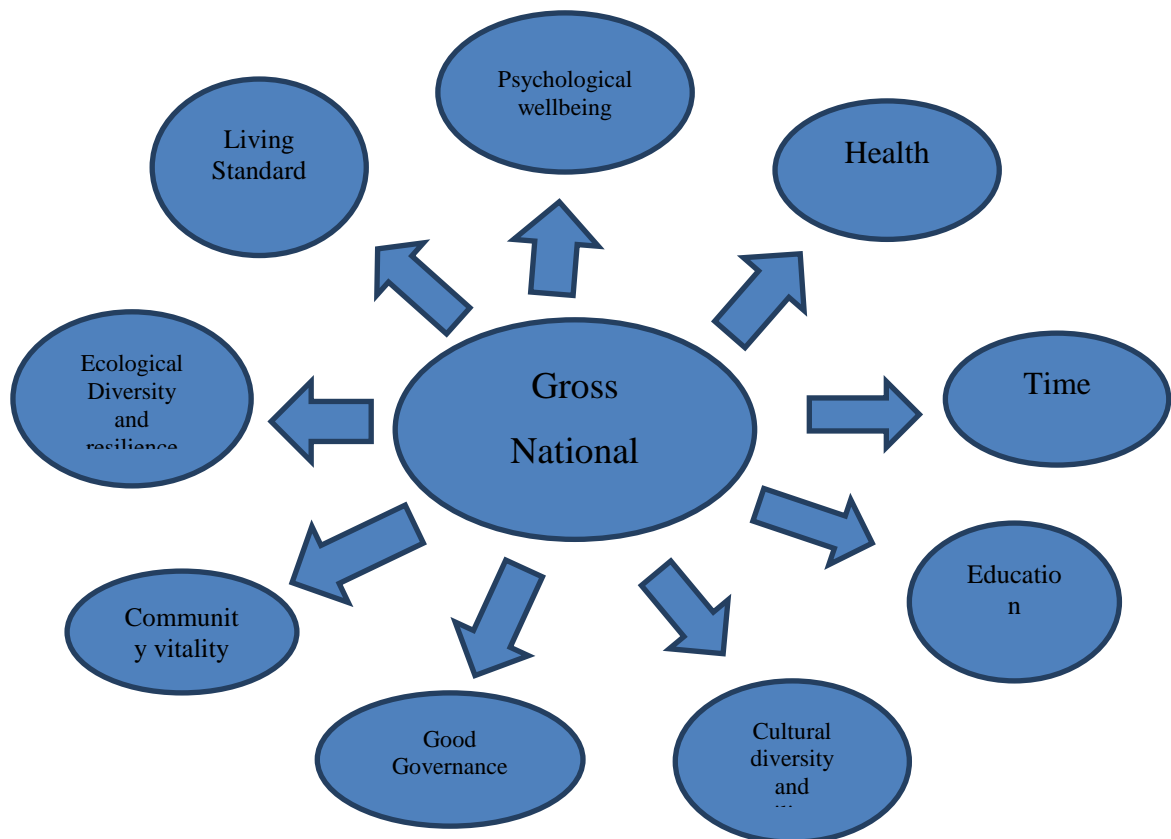


Figure 1: The 9 domains of GNH

SCOPE OF THE STUDY

The scope of this project is laid down in the objective itself. The study is made primarily for the accomplishment of the objectives. The detailed analysis of this research brought out with certain conclusion and on its basis some recommendation suggestions can be made which will help the organization to understand employee’s happiness and growth prospects.

This study helps in understanding the various factors that affects happiness and well-beings of individuals.

LITERATURE REVIEW

Economists at different time tried to establish relationship of happiness with a number of economic parameters. Richard Easterlin (1974, 1995) was among the first to study the economic parameters of various countries with degree of happiness. In 1974, he came with a finding that happiness does not depend on economic growth after studying the statistics of various rich and poor countries. Hirsch (1976) and Scitvosky (1976) and later on Frank (1985) did the similar type of study to establish the relation. Blanchflower et al. (1993), on the other hand, using data from USA, tried to establish relationship of happiness after controlling demographic and various other changes in the economy in more systematic way. Benin and Nienstedt (1983) Happiness in Single and Dual-earner families. The Effects of Marital Happiness, Job Satisfaction, and Life Cycle studied the reason for happiness and unhappiness among different demographic groups and found out that happiness differs for each group. They concluded that marital happiness and job satisfaction cooperate to produce inclusive happiness in dual-earner homes but not in single-earner. They also differentiate the factors that cause happiness among male and female. According to them stage of the life cycle plays a vital role in creating happiness for men but not for women. However the study conducted by Forgionne and Peeters (1982), concluded that sex and job satisfaction do not correlate. But London, Crandall and Seals (1977) and Kalleberg and Loscocco (1983) found out that job satisfaction is more important for men compared to women but White (1981) concluded that JS is more important for women. JS in different age group, (cf. Janson and Martin, 1982; Wright and Hamilton, 1978) have found out JS is greater among old workers than the young workers. Kalleberg and Loscocco (1983) concluded that JS changes sexwise and age wise.

Hackman and Oldham (1980) job Lawler's (1971), Trist (1963) and Dean & Bowen (1994) worked on employee involvement and reward systems. Di Tella, MacCulloch and Oswald on 'the macroeconomics of Happiness' found that happiness of a country depend on macroeconomic factors of the country. They further establish some patterns in the SWB with macroeconomic changes and stated that SWB are associated with changes in macroeconomic variables such as GDP. Blanchflower and Oswald (2011) questioned the establish notion "money does not buy happiness" and put forwarded that money can and does buy happiness. But they also stated that national happiness do not increase with increasing economic growth.

Ball and Chernova (2008), 'Absolute income, relative income, and happiness' tried to study the relationship between self reported happiness with absolute individual income, income

relative to other people and found out that both absolute and relative income are positively and significantly correlated with happiness. They also concluded that happiness has a higher impact with regards to relative income and changes of it, has a larger effect on happiness but both relative and absolute income has smaller impact when compared with economic factors.

For a long time, it was established with several review of literatures firmly that employee happiness did not necessarily stimulate productivity, Vroom (1964); Brayfield and Crockett, (1955). Wright and Staw, in their study on 'Affect and favorable work outcomes', tried to establish a relationship between work environment and happiness and concluded that personal outlook toward happiness, do not change in the happiness brought on by changes in organizational conditions and is associated with performance.

MEASURING HAPPINESS

The most important question and was our consideration before taking this topic 'Can happiness be measured accurately?' Blanchflower and Oswald (1993), Larsen & Fredrickson (1999), physiological measures like blood pressure have a strong relationship with SWB and can act as a proxy for SWB. Happiness is also can be measured with self-report questionnaires, interview ratings, peer reports, and memory for pleasant and unpleasant events (Sandvik, Diener, & Seidlitz, 1993). The various measures of SWB like Positive outcome, sanguinity, and confidence have strong associations with one another, and are somewhat consistent within individuals, Lucas, Diener, & Suh (1996).

Judge and Mueller (2011), 'Happiness as a Societal Value', identified several issues of happiness. According to them, before making a policy to increase happiness, they must established that happiness can be measured, so that the factors which cause happiness can be assessed, it can be appraised as an end, it is connected to significant outcomes; and identify techniques so that it can be combined to the national or cultural level.

The meta-analytic study exhibited that JS and performance at work are significantly correlate work (Judge, Thoresen, Bono, & Pat ton, 2001). People in affirmative frame of minds have more zeal for economic benefits (Isen, Daubman, & Nowicki, (1987). In a similar way, people in a negative frame of mind have lower hope, zeal for incentives and extra payment which are

detrimental in motivation and leads to lower level of work performance, Erez & Isen (2002). Similarly the individuals having negative frame of mind behave unexpectedly at work (Glomb, Steel, & Arvey, 2002) and don't take work seriously and used to show work extraction behaviors (LeBreton, Binning, Adorno, & Melcher, 2004).

IMPORTANCE OF HAPPINESS

Happiness is the most desirable feeling of every human being and is considered as the end of every need. It has a great value. It guides to success, triumph and fulfillment, healthy and long life. It helps to achieve many personal goals that we want in life. Happiness facilitates to renovate people to be more empathetic, more resourceful, more vigorous, and more victorious in life, Dhammananda (2011). Happiness is inner state of mind and comes from within and it doesn't depend on any conditions. Security and happiness are correlated, when we feel secured from fear or in the material world, we feel happy (Sasson, 2011). It makes easier to be passionately involved and have more friends. Happier people are more attractive and happiness brings undying quest of life, Dhammananda (2011); Yang (2007). Happiness is also important because it changes the chemical in our body, enhance immunity and repair damage cells (Bekhet et al., 2008). One study conducted by the university of Nebraska identified that happiness positively impact human health. They concluded that satisfied and happy people are healthier even after two years follow up, Gazella (2009).

One of the most pertinent questions about happiness is that what makes people happy. One study was conducted in Denmark in 2008 which identified good relations and life philosophy is the most important factors of quality life. They concluded that wealth, position, work are not seem to be key to global quality of life and are not significant to self-assessed health (Gazella, 2009)

Scott (2011) stated that happiness at work and life's satisfaction are closely associated. Success and happiness goes hand in hand. Organizational success mostly depends on happiness at work and satisfaction at work because happy employees are creative, have low absenteeism problem, understand work better and can compete in challenging world, Pryce-Jones & Scott (2009).

In nutshell, happiness is important in our life and organization as happier the people, the more are they become attractive, energetic and creative in life and in the work field.

GNH PHILOSOPHY

The Gross National Happiness (GNH) philosophy has been operating on the idea of four bases: 1) sustainable socio-economic development 2) good governance 3) environmental conservation and 4) cultural preservation, Gurung (1999) & Thinly (2005). The “Global Happiness” agenda was unanimously adopted in the United Nation (UN) general assembly resolution 65/ 309 in 2011. Bhutan had organized the United Nation Happiness Conference in 2012 and with participation from 600 groups over the world (UN News Centers, 2012) and become well known in the globe for its famous GNH philosophy.

Ingredient to the happiness is defined in term of physical and subtle forms. Physical ingredients are related to materialistic like a good remuneration, a amusing office, munificent benefits which leads to job satisfaction. But "happiness factor" mostly depends on ethereal factors, such as respect, trust, and fairness.

GNH Questionnaires: The questionnaire use to measure happiness is a multidimensional in nature. The questionnaires are self-report and are close ended. Likert scale and Visual analog were used to measure happiness. People achieving 6 or more out of 9 domains are considered as happy according to the survey report, 2010 (Ura et al., 2012). The GNH Index 2010 has 9 domains and 33 indicators which are the predominant factors of GNH measurement (CBS, 2011).

RESEARCH OBJECTIVES

Against the background, the present study was undertaken with the following objectives

1. To measure the happiness of the employees of the selected organization as per the GNH index and to find the association with their productivity in work field. As many researchers have concluded that happiness and performance are closely related (Wright and Staw (1999). Our objective here is to check if there is any linear relationship exists between happiness and performance of employees at workplace.
2. As per the GNH index, there were 9 domains to measure the overall happiness of the employees. The second objective of our study was to find the association between some these domains with the employee’s productivity/ performance at work.

3. Blanchflower et al. (1993), Benin and Nienstedt (1983) all illustrated that happiness changes among various demographic segments. So, the third objective of our study was to find the relationship between various demographic characteristics with employees' self-reported happiness.

HYPOTHESES:

H1: There is no direct positive relationship between employee happiness and their performance at work.

H2: There is no significant difference between demography of the respondents and their happiness level.

H3: There is no direct positive relation between Mental health condition (positive & negative), psychological well-being, performance of government, health of the employees, times spend at work with performance of the employees.

RESEARCH METHODOLOGY

The research design adopted for this study is descriptive in nature. Relevant data has been collected from both primary and secondary source of information. The primary data was collected from the executives of the organization at the corporate office, Bhubaneswar as well as at the Smelter and CPP units at Angul, Odisha. The Secondary Data were collected from various journals, articles, research report etc. Judgmental sampling technique was used to extract samples from studied plant located in the Bhubaneswar city for data collection. The sample size is restricted to 201, of which 110 belonged to the corporate office and 91 belonged to the Smelter and CPP units at Angul. The participants were briefed about the purpose of the study. A structured questionnaire was administered to assess the happiness of the participants. The first part of the questionnaire was related to the demographics of the participants and respondents like name, gender, marital status, designation/grade and years experienced in the current grade. The remaining part of the questionnaire is based on the GNH questionnaire implemented by Bhutan with a few changes.

CALCULATION OF GNH:

The nine domains of GNH are equally weighted. This is because they are of equal importance, none can be permanently ranked as more important than others but each might be particularly important to some person or some institution at a given point in time.

As per the GNH index, two kinds of thresholds were used- happiness threshold and sufficiency thresholds. Sufficiency thresholds indicate how much an individual needs in order to enjoy sufficiency in each of the 33 cluster indicators. It asks how much enough to be happy is. Each of the indicators has a sufficiency threshold and each person in the survey is identified as enjoying sufficiency or not in each indicator.

The employees were divided into four sub sets by using three limits as per sufficiency limits in 50%, 66%, and 77% of the weighted indicators. This was used to identify the unhappy, narrowly happy, extensively happy, and deeply happy. The GNH Index was calculated from

Headcount ratio: percentage of people who are happy

Breadth: percentage of domains in which people who are not-yet happy enjoy sufficiency

$$\text{GNH} = 1 - \mathbf{H}_n \mathbf{A}_n.$$

The formulae can also be written as

$$\text{GNH} = \mathbf{H}_h + (\mathbf{H}_n \times \mathbf{A}_s), \text{ where}$$

\mathbf{H}_h : the percentage of happy people [$\mathbf{H}_h = (1 - \mathbf{H}_n)$]

\mathbf{A}_s : the percentage of dimensions in which the average not-yet-happy person enjoys sufficiency [$\mathbf{A}_s = 1 - \mathbf{A}_n$]

The happiness of the employees of the studied organization was calculated using Bhutan GNH index using the above formula but there was no attempt from the investigators side to measure the productivity/ performance of the employees. The studied organization has well-structured performance appraisal system to assess the performance of the employees for this study, the performance of the employees has been collected from the office from their records which was only verified before collection.

RESULTS AND FINDINGS:

Characteristics of the respondents:

- Among the 201 respondents, 179 or 89% were male and 22 or 11% were female.
- 186 of the respondents were married, 14 were unmarried and 1 was found to be divorced.
- 19 respondents were in the age group of 22-31 years of age, 54 were in 32-41, 57 were in 42-51 and a maximum of 71 were in the group 52-61 years of age.

- 127 respondents had an experience of 0-3 years in the current grade, 49 respondents had an experience of 4-7 years, 18 respondents had an experience of 8-11 years and only 7 respondents had an experience of 12 years or above in the same grade.

HAPPINESS MEASUREMENT:

$$\begin{aligned} \text{Happiness Index} &= H_h + H_n \times A_s \\ &= 0.8159 + (0.1841 \times 0.52) \\ &= \mathbf{0.9116} \end{aligned}$$

While analyzing various levels of happiness, it was found that majority of the respondents (56%) were found deeply happy in life and only 3% of the respondents were found unhappy in life while 15% and 26% of respondents were found narrowly and extensively happy in life respectively.

Happiness	Frequency	Percent
Unhappy	6	2.99
Narrowly Happy	31	15.42
Extensively Happy	52	25.87
Deeply Happy	112	55.72
Total	201	100.0

Table 1: Levels of happiness

Grade-wise distribution of employee's happiness levels:

Ranks	Deeply Happy	Extensively Happy	Narrowly Happy	Unhappy
E0	5	2	0	1
E1	9	3	0	1
E2	4	3	2	0
E3	22	9	5	3
E4	19	8	8	0
E5	11	15	2	0
E6	32	8	13	1
E7	5	3	1	0
E8	5	1	0	0

Table 2: Grade-wise distribution of employee's happiness levels

Employees were distributed according to their job positions and their level of happiness. There couldn't be found any relationship between the relative rank/ position of employees and their level of happiness in life. It simply means higher job position doesn't lead to higher level of happiness among employees.

Contribution of all domains in unhappiness of the employees:

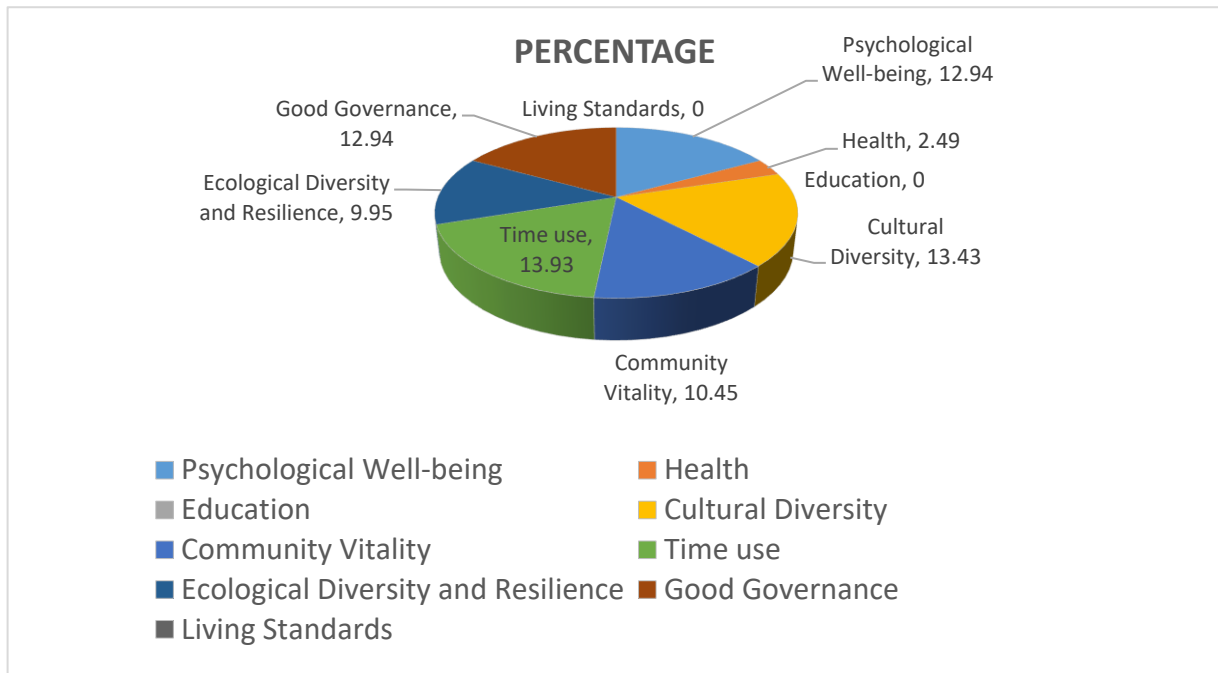


Fig 1: Percentage Contribution to Unhappiness

Out of the 9 domains, time use was the highest contributor to unhappiness with 13.93%. Other major contributors were psychological well-being and good governance. Education and living standards were the lowest contributors to unhappiness with the entire population achieving sufficiency in these two domains.

H1: There is no positive significant relationship between employee happiness and their performance at work.

Spearman's rho	GNH	Performance
Correlation Coefficient	1.000	.017
Sig. (2-tailed)	.	.810
Correlation Coefficient	.017	1.000
Sig. (2-tailed)	.810	.
N	201	201

Table 3: Correlation between employee’s happiness and performance

There could not be found any relationship between happiness of the employees of the studied organization with their performance at work. Hence we could not reject the null hypothesis and it can be concluded that happiness do not significantly related to performance at work.

H2: There is no significant difference between demography of the respondents and their self reported happiness level:

Demographic characteristics	Pearson Chi-square Value	df	Significance level
Age	103.563 ^a	117	.808
Marital status	6.331 ^a	6	.387
Sex	2.040 ^a	3	.564
Job position (Grade)	33.684 ^a	24	.090
Income	7.757 ^a	9	.559

Table 4: Chi-square table

No significant relationship could be established between age, marital status, sex, income and job position with self reported happiness at 95% confidence level. It means happiness is independence of demography of the respondents. Hence Null hypothesis is accepted.

Hypothesis 3:

Mental health condition and performance of the employees:

Spearman's rho	Correlation Coefficient	N	Sig. (2-tailed)
Ability to concentrate	-.024	197	.737
Helpful to others	.072	197	.312
Capable of making decisions	-.086	197	.231
Able to enjoy day-to-day activities	-.003	197	.967
Able to face problems	-.050	197	.482
Feeling reasonably happy	.020	196	.780

Table 5: Spearman's coefficient

None of the positive mental health conditions are related to performance of the employee. Hence we accept null hypothesis at 95% confidence level and can conclude that positive mental health confidence do not significantly related to performance.

Negative Mental Health and performance:

Spearman's rho	Lose sleep over worry	Constantly under strain	Unable to overcome difficulties	Feeling unhappy and depressed	Losing confidence in self	Thinking of self as worthless
Correlation Coefficient	.084	.066	.108	.113	.071	.018
Sig. (2-tailed)	.244	.359	.130	.116	.323	.804
N	196	196	197	195	197	197

Table 6: Spearman's coefficient

There is no relation between Negative mental health conditions and Performance of the employee. Hence we accept null hypothesis at 95% confidence level and can conclude that Negative mental health confidences do not significantly related to performance.

Psychological well-being:

Aspect	Jobs/assignments	Standard of living	Relationship with family members	Relationship with colleagues	Health	Work-life balance
Very Dissatisfied	0	0	0	0	0	2
Dissatisfied	8	1	0	4	5	30
Neither satisfied nor dissatisfied	24	8	11	27	35	42
Satisfied	142	164	121	137	136	108
Very Satisfied	27	28	69	33	25	19
Mean Score						

Table 7: Satisfaction of Respondents in Various Domains:

Psychological Well-being and performance:

Spearman's rho	Jobs and assignments	Standard of living	Relationship with family members	Relationship with colleagues, superiors & subordinates	Health	Work-life balance
Correlation Coefficient	.093	.108	.175*	.125	.071	.038
Sig. (2-tailed)	.188	.127	.013	.077	.315	.593
N	201	201	201	201	201	201

Table 8: Spearman's Coefficient table

Out of the six parameters of psychological well-being, it is only the Relationship with family members has significant relationship with performance and rest other parameters do not have any influence on performance of the employees.

Health Condition	Frequency
Poor	11
Fair	67
Good	100
Very good	21
Excellent	2
Total	201

Table 9: Health conditions of the employee**Health and Performance of the employees:**

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.219 ^a	12	.597
Likelihood Ratio	10.316	12	.588
Linear-by-Linear Association	.300	1	.584
N of Valid Cases	201		

Table 10: Chi-Square value of Health and performance

Chi-square tests show that there is no significant relationship between health and performance.

Ecological issues in Living Environment of Respondents:

	Water pollution	Air pollution	Noise pollution	Waste disposal	Littering	Landslides	Floods	Soil erosion
Major concern	77	103	80	76	78	35	40	44
Some concern	80	69	86	77	81	29	42	43
Minor concern	28	20	19	21	18	25	25	30
Not a concern	16	9	16	27	24	112	94	84

Table 11: Ecological issues in Living Environment of Respondents

33.2% of the respondents reported major concern in the ecological issues, 31.5% reported some concern, 11.5% reported minor concern and 23.8% reported not a concern.

Performance of government and employee's happiness.

Pearson's correlation	Creating Jobs	Reducing gap between rich and poor	Fighting corruption	Preserving culture and tradition	Protecting environment	Providing educational needs	Improving health services
Correlation Coefficient	.326**	.340**	.305**	.571**	.426**	.471**	.415**
Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000
N	201	201	201	201	201	201	197

Table 12: Pearson's correlation -Performance of government and employee's happiness

There was a significant correlation between happiness and all the 6 items taken to measure the performance of government over the last few years at 99% of confidence level. Positive correlation is found to exist between government performance and happiness i.e. if the performance of government in various aspects like creating jobs, improving health care services, providing education etc. is good, happiness among the respondents is also high.

Hours spend in work and Performance & Happiness:

Pearson Coefficient	Beta	t	Sig.
Happiness	.080	1.126	.261
Performance	.029	.403	.687

Dependent variable: Time spend at work

Table 13: Relationship between times spends at work and employee's performance and happiness.

There could not be found any relationship between times spends at work n and performance and time spend at work with happiness. Hence both happiness and performance are independent to duration of work. We accept null hypothesis at 95% confidence level.

CONCLUSION:

The Gross National Happiness Index can be said as a living experiment which tries to depict the real image or color of people's life and is much different than popular economic parameters like GNI per capita. It reflects the fact that happiness is a deeply personal matter and people will rarely agree on a set definition.

From the research it was found that 55.72% of respondents are deeply happy, 25.87% of respondents are extensively happy. Those who achieve sufficiency in less than half of domains are considered not-yet-happy. 18.41% of the population is found to be not-yet-happy in which 15.42% of respondents are narrowly happy and 2.99% of respondents are unhappy.

The happiness index was found to be 0.9116 which is considerably high and shows that the respondents are quite sufficient in the 9 domains used for the research as per the Bhutan's happiness studies. The domains contributing most to unhappiness were time use, psychological well-being and good governance. They were followed by cultural diversity, community vitality and ecological diversity. The domains contributing least to unhappiness were living standards and education which shows that the target population is satisfied with their quality of lives and their level of education. Health also contributed very little to unhappiness with a mere 2.48% which shows that the population enjoys quite good health.

Among the deeply happy population, 66% were equal to or above the age of 42. Looking among the deeply happy population as per grade, it is observed that 29% of the population were of the

grade E6 followed by grade E3 which constitutes 20% of the population. The age group of 32-41, on the other hand, contributed the maximum i.e. 50% of the unhappy population.

The people who are not-yet-happy are an important policy priority and thus it is important to look at the areas in which they enjoy sufficiency and the areas in which they still lack sufficiency. Although many researchers have concluded that happiness and performance are closely related, Wright and Staw (1999). But in our study, the result is quite different. It has been found that happiness (as per Bhutan's GNH index) is independent to employees performance. It could be concluded that employees productivity depend on so many other factors (unknown/ not studied) and may not depends on the happiness of the employee in general. So, we go along with the well-known reviews of the literature which established firmly that worker happiness did not necessarily lead to productivity (e.g. Brayfield and Crockett, 1955; Vroom, 1964).

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Impact of Glass Ceiling Factors on Women Career Development in Banking Sector: evidence from Non-state Banks in Colombo District

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Abstract

Despite banking industry being a female-dominated industry, women are still under-represented in management and senior management levels. This study is mainly focused on the effect of Glass Ceiling factors on Women's Career Development in non-state banking industry in Colombo District. The study is tailored to answer two research questions; why are women under-represented in senior positions than men? and how does the Glass Ceiling Factors(GCF) effect, Career Development of women? The study was guided by three objectives focusing on executive female employees; (1) 'Identify their current level of career development', (2) 'Assess the existing level of GCF and (3) 'Identify the effect of GCF in Women Career Development'. All the women executives who were currently employed in head offices of four non-state licensed commercial banks in Sri Lanka were selected purposively for the sample of the study. The study has been completed with an empirical survey which was conducted using a self-administered questionnaire and the sample consisted of 231 women executives. According to major findings of the study, while Individual Factors have a significant positive effect on Women's Career Development, Organizational Factors have a significant negative effect. In view of the findings, recommendations have been made towards promoting Career Development of women by mitigating the Glass Ceiling. Finally, valuable suggestions for further studies and limitations of the study have been outlined.

Key words: Cultural Factors, Glass Ceiling Factors, Individual Factors, Organizational Factors, Women Career Development

INTRODUCTION

Background of the Study

Overall women are well represented in the workforce. The most significant feature of the global labour market in the last half of the twentieth century, is increasing participation of women (Black, Gregerson, Mendenhall and Stroh, 1999; Caligiuri and Tung, 1999). Some studies revealed that during the last two decades in the global labour market there has been an increase in the proportion of women at first-line and middle-level management

positions, resulting from the activities of the women's movement, policies of the political system, and corporate equal opportunity initiatives. However, according to Meyerson and Fletcher (2000) women at the highest levels of business are still rare. They comprise only 10% of senior managers in Fortune 500 companies; less than 4% of the uppermost ranks of CEO, president, executive vice president, and Chief Operation Officer (COO); and less than 3% of top corporate earners. The average share of senior management jobs held by women is just 21% globally; just 9% of CEO positions are held by women (Strank and Dyrchs, 2012). There is strong evidence of the under-representation of women in leadership positions in many countries all over the world. Population of women executives in BRIC (Brazil, Russia, India and China) states is 26% and in south East Asia's economies, it's 32 % (Strank and Dyrchs,2012). Grant Thornton's findings (2012) shows that women occupy only about 13 % of senior management jobs in Germany and 17 % in U.S.A. and in Japan, only 5 % of top executives are females.

In 2014, the estimated economically active population in Sri Lanka is around eight million and about five million (64.5%) of them were males. Female participation rate in Sri Lanka is around 35 percent (35%) (Bombuwela and Alwis, 2013). However, Ruth (2008) has reported that in Sri Lanka, women provide a large portion of Sri Lanka's factory workforce. According to the employment statistics of corporations, statutory boards, Authorities and public private companies in Sri Lanka, (Department of census and statistics-2014) women are heavily concentrated in certain occupation categories such as skilled agricultural and fishery workers category and professional category.

There was a significant difference between the female and male senior officials and managers in Sri Lanka according to the annual report of labour survey-2014. Among senior officials and managers, 66,813 (30%) are female and 166,284 (70%) are male. When considering the statistics related to employment of clerks and related workers, there is no significant difference between number of male and female employees. (Male – 31,310 and female – 33,926). The gender gap in management is noticeable. This compelling situation is explained in literature as “Glass Ceiling” (GC). Simply the term “Glass Ceiling” refers to invisible or artificial barriers that prevent women from advancing past a certain level (Reich , 1997).

The basic purpose of this study is to identify the effect of Glass Ceiling in women career development in Banking Industry in Colombo District. The study also attempts to identify some factors that affect on women developing their career to the fullest potential.

Problem Statement

Globally, female labour force participation has increased. Women around the world have been moving steadily in to occupations, professions and managerial jobs previously reserved for men (Wirth, 2001). But it is commonly believed that women have less career development opportunities than men (Afza and Nawaz,2008). As mentioned before too, women appear to be under re-presented in senior positions, suggesting they may face a “Glass Ceiling” (Blank, 1996). “Glass Ceiling” refers to invisible barriers that impede the career development of women. It also refers to situations where the advancement of a qualified person within the hierarchy of an organization is halted at a particular level (Bombuwela and De Alwis, 2013).

1. Why are women under-represented in senior positions than men?
2. How does the “Glass Ceiling Factors” effect on Women Career Development?

Objectives of the study

1. To identify the existing level of career development in the non-state banking sector.
2. To assess the existing level of GCF.
3. To identify the effect of Glass Ceiling factors on Career Development of females in the banking sector.

Justification of the study

Female employees in the non-state banking sector in Sri Lanka have been declining during the past few years (Gunawardena, 2010). The table No: 1.1 elaborates the evidence adopted from the annual reports of nine large Commercial banks (according to Fitch ratings) individually with the comparisons of the male and female work force participation in the Board of Directors, Corporate level and Senior Management Level.

According to the statistics of nine large banks, 78% of Board of Directors are male and 22% only female. In the corporate level management, 79% of managers are male and 21% of them are female. When it comes to gender difference in Senior Management level, 75% of them are male and 25% of them are female. The relationships between the two genders are comparatively rocket-hiking. Therefore it is evident that there is an existence in the Glass Ceiling Effect in the banking industry. In Sri Lanka as this issue has not been well

addressed in the commercial banking sector and as it still prevailing this research would enable to reduce the glass ceiling effect. Moreover primary research findings proved this point by revealing that there are invisible barriers associated with the women participation in senior positions of non-state Banking sector.

Table 1: Gender difference in senior positions in Sri Lankan banks

	Board of Directors	Percentage	Corporate Level Managers	Percentage	Senior Level Managers	Percentage
Male	65	78	138	79	213	75
Female	18	22	36	21	70	25

(The related secondary data was found at the annual reports of the nine listed banks to analyze the association between the two genders (Annexure No: 01)).

Research Hypotheses

In previous research studies, different factors under Glass Ceiling (GC) have been identified. Based on those findings Individual Factors, Family Factors, Organizational Factors and Cultural Factors about women are considered as the factors under glass ceiling factors in this study. Previous literature has proved that Individual Factors have an effect on career development of women (Bombuwela and Alwis, 2013). There is empirical evidence that Individual Factors act as a glass ceiling factor (Okurame, 2014). Then, the hypotheses were proposed as:

Individual Factors have an effect on Women Career development

H₀: Individual Factors have no effect on Women Career Development

H_{1a}: Individual Factors have an effect on Women Career Development

Child care and Spouse care have an effect on Women Career Development

H₀: Child care and Spouse care have no effect on Women Career Development

H_{1b}: Child care and Spouse care have an effect on Women Career Development

Elder care and House work have an effect on Women Career Development

H₀: Elder care and House work have no effect on Women Career Development

H_{1c}: Elder care and House work have an effect on Women Career Development

Organizational Factors have an effect on Women Career Development

H₀: Organizational Factors have no effect on Women Career Development

H_{1d}: Organizational Factors have an effect on Women Career Development

Cultural Factors have an effect on Women Career Development

H₀: Cultural Factors have no effect on Women Career Development

H_{1e}: Cultural Factors have an effect on Women Career Development

METHODOLOGY

Research Design

To undertake the study, a cross sectional research design was used: such as survey method, structured observation, content analysis, official statistics and diaries. Among them, Survey is the most popular method among business and management studies and associated with deductive approach. Survey research is often used assess thoughts, opinions and feelings. Survey allows collecting large number of standardized data from a sizable sample that allows easy comparison. One can describe the attitudes of the population from which the sample was drawn. This design was more appropriate in providing an in-depth understanding of the effect of Glass Ceiling factors on Women Career Development. The survey was conducted by using a self-administered questionnaire, which was hand delivered to the respondents

Population and Sampling

The population of this research comprises of the licensed commercial banks in Sri Lanka. The annual report of Central Bank of Sri Lanka was used to select the list of licensed commercial banks. There are twenty five (25) licensed commercial banks in Sri Lanka and only four banks namely; Hatton National Bank (HNB), Sampath Bank , DFCC Bank and National Development Bank (NDB) were selected purposively for the current study . The selected banks of this study are recorded as “The large banks” according to Fitch rating. Fitch Ratings is one of the "Big Three credit rating agencies" and it is one of the three nationally recognized statistical rating organizations (NRSRO) designated by the U.S. Securities and Exchange Commission in 1975 (Sri Lankan Banks Report Card, 2017)

The sample of the study covers the executive level women employees who are currently employed in Colombo District in the said 4 banks’ head offices. Head offices were selected as a range of executive job titles can be easily accessed. Deciding a sizable sample is very

significant to ensure the accuracy of the research. Therefore, the researcher decided to focus on the all women employees who are employed in head offices of above four banks as the population (628 respondents), to decide the sample size. The Sample Size Table from the Research Advisors presents the results of one set of calculations done by using a formula for calculating the required sample size. It has used by the researcher to determine the appropriate sample size of this study.

According to sample size table from the Research Advisors 248 respondents should be selected by using simple random sampling method from four banks as mentioned above. Researcher has distributed 280 questionnaires among women executives who are randomly selected, but at the collection of distributed questionnaires, 231 questionnaires only received. Therefore researcher used 231 questionnaires for the analysis. Response rate of the survey is 82.5 %. According to Mangione (1995) the response rate of this survey is a 'very good' rate. Following table indicates the number of respondents selected from each bank.

Table 2 : Population and Sample

Name of the Bank	Population	Sample
Sampath Bank PLC	212	79
Hatton National Bank (HNB)	200	77
DFCC Bank	136	45
NDB	80	30
Total	628	231

(Source: Survey Data)

Research Strategy

Quantitative and qualitative terms are broadly used by the management and business research studies in differentiating the data collection techniques and procedures of the data analysis (Saunders et al., 2012). The general factor of differentiating these two is numeric or non-numeric data. Accordingly, qualitative research is generating non-numeric data which are collected predominantly any technique such as interviews and analyze data using categorizing approach (Curran and Blackburn, 2001).

The present study is focused on the quantitative research method and collects numerical and standardized data from the sample in order to have a generalized conclusion on how

glass ceiling effect on women career development. Quantitative strategy served best for this study because the quantitative studies believe that the reality is measured validly and reliably using specific principles which enables standardization of data and generalization of the research findings (Onwuegbuzie & Leech, 2005).

Conceptual Framework

The main idea emphasized by this conceptual framework is, Glass Ceiling Factors influence the Women Career Development. The main focus of the study is career development experienced by female professionals. Because there is a mismatch between women access to education training qualifications and the final outcomes of women's positioning and distribution in the career hierarchy.

Relatively fewer women are found in senior and middle career positions. The relatively slow pace at which women advance in their careers is due to the phenomenon of *glass ceiling*. These are the barriers – real or perceived that women face compared to their male counterparts when advancing in their careers.

Independent variables

This study mainly focuses on the impact of Glass Ceiling (GC) factors on Women Career Development (WCD). GC may affect as the independent variable. WCD is the dependent variable. In early research studies, different factors under glass ceiling have identified. Based on those findings, individual factors (IF) (Okurame, 2014), family factors (FF) (Cutler and Jackson 2002; Carnes and Radojevich-Kelley 2011), organizational factors (OF) (Cooper 2001; Knuston and Schmidgall 1999) and cultural factors (CF) (Bombuwela, P. M. and De Alwis A. C; (2013)) are considered as the factors under glass ceiling in this study.

The model using in the study is as follows:

$$WCD = f (GC)$$

$$WCD = f (IF, FF, OF, CF)$$

WCD = Women Career Development

IF = Individual Factors

FF = Family Factors

OF = organizational Factors

CF = Cultural Factors

Individual factors: Individual factors reflect the extents to which individual barriers that coming from themselves influence the outcome. Individual factors will be measured by using two items.

Self-efficacy beliefs (Schwarzer and Jerusalem, 2000)

Personal growth initiatives (Robitschek, 1998)

Family Factors: Family factors reflect the extent to which relation causes affect to the performance of employee. Therefore, family factors will be measured by four items.

Child Care- includes Caring for Child best interests, education and wellness

Elder Care - caring aging relatives by providing meals, showering, helping to clean their clothes, seeking their health, bringing them for the medical check-ups, providing emotional support and traveling to the elder's residence

Spouse Care - Caring spouse needs, health and his/her career

House Work - includes food preparation, settling utility bills, maintenance and keeping the pace flowing smoothly around the home

Organizational Factors:The organizational factors reflect the extent to which the employees see the organization as being responsible for lack performance of employee or the extent to which organizational barriers that coming from organizational structure and practices influence the employee development. Organizational factors are measured by three items.

Management Policies and practices (Guy,2003 ; Rose and Hartmann, 2004 ; Blau et al., 1998 ; Newman and Matthews, 1999 ; Dex and Joshi ,1999)

Senior Management Beliefs (Coe,1992 ; Charlesworth,1997 ; Wajcman,1998 ; Metz,2003)

Organizational Structure (Baruch, 2004 ; Acker, 1990 ; Hartmann 1979)

Cultural factors: The cultural factors reflect the extent to which the beliefs, traditions, influence the employee development and will be measured by two items.

Attitudes and behaviours (Dale et al., 2005; Njiru, 2013)

Male dominate culture (Kanter,1977; Reskin and Hartmann, 1986; Acker, 1990)

Dependent Variable – Career Development

In this study career is defined as “a sequence of related work experiences and activities, directed at personal and organization goals, through which a person passes under their control and partly under that of others (Hall, 1986,1990)

Career development is defined as “the life long process of fostering and cultivating the shape of the individual's working life so as to make best use of inherent talent, skills, knowledge and interests for that person's and employer's benefit and also to match it as closely as possible to other aspects of the person's life.

In this study women career development is measured by following aspects;

Equal treatment in recruitment and selection process

Timely promotions

Equal opportunities in leadership roles

Salary equity

Information access

(Fried et al, 1996)

According to Fried et al (1996) Equal career opportunities (including equal treatment in recruitment and selection process, timely promotions), pay equity and networking are the main considerations in the women career development. Therefore based on the literature survey, three main considerations were selected of Fried's study to measure the women career development.

The conceptual framework upon which the study is based on depicted in figure 2.1

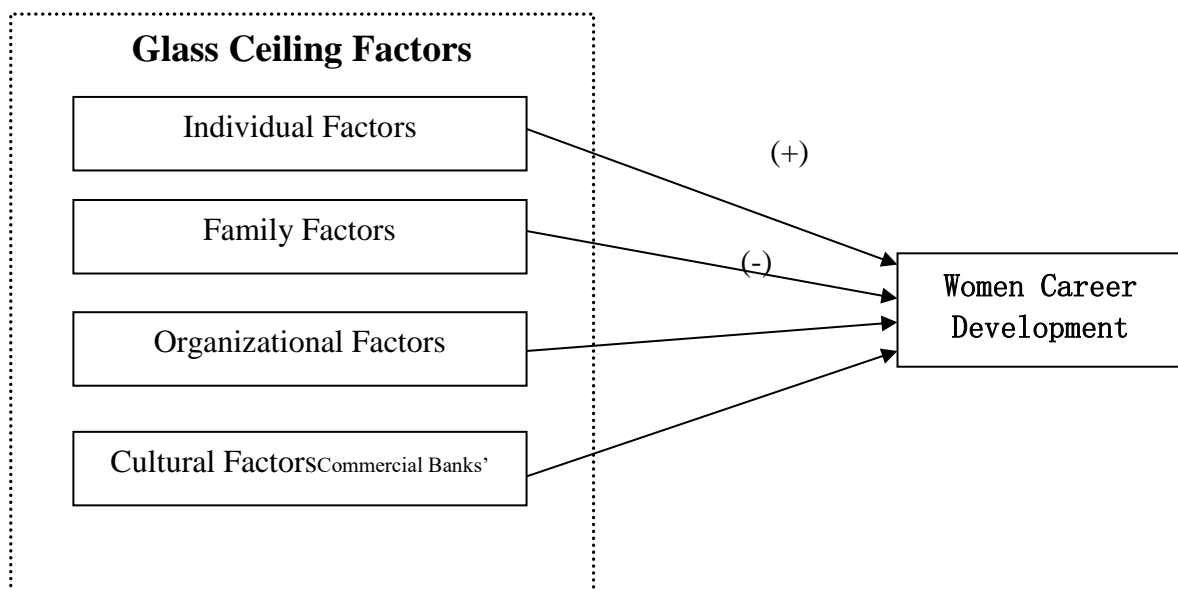


Figure 1: Conceptual Framework

Source: Developed by the Researcher

Data collection

Secondary Data: The secondary data are available in different sources such as textbooks, journals, articles, research papers, reviews in the internet and newspapers. This study considers secondary data in relation to glass ceiling, factors contributing glass ceiling, women career development and how glass ceiling effect on women career development in terms of theories, concepts and existing empirical evidences. These were extracted from published sources such as journals, articles and research papers and presented under literature review chapter by analyzing them critically.

Primary Data : This research study relies upon the survey method for collection of data; the questionnaire based survey has become one of the most widely used techniques. This is mainly because it allows collecting large number of quantitative and standardized data, which can be statistically analyzed. Observations were not considered as it highly associate with qualitative data collection, which use for complex natural social phenomenon (McBurney and White, 2010). On the other hand, interviewing methods also associated with qualitative inquiries in collecting qualitative data. Therefore it would not appropriate for the present study as it was focused on collecting quantitative data. Questionnaire was the most effective data collection method as it was free from the bias of the researcher (Robson, 2002). Compared to other techniques, questionnaire was effective because a sizable sample was used to collect data thus the results were more dependable and reliable.

A self-administered questionnaire was developed as the survey instrument (Annexure No : 03). The questionnaire is consisted of two parts namely part A and part B. Part A is the personal profile. The respondents' , biographical information was collected to establish a profile of the sample group in relation to gender, marital status, age, educational qualifications, position, average in- come and length of service. These factors are valuable factors in Career Development (Powell & Butterfield, 1994; Okurame & Balogun, 2005; Sullivan & Arthur, 2006; Grimland, Vigoda-Gadot & Baruch, 2012; Okurame, 2012). Findings in the literature showed that age influences the extent to which an employee may be able to resist social pressure regarding the usefulness of hierarchical promotion (Sullivan, Martin, Carden & Mainiero, 2003). Conversely, research findings show that employees with higher levels of education, status and work experience undertake more development activities and pay greater importance to Career Development than their counterparts at lower levels (Cheramie, Sturman & Walsh, 2007; cited in Segers, Inceoglu, Vloeberghs, Bartram & Hendericks, 2008). Therefore, it is logical to expect that the demographic data of employees would influence their perceptions of career development. Part B consists of questions based on the four GC factors and the three WCD indicators to measure the GC and WCD with five point scale ranging. After formulation of the preliminary questionnaire, for the purpose of testing the reliability, accuracy and validity

of those questions it was subjected to a pilot survey. According to the pilot survey, researcher could find five independent variables instead of four. Researcher has used the factor analysis (Field, 2005) in SPSS to examine this.

Data Analysis

Ms- Excel would be used to convert the data which were gathered by using the questionnaire in to an analyzable format. Then the SPSS software was used in order to analyse the data. Following analysis were done;

1. Testing reliability - The reliability of the questionnaire is very important since it effects on the data analysis section. This is done through analysing the Cronbach's Alpha for all the numerical data (data related to 5 point likert scale). To accept the data as reliable and internally consistent, the Cronbach's alpha value should be greater than 0.70.
2. Frequency analysis – frequency, percentage, cumulative percentage are analysed for the demographic factors of the sample.
3. Descriptive statistics – this is used to test the arithmetic average to measure the level of existence of glass ceiling variables and women career development variables. Descriptive statistics are used mainly to analyse the mean and standard deviation of the independent and dependent variable.
4. Pearson Correlation - Correlation is the technique for investigating the relationship between two quantitative and continuous variables. Correlation is used to measure the relationship between each glass ceiling variables and women career development. Pearson's Correlation Coefficient is usually signified by r (rho), and can take on the values from -1.0 to 1.0. Value of +1.0 represents a perfect positive correlation. By contrast, a value of -1 represents a perfect negative correlation and a value of 0 meaning the variables are perfectly independent (Saunders et al, 2012).

Formula used for Correlation

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where;

x represents the independent variables of this study. Individual factors, Family factors, Organisational factors and Cultural factors separately considered for the formula.

y represents the dependent variable; that was Women Career Development

n = No of pairs of scores

Σxy = Sum of the product of paired scores

Σx = Sum of x scores

Σy = Sum of y scores

Σx^2 = Sum of squared x scores

Σy^2 = Sum of squared y scores

5. Linear Regression - Regression analysis generates an equation to describe the statistical relationship between the two variables. Present study used linear regression to predict the relationship of the women career development based on glass ceiling factors. Since this study had multiple independent variables, multiple regression analysis was applicable. Below formula has used to analyse the multiple regression

$$\text{Women Career Development} = \beta_0 + \beta_1 \text{Individual Factors} + \beta_2 \text{Family Factors} + \beta_3 \text{Organisational Factors} + \beta_4 \text{Cultural Factors} + \text{error term}$$

Table below summarise the approach used to achieve the research objectives through the statistical data analysis;

Table 3: Statistical approach of achieving the research objectives

Objective	Tool of Analysis
Identify the existing level of career development	By using descriptive statistics <ul style="list-style-type: none"> • Mean • Standard deviation
Assess the existing level of glass ceiling factors	By using descriptive statistics <ul style="list-style-type: none"> • Mean • Standard deviation
Identify the effect of Glass Ceiling factors on Women Career Development	Survey Questionnaire included Likert scale statements on: <ul style="list-style-type: none"> • Independent Variables – factors of glass ceiling • Dependent Variable – women career development <p>And measure them statistically using multiple regression</p>

Validity and Reliability : This section presents the validity and reliability of data collection instrument measures.

Issues of reliability and validity in this study will be addressed using guidelines prescribed by Smaling (1992).

Validity : Zikmund (2003) defines validity as the ability of a measuring instrument to measure what was intended to be measured. According to (Sekaran, 2003), content validity is a judgmental act where experts check whether the items represent the construct which is being studied as well as the wording, formatting and scoring of the instrument. Two steps were taken to ensure validity. Firstly, wherever possible, research questions from prior studies were used to improve the validity of the research instrument, in particular (Hall, 2000). Secondly, the questionnaire was sent to selected academicians as well as 10 randomly selected respondents for perusal and to assess the structure, length, and appropriateness of the questions used.

Reliability : Reliability is the degree to which measures are free from error and therefore yield consistent results (Zikmund, 2003). According to Sekaran (2003), “reliability analysis is conducted to ensure that the measures of variables have internal consistency across time and across the various items that measure the same concept or variable”. Reliability evaluates accuracy of the measures through assessing the internal stability and consistency of items in each variable (Hair et al., 1998). The extent to which the instrument provides the same results on subsequent administration, known as reliability, was statistically obtained. Reliability was measured in this study using Cronbach’s alpha coefficients (Cronbach’s $\alpha \geq 0.7$). The requirements for validity was ensured by preparing a comprehensive register of data, notes about relevant events impacting on data gathering and interpretation, the use of member checks and providing an accurate description of the research process (Smaling, 1992).

Limitations

The main limitation of this study was related to the difficulty of reaching women executives in mid-level and higher-level positions. The researcher has distributed 280 questionnaires among female executives currently employed in licensed commercial banks in Colombo District, but only 231 questionnaires found which are filled successfully. Out of 49 respondents who have not responded to the questionnaire, 53% of them are in Senior management level, 33% of them are in middle level Management and 22% of them are in Executive levels. And again, out of nine large banks (Fitch Ratings) in Sri Lanka, only four banks allowed researcher to gather data.

The topic of “Career Development” can be discussed with a broader sense. It is wider & highly complex area. And also the data used in this study cover approximately the period up to the year 2018; this is valid only to this particular period. Finally this study deals with Glass Ceiling on Women Career Development rather than a deep study on Career Development.

RESULT

The percentages of missing value were less than 10%. Little's MCAR test, was used to check whether the missing data was random or not. The null hypothesis is that the missing data is randomly distributed. Chi-Square = 245.204, DF = 282, Sig. = .945 implies that missing data is randomly distributed. Therefore as a solution for missing values series, mean values were replaced.

All questions were theoretically examined and reviewed in a pilot study the fitness of each question was proved, the correctness of semantic expressions was examined, and the appropriateness of phrasing checked. By doing so, content validity was ensured. All variables are unidimensional due to the requirements of Initial Eigenvalue greater than 1, Items loaded to one factor, total variance explained of variable was greater than 0.5 and Factor loading values fulfilled a valued greater than 0.5. This indicates that the theory related to all variables after removal of N1, is proved by research respondents.

All KMO values are greater than 0.5. Likewise, all Sig values of Bartlett's Test also persistently maintain the condition of values that are lesser than 0.05. After removing N1, composite reliability (CR) is greater than 0.7 and the AVE values are above 0.5 except Individual Factors. But other requirements of validity and reliability of individual factors are acceptable. Hence the researcher could safely conclude that the validity of this research lied at a higher position with the omission of unsuitable questions (N1). Cronbach's Alpha values of all variable are greater than 0.70. All variables are valid and reliable after removing N1.

Mean value of Women Career Development was between 2.331 to 3.66. This brings into light that existing level of Women Career Development is at a moderate level. Mean value of Individual Factors was between 3.66 and 5. This brings into light that the existing level of Individual Factors such as Self-Efficacy beliefs and Personal Growth Initiatives are at a higher level. Mean value of Child care and Spouse care was between 3.661 and 5. This brings into light that the existing level of Child Care and Spouse care are at a higher level. Mean value of Elder care and Housework was between 3.661 – 5. This brings into light that the existing level of Elder care and Housework are at a higher level. Mean value of Organizational factors was between 2.331 – 3.66. This brings into light that existing level of Organizational factors is at a moderate level. Mean value of Cultural Factors was

between 2.331 to 3.66. This brings into light that existing level of Cultural Factors is at a moderate level

Individual Factors have significantly positive effect on Women Career Development. This indicates that there are positive effects of Self-efficacy beliefs and Personal growth initiatives on Women Career Development. . ‘Child care and spouse care ‘and ‘Elder care and Housework’ have no significant effects on Women Career Development. Organizational Factors have significant negative effect on Women Career Development. This indicates that there are negative effects of Management Policies and practices, Senior Management Beliefs and Organizational Structure on Women Career Development. Cultural Factors have no significant effect on Women Career Development. The Regression model requirements and assumptions are fulfilled validating all the models.

Findings

The aim of this research was to identify the effect of Glass Ceiling Factors on Women Career Development. Four licensed commercial banks were selected which fall under the category of ‘Large Banks’ according to Fitch ratings in Sri Lanka. And it was administered in Colombo since all the commercial banks have their head offices located in Colombo. The study is limited to 231 female executives who are employed in banking industry in Colombo District above 30 years of age. There were three objectives in this study. They are as follows,

Focusing on executive female employees;

- Identify the existing levels of Career Development

- Asses the existing level of Glass Ceiling Factors

- Identify the effect of Glass Ceiling Factors on Women Career Development

To achieve these objectives, data was personally collected through a self-administrated questionnaire. First objective of the study was to identify the existing level of Career Development. Based on the literature survey done three main considerations of Fried’s study (1996) were used to measure the Women Career Development. They are namely Equal Career Opportunities, Pay Equity and Networking.

According to the data analysis, the Mean value of Women Career Development was between 2.331 to 3.66. This brings into light that existing level of Women Career Development is at a moderate level. Therefore the first objective of the study was achieved.

Second objective of the study was to assess the existing level of Glass Ceiling Factors. There are five Glass Ceiling Factors. According to the data analysis, mean values of Organizational Factors and Cultural Factors were between 2.331 and 3.66. This brings into light that the existing level of Organizational Factors such as 'Management Policies and practices', 'Senior Management Beliefs' and 'Organizational Structure' are at a moderate level. And again the existing level of Cultural Factors such as 'Attitudes and beliefs' and 'Male dominated culture' are at a moderate level. Mean values of 'Individual Factors', 'Child Care and Spouse Care' and 'Elder Care and Housework' were between 3.661 and 5. This brings into light that the existing level of Individual Factors such as 'Self-efficacy beliefs' and 'Personal Growth Initiatives' are at a high level. This also indicates that the existing levels of 'Child Care and Spouse Care' and 'Elder Care and Housework' are also at a high level.

Third objective of the study was to identify the effect of Glass Ceiling Factors on Women Career Development. According to the findings, Individual Factors have significant positive effect on Women Career Development. This indicates that there are positive effects of Self-efficacy beliefs and Personal growth initiatives on Women Career Development. Organizational Factors have a significantly negative effect on Women Career development. This indicates that there are negative effects of Management Policies and practices, Senior Management Beliefs and Organizational Structure on Women Career Development. According to the findings of correlation analysis, the demographic factors such as Education Level, No of dependents and the Income level have positive significance relationships with Women Career Development. Out of six demographic factors, Education level, No of dependents and the Income level are supportive to the Career Development female executives.

According to the results of multiple regression analysis, 49.5% variation in 'Women Career Development' can be explained by two independent variables namely Individual Factors and Organizational Factors. When analyzing all these factors it can be said that all the objectives of this study were achieved.

Recommendations

The findings reported above have implications for the career development of female executives who are currently employed in non-state commercial banks in Colombo district. The study acknowledges that to some extent the top level managers of selected commercial banks have put some effort in using friendly human resource policies. However a lot more

can be done to make the bank a better employer to its female executive employees' development. According to the findings of the study individual factors have positive effect on Women Career Development. Individual Factors reflect to which extent individual conditions that coming from themselves as lack of confidence, personal traits and inability to sell themselves influences to the career development. In this study, Individual factors were measured by using two indicators namely Self-efficacy Beliefs and Personal Growth initiatives. Self-efficacy reflects an individual's judgment of individual capability to do well in a range of situations or tasks. Mastery experiences are the most effective way to boost self-efficacy because people are more likely to believe they can do something well if it is similar to what they have done well (Bandura,1994).

Therefore the study recommends developing self-efficacy by encouraging management to use mentoring for women executives (Social Modeling). Because many female executives who have responded to the questionnaire, describes self-limiting beliefs and lack of self-confidence, which can result in them delaying going forward for promotion until they feel completely ready, have strong evidence of all the competencies and are confident that they will be successful. **Mentoring** is most often defined as a professional relationship in which an experienced superior (the mentor) assists women executives (the mentee) in developing specific skills and knowledge that will enhance their professional and personal growth. And again researcher can suggest that increase self-efficacy through **verbal encouragement** of management/superiors. When senior management encourage and convince female executives to perform a task, they tend to believe that they are more capable of performing the task. **Constructive feedback** is important in maintaining a sense of efficacy as it may help overcome self-doubt.

Further the study recommends conducting development programmes for female executives to control anxiety, moods, emotions, physical reactions, and stress levels. According to the views of respondents of the questionnaire that may influence their feelings about their personal abilities. If there is any female executive who is extremely nervous, she may begin to doubt and develop a weak sense of self-efficacy. Therefore, being able to diminish or control anxiety may have positive impact on self-efficacy beliefs. In addition, female executives can have developmental performance appraisals instead of traditional performance appraisals to increase their Personal Growth Initiatives (PGI). Banks can think of redesign their performance appraisals, leading to a shift from evaluative performance appraisals, often focusing on employees' weaknesses to developmental performance appraisals often focusing on employees' strengths. PGI describes the degree to which an employee actively engages in the process of personal growth, which is one of the main aims of women career development. Managerial support is another important factor which can improve the personal Growth Initiatives. Managerial support which is defined as the extent to which employees feel that their manager cares about their well-being and values their contributions (Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002). Managerial support can manifest itself in for example, answering questions, listening to concerns and

guiding career development (Chen, Wang, Chang & Hu, 2008; Ng & Sorenson, 2008).

According to the analysis, Organizational factors have a negative significance effect on Women Career Development. Organizational factors reflect to what extent organizational barriers that comes from organizational structure and practices influence including organizational policy and management beliefs towards the career development of female executives. As per the views of the respondents, currently the friendly policies and practices are available to influence them for their career development but those policies and practices were not very much friendly to female executives. Most of the senior level managers believe that 'men were more efficient than women. As a result of that senior management usually consider much about sending males for training and development programmes than females. Therefore the study recommends adopting friendly policies and practices for female executives related to recruitment and selection, training and development and promotions.

In addition, managerial and professional women need to be aware of the issues of pay equity and equal career opportunities which become critical. Lastly, women are changing organizations for advancement opportunities. In the context of global competition, it is important for banks to understand and rectify the barriers to women's career development because the exit of women from management reduces the pool of talented female staff.

Recommended areas of further study

The findings of this study will contribute to the existing body of knowledge and form basis for future researchers. The following areas of further researcher are thus suggested: (1) Whereas the current study focused on responses from the women executives of non-state commercial banks, future studies should focus on responses from the employees themselves; and (2) Future studies should seek to establish the nature, extent and adoption of supportive measures to women's career development in other sectors of the economy in Sri Lanka.

CONCLUSION AND DISCUSSION

In conclusion, the purpose of this study was to identify the effect of Glass Ceiling factors on Women Career Development of female executives who are currently employed in non-state licensed commercial banks in Colombo District. Based on the previous literature, primary and secondary research findings the report was developed further to examine the level of Glass Ceiling and the level of Career Development among women Executives in Banking Sector.

Although the Sri Lankan economy has evolved, the glass ceiling effect prevails in many companies creating a barrier for women from climbing the corporate ladder and preventing women career development. It is hoped that research information provided by the current

study will prove useful to policy makers in different organizations as well as non-state commercial banks in Sri Lanka.

Based on the literature survey, researcher selected five glass ceiling (GC) factors as independent variables namely Individual Factors (IF), Child Care and Spouse Care (CCSC), Elder Care and Home work (ECHW), Organizational Factors (OF) and Cultural Factors (CF). The dependent variable of this study was Women Career development and three measures were selected by the researcher according to the Fried study (1996) namely Equal Career Opportunities (ECO), Pay Equity (PE) and Networking (N).

The first objective of the study was to identify the existing level of Women Career Development (WCD). According to the data analysis, Women Career Development is at a moderate level. Therefore the first objective of the study was achieved. This result was in accordance with previous study (Bombuwela and de Alwis , 2013).

Second objective of the study was to assess the existing level of Glass Ceiling Factors. Based on the study, researcher has found that the existing level of ‘Organizational Factors’ and ‘Cultural Factors’ are at a moderate level. And the other three glass ceiling factors namely ‘Individual Factors’, ‘Child Care and Spouse Care’ and ‘Elder Care and Housework’ are at a high level. The second objective of the study was achieved. This result is challenges with the study done by Bombuwela and de Alwis (2013) and it indicates that the four sub variable of GC (Individual factors, Family Factors, Organizational Factors and Cultural Factors) lie within the range of low level.

Third objective of the study was to identify the effect of Glass Ceiling Factors on Women Career Development. The hypotheses testing were carried out. The findings of the study revealed that the ‘Individual Factors’ have a significance positive effect on Women Career Development. This indicates that there are positive effects of Self-efficacy beliefs and Personal growth initiatives on Women Career Development. This result challenges previous studies (Whittaker & Robitschek, 2001; Shorey, Little, Snyder, Kluck & Robitschek, 2007 which are revealed that the individuals with high personal growth initiative scores tend to seek career development opportunities and have a high level of future-oriented growth. Conversely, low self-efficacy increases pessimism about an individual’s ability to accomplish an endeavor (Bandura, 1982; Lent & Hackett, 1987; Gist & Mitchell, 1992; Stajkovic & Luthans, 1998; Ballout, 2009; Oni, 2013; Wright, Jenkins-Guarnieri & Murdock, 2013). Both self-efficacy beliefs and personal growth initiatives are not necessarily based on actual ability, but on what is believed by an individual. Actual ability and beliefs about such abilities scarcely tally as people with competencies often

express low self-efficacy beliefs as such, that it limits what they do with their skills (Pajares, 2002).

According to the findings of the current study, Organizational Factors have a significantly negative effect on Women Career Development. This indicates that there are negative effects of Management Policies and practices, Senior Management Beliefs and Organizational Structure on Women Career Development. This result was in accordance with Newman and Matthews (1999); Management policies and practices have the potential to provide flexibility to female and male employees alike, they may also have the potential to be highlighted and to be paid equally. Women are often reluctant to negotiate for themselves due to senior management beliefs and are therefore less likely to ask for raises, further contributing to the gender pay gap (ILO, 2015).

According to the results of multiple regression analysis, 49.5% variation in 'Women Career Development' can be explained by two independent variables namely Individual Factors and Organizational Factors. In fact other dimensions of glass ceiling, which were not considered in this study, should be the dimensions that may account for the unexpected dimensions which effect on women career development.

The findings of this research study shall be important on the theoretical as well as practical scenario. As this research model proves to be an explanatory model of glass ceiling, the findings of the study may be important to mitigate glass ceiling and to enhance women career development in non-state licensed commercial banks in Colombo district. The top management can identify the issues they should address when making decisions regarding women and their career development.

In order to reduce the negative effect of glass ceiling on women career development, this study recommends developing self-efficacy by encouraging management to use mentoring for women executives. Mentoring will support female executives to reduce self-limiting beliefs and lack of self-confidence, which can result in them going forward for promotions. And again researcher can suggest that increase self-efficacy through verbal encouragement of management/superiors. Conducting development programmes for female executives to control anxiety, moods, emotions, physical reactions, and stress levels will have positive impact on self-efficacy beliefs. In addition, researcher suggests having developmental performance appraisals instead of traditional performance appraisals to increase their Personal Growth Initiatives (PGI).

Further, the study recommends adopting friendly policies and practices for female executives related to recruitment and selection, training and development and promotions. Then, they can reduce the negative effect of organizational factors on Women Career Development.

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Introverted and Extroverted Personality Traits of Leaders and OCB of Followers: A Moderating Effect of Leader-Member Relationship of IT Industry in Sri Lanka

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Abstract

Research on relationship between personality and leadership supports the notion that individual differences may be the predictors of leadership effectiveness in contemporary organizations. Extended studies stress that each of the Big-Five broad personality dimensions is related to leader criteria and identified introversion-extroversion as a key element of an individual personality. In general, the main differences between effective leaders and less effective ones are that, effective leaders differ themselves from their personality traits and the relationship building with followers. However, relatively few studies have tested how and why introvert and extrovert leader's personality traits relate to follower behaviors, in addition, if so, the mechanisms through which a leader's personality traits relate to follower behaviours. Accordingly, the main aims of the present study are to examine whether the introverted personality traits of leaders and extroverted personality traits of leaders affect the organizational citizenship behaviour of followers and to examine the role of leader-member relationship as a moderator, in social exchange process. To advance the understanding of these, simple regression analysis and moderator regression analysis were performed to test hypotheses with a sample size of 46 introvert managers and 50 extrovert managers as leaders and 92 and 100 subordinates as their followers respectively from IT industry in Sri Lanka. The study found that there is a positive direct effect of introverted personality traits of leaders and no negative direct effect of extroverted personality traits of leaders on organizational citizenship behaviour of followers. Yet, leader-member relationship moderates the positive and negative relationships between introverted, extroverted personality traits of leaders and organizational citizenship behaviour of followers. Present study makes several theoretical contributions to path-goal theory of leadership with the support from theory of trait leadership and big five model. Further, managerial contributions of the present study make IT firms successful through better selection of leaders based on personality traits which facilitates organizational citizenship behaviour.

Keywords: Introverted personality traits, extroverted personality traits, OCB, Leader-member relationship, IT industry in Sri Lanka

INTRODUCTION

Research on relationship between personality traits and leadership supports the notion that different outcomes of individuals may be the predictors of leader behaviors (Hao and Yazdanifard, 2015). Therefore, it is vital for an organization to identify factors of its success, which can be measured from organizational performances and employee behaviors. Effective leader personality and extra role behavior of followers are the two main factors that have been regarded as fundamental key success factors for organizational performances. Contemporary organizations underline that employees should perform the work tasks and extra role behaviour for the long-term survival of the organization (Neuman and Kickul, 1998). This can be defined as Organizational Citizenship Behavior (OCB), a behavior at an individual's discretion that was not directly or explicitly rewarded but that will be taken as a fulfillment of the organization's objectives (Rauf, 2016 as cited in Organ, 1988).

Previous studies have indicated that each of the Big-Five personality traits namely conscientiousness, extraversion, agreeableness, openness to experience and emotional stability are related to leader criteria (Kahya and Sahin, 2018). Emphasizing introversion-extroversion as the main trait of big-five model, extroverts found to be socially engaging, expressive, articulate and comfortable in group settings. On the other hand, introverts seem quiet, low-key, deliberate, and less involved in the social world. Moreover, introverts prefer close relationships as they prefer more close interactions with small groups (Prakash, et al., 2016) whereas extroverts would like to address large groups which result a shallow relationship among members (Hills and Argyle, 2001). Further, extroverts are more competitive and mainly focusing for reward achievements whereas introverts are more cooperative and directing to facilitate more relationships.

Yet, it is evident from contemporary organization behaviors that they are struggling to create required OCB among employees due to the work tasks and primary objectives of the organization. In addition, it may not perform well in an environment which is stable, unchanging, and where centralized decision-making, written rules and procedures, and standardization of tasks are highly considered (DeGroot and Brownlee, 2006). To facilitate OCB, employees prefer more cooperativeness, close relationships and friendly working environment. As extroversion-introversion is the main personality trait according to the five-factor model, behaviors of extrovert leaders will not result OCB as they are more authoritative and dominant in nature. In contrast, cooperativeness and close interactions of introverts will

result OCB among employees in work places where no studies have been conducted to measure the direct relationship. Hence, this study focuses on ‘whether introverted and extroverted personality traits of leaders influence the OCB of followers?’ This relationship will be more strengthened or weakened due to the relationships among leaders and followers, which is evident from contemporary organizational behavior. With this background, potential relationship between introverted personality traits of leaders and OCB of followers and extroverted personality traits of leaders and OCB of followers moderates leader-member relationship, which is not explored in the previous literature and is opened for more research. The present study contributes to research in this area. In support, it measures the impact of introverted and extroverted personality traits of leaders on OCB of followers and examines whether the leader-member relationship (LMX) moderates the relationship between introverted personality traits and OCB of followers.

The remainder of this paper is organized as follows: Section two briefly reviews the literature pertaining to introverted personality traits of leaders, organizational citizenship behavior and leader-member relationship. In section three, research method is outlined. Section four presents the study’s empirical results. The last section discusses the research findings, followed by a presentation of the research limitations and direction for future research.

LITERATURE REVIEW

Leader personality, which is a part of the leader traits, explains a minimum of thirty-one percent (31%) of the variance in leadership effectiveness at large in an organization context (Derue, et al., 2011). The concept of personality has begun to attract a great deal of interest in behavioral ecology and human psychology. Personality differs from person to person (Nettle and Penke, 2010) based on the nature, environment, situation they face and the designation they hold in an organization. Moreover, leadership becomes the core area of most of the organizations, to achieve its objectives in resourceful and operative manner. Besides, leadership leads more positive outcomes of an organization such as job satisfaction, management of diversified workforce, organizational citizenship behavior and high employee commitment (Voegtlin, et al., 2012).

Apart from the studies that have focused on leadership effectiveness (Judge, et al., 2002; Derue, et al., 2011) several attempts were made to provide evidence on traits and behaviors of leaders (Kirkpatrick and Locke, 1991; Hogan, et al., 1994)). According to Emanuelsson and Lindqvist (2014) extroversion, self-confidence, and courage are the traits that could potentially be linked

with great leaders. Moreover, the study illustrated that, an introverted leader commonly uses a leader-member exchange leadership style leading to both engagement and empowerment, which will cause organizational citizenship behavior of followers. Leader traits have a long and controversial history, where some literature supports for the extroversion and some for introversion.

Introverts think carefully and analyze details before speaking which is a key trait of a leader (Farrell, 2017). As Hautala (2006) expresses, introverts support for encouraging behavior and extroverts set targets and visions for the subordinates. This illustrates positive aspects of both introverts and extroverts. Moreover, managers who have more introvert traits, become exceedingly effective and efficient, especially when their jobs do not require much social interactions (Hudson and Ferguson, 2016). Besides, there are some instances where it is reported that introverts also have succeeded in leadership (Gio and Yazdanifard, 2015). According to Farrell (2017) extrovert leaders are better in carrying out the organizational projects where introvert leaders are ideal in planning process to gain sustainable competitive advantage. Even a very shy person should be able to lead a group to safety if a rival group was attacking them and he was the first to notice the danger (Vugt, 2006). Culturally, extroverts are seen as individuals whose seek action, like working with others and are achievement-oriented (Clack, 2017). According to Farrell (2017) extroverts build up energy and ideas externally by developing social interactions. Judge, et al. (2002) explained that extraversion is strongly related to social leadership where leaders would like to address a large crowd. Further, they have illustrated that extraversion is the most important trait as both sociable and dominant people are more likely to assert themselves in group situations. Out of all leadership outcomes, one of the imperative leadership outcomes for an organization is 'organizational citizenship behaviour' which is significant to gain sustainable competitive advantage through human psychological engagement. With little research it is evident that OCB is facilitated from team performances, relationships between individuals, leader behaviors and personality traits (Neuman and Kickul, 1998; Elanain, 2007; Harper, 2015). This is a series of voluntary and optional actions that are not part of the person's official duties, but nonetheless done by him/her, and causes improvement in the functions and roles performed by the organization (Shoaeshargh and Dadashi, 2013 as cited in Alotaibi, 2009). However, a little research has carried on to measure the impact of leader personality on OCB of followers (Bernerth, et al., 2008).

It is evident that introverted personality type employees will be more likely to show a dutiful character, more likely to be altruism and obvious citizenship virtue compared to extrovert personality type employees (Harper, 2015). With the wide spectrum of identification of introvert leaders, it is evident that they are passionate to give the freedom to employees while they are working for the organization which will lead to OCB as it is something discretionary and commitment towards what they do. Hills and Argyle (2001) expresses introverts experience high level of empathy with few special people with them which leads to trust and commitment as a part of OCB. Moreover, as Emmerik and Euwema (2007) introvert personalities are more sensitive for a good relation with their team leader and extroverts are less influenced by the relation with their leader when it comes to engagement in OCBs. Extroverted leaders are willing to dominate the context, as employees will take it as forceful reaction from leader and not contribute to OCB. Dominancy may discourage others to build up strong relationships with group members including the leader. Further, it may discourage others to commit more on mutual trust among group members that will cause to reduce the performances in the long run as there is no autonomy for others to work leisurely. As Power (2017) points out, even though extroverts prefer more interactions, they can quickly get aggressive when trying to impress others or earn their respect through over commitment. Further, Grant, et al. (2011) illustrated that although extraverted leadership enhances group performance when employees are passive, this effect reverses when employees are proactive; because extraverted leaders are less receptive to proactivity. Moreover, extroverted leaders may not be successful in organizational performances where the leader is too busy socializing with all levels of the working environment and acting upon them. Farrell (2017) brought up the failures of extroverted leaders as they are arrogant, bossy and self-centered. Perception of leader supportiveness ranked as the highest antecedent on OCB out of other leadership behaviours (Podsakoff, et al., 2000). Therefore, the below hypotheses can be developed to investigate the direct effect between the introverted and extroverted personality traits of leaders and OCB of followers.

Hypothesis 1a: Introverted personality traits of leaders positively affect the OCB of followers.

Hypothesis 1b: Extroverted personality traits of leaders negatively affect the OCB of followers.

As Prakash, et al. (2016) highlight, introverts prefer to spend time in smaller groups, or one-on-one, and usually like to get to know each other slowly. Further, as Owen, et al.(2000) Organizational Citizenship Behaviour may relate at the smaller work-group, rather than the organization-wide level, which facilitates more interactions and relationships. Introverts be more selective and focus on establishing individual affiliative relationship with a few special people around them (Hills and Argyle, 2001). This study further illustrated that introverts experience high level of empathy with few special people with them. Therefore, understanding among introverts will increase which will cause for more commitment towards the organization. High-quality supervisor-subordinate relationships were positively related to a desire to help others and be accepted by them, as well as a positive regard for the organization as a whole (Connell, 2005). Conversely, extroverts do not develop a long-term employee organizational association that emphasizes trust, mutuality and shared aspirations (Neuman andKickul, 1998) even though they get to know each other quickly (Prakash, et al., 2016). This study further illustrated that extroverts do not concentrate on mutual trust and an open-ended commitment, which represents from the conventional relationship between an employee and an organization. Moreover, extroverts are more competitive and mainly focus for reward achievements whereas introverts are more corporative and directive to facilitate more relationships. Similarly, supervisor-subordinate relationships characterized by high levels of trust, support, liking, and attention were also associated with increased OCB. Therefore, it is worthwhile to understand how leader-member relationship effects on different personalities of leaders and OCB of followers. Moreover, below hypotheses can be developed to measure the moderating effect of leader-member relationship on personality traits of leaders and OCB of followers.

Hypothesis 2a: Relationship between introverted personality traits of leaders and OCB of followers is moderated by Leader-Member relationship.

Hypothesis 2b: Relationship between extroverted personality traits of leaders and OCB of followers is moderated by Leader-Member relationship.

RESEARCH METHOD

Sample and data collection

The sample of this study consisted of 46 introvert leaders, 50 extrovert leaders and 92 and 100 followers of these leaders respectively from Information Technology industry in Sri Lanka. This sample is chosen, due to hierarchical structure and the responsibilities of leader-follower dyadic relations in the selected IT industry, and easy identification and reliable testing of the leader-follower relationship. The self-administered questionnaires were delivered based on survey strategy to managers to measure introverted and extroverted personality traits of leaders and subordinates to measure OCB and leader-member relationship.

Variables and model

Organizational Citizenship Behavior is the dependent variable of the present study. This was measured using five dimensions: altruism, civic virtue, conscientiousness, courtesy and civic virtue using 24-items of OCB measurement scale developed by Podsakoff and MacKenzie (1990). The independent variable introverted and extroverted personality traits of leaders was measured using NEO PI-R scale of personality developed by Costa and McCrae (1989). This study used one moderator variable; leader-member relationship which was measured using 7-items LMX reported by Scandura and Graen (1984). The working definitions of the constructs are presented in table 1.

Table 1: Working Definitions of the Constructs

Construct	Working Definition
Introverted Personality Traits	Quiet, low-key, deliberate, and less involved in the social world, prefer more close interactions with small groups, more corporative and directing to facilitate more relationships.
Extroverted Personality Traits	Socially engaging, expressive, articulate, comfortable in group settings, shallow relationship among members, more competitive and mainly focusing on reward achievements.
Organizational Citizenship Behavior	a behavior at an individual's discretion that was not directly or explicitly rewarded but that will be taken as a fulfillment of the organization's objectives.

Leader- Member Relationship (LMX)	The relationship between follower and the leader, atwo-way (dyadic) relationship, and is affected by mutual interaction.
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Source:(Big-five personality dimensions; Shoaeshargh andDadashi, 2013 as cited in Alotaibi, 2009; Uusi-Kakkuriand Brandt, 2015)

RESULTS AND FINDINGS

Table 2 shows the descriptive statistics and correlations of the variables.

Table 2: Means, Standard deviations, and Pearson correlation coefficients of variables

	Mean	SD	LMX-I	LMX-E	OCB-I	OCB-E
IPT	3.1660	0.0799	0.583**	-	0.344**	-
EPT	3.4926	0.1233	-	0.047	-	0.231**
LMX-I	3.2986	0.4538	-	-	0.433**	-
LMX-E	3.0267	0.5483	-	-	0.551**	-
OCB-I	3.8333	0.3948	-	-	-	-
OCB-E	3.6149	0.2951	-	-	-	-

** Correlation is significant at the 0.01 level (2-tailed)

Note. (1) Between .1-.3: Small Effect. (2) Between .3-.5: Medium Effect. (3) Above .5: Large Effect

IPT- Introverted personality traits, EPT- Extroverted personality traits, OCB-I/E Organizational Citizenship Behavior-Introverts/Extroverts, LMX-I/E Leader-Member Exchange/Relationship-Introverts/Extroverts

An examination of correlations revealed a significant association among the variables. Overall, the patterns of the correlations were much similar to the expected results as the direct effect and moderating effect were significant at 99% in correlation matrix.

The results of the regression used to test the hypotheses of introvert and extrovert leaders are shown in table 3 and 4.

Table 3: Regression results for Introverted personality traits, OCB and Leader-Member Relationship

	Model 1	Model 2	Model 3
Intercept	-1.555 (-1.267)	3.833 (130.645)	3.789 (155.028)
Beta Value	0.344* (4.392)	0.130** (1.421)	0.120** (1.331)
LMX		0.367* (3.999)	0.388* (4.305)
Intro traits X LMX			0.199* (2.719)
R	0.344	0.455	0.497
R ²	0.118	0.207	0.247
Adjusted R ²	0.112*	0.196*	0.231*
R ² change	0.118	0.207	0.247
F change	19.290*	18.648*	15.453*

Source: Survey data

Dependent variable: OCB

Note: Data are standardized regression weights. Intro traits= Introverted Traits of leaders; LMX= Leader-Member Exchange/Relationship

*p < .05. **p < .01. ***p < .001.

These results show that introverted personality traits of leaders had a positive relationship with OCB of followers ($\beta = 0.344$, $p \leq 0.05$), significant at the ninety-five percent (95%) level. This finding is consistent with evidence from previous studies (Emmerik and Euwema, 2007; Harper, 2015; Farrell, 2017). Further, relationship between introverted personality traits of

leaders and OCB of followers is moderated by Leader-Member relationship ($\beta = 0.130$, $p \leq 0.05$) as suggested and it became more prominent with the interaction effect ($\beta = 0.120$, $p \leq 0.05$). Adjusted R^2 value of 0.231 represents the overall impact of introverted personality traits of leaders with interaction effect of leader-member relationship quality on OCB of followers ($F=15.453$, $p \leq 0.05$). Based on the results, there is a synergistic effect from leader-member relationship moderation variable to introverted personality traits of leaders and OCB of followers. It represents both introverted personality traits of leaders and leader-member relationship affect the OCB of followers in the same direction and together they produce a strong relationship than additive effect on OCB of followers.

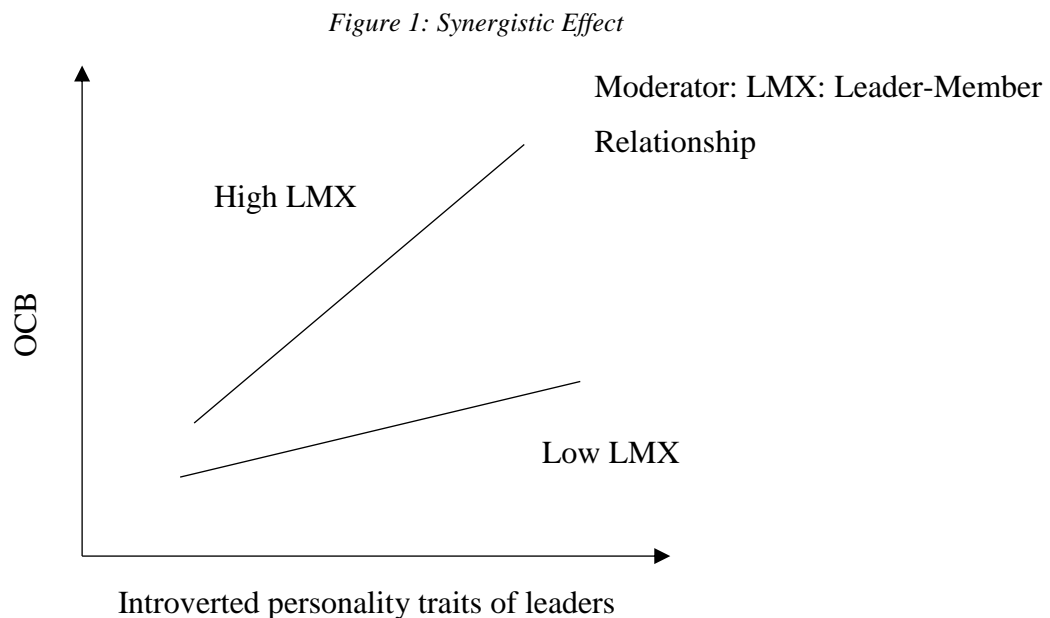


Table 4:Regression results for Extroverted personality traits, OCB and Leader-Member Relationship

	Model 1	Model 2	Model 3
Intercept	1.682 (2.714)	2.734 (26.706)	3.618 (204.670)
Beta Value	0.231* (3.122)	0.206* (3.325)	0.185* (3.067)
LMX		0.541* (8.744)	0.474* (7.480)
Extro traits X LMX			-0.215* (-3.374)
R	0.231	0.588	0.622
R ²	0.054	0.345	0.386
Adjusted R ²	0.048*	0.338*	0.376*
R ² change	0.054	0.345	0.386
F change	9.750*	45.237*	35.780*

Source: Survey data

Dependent variable: OCB

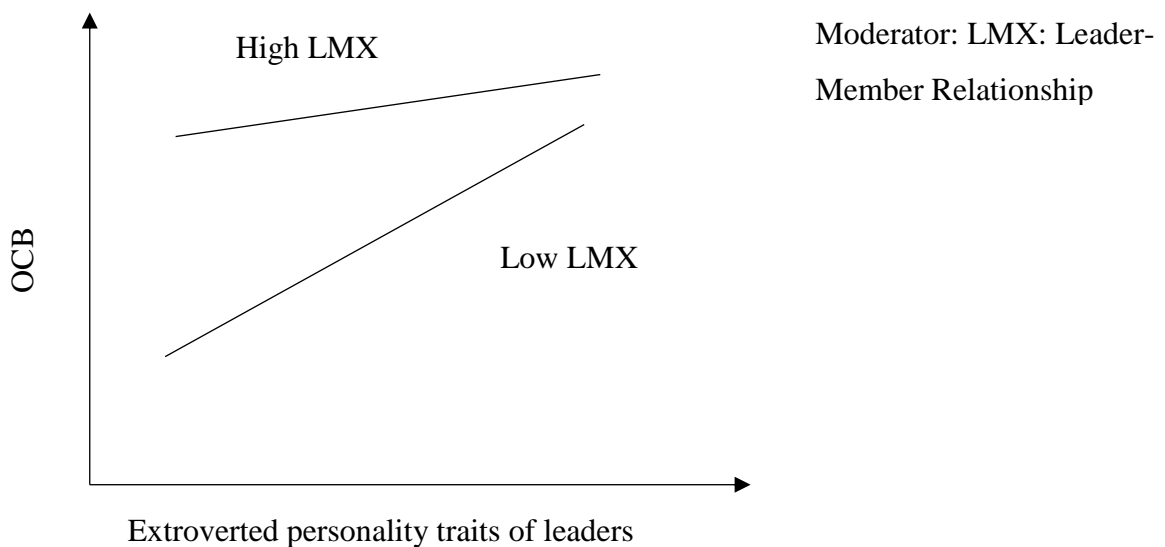
Note: Data are standardized regression weights. Extro traits= Extroverted Traits of leaders; LMX= Leader-Member Exchange/ Relationship

*p < .05. **p < .01. ***p < .001.

These results show that extroverted personality traits of leaders had a positive relationship with OCB of followers ($\beta = 0.231$, $p \leq 0.05$) which is not supported for hypothesis as suggested. This finding is consistent with evidence from previous studies (Neuman and Kickul, 1998 as cited in Krebs, 1970; Chiaburu, et al., 2011). Yet, with regards to information technology industry firms in Sri Lanka, the results of the moderation effect is at ninety five percent

(95%) which is a significant level concerning Sri Lankan Information Technology industry. Adjusted R^2 value of 0.376 represents the overall impact of extroverted personality traits of leaders with interaction effect of leader-member relationship quality on OCB of followers ($F=35.780$, $p \leq 0.05$). Based on the results, there is an Antagonistic effect from leader-member relationship moderation variable to introverted personality traits of leaders and OCB of followers. It represents both extroverted personality traits of leaders and leader-member relationship predict OCB in the same direction. But, they each weaken each other. The importance of extroverted personality traits of leaders is weakened the presence of the leader-member relationship for OCB of followers.

Figure 2: Antagonistic Effect



DISCUSSION, LIMITATIONS AND AVENUE FOR FUTURE RESEARCH

This study not only replicates but also extends previous research on the direct effect and moderating effect on leader-member relationship of the relationship between the personality traits of leaders and OCB of followers. In answering research questions, the present study focuses on introverted and extroverted personality traits of leaders of IT industry in Sri Lanka. First, the results of this study replicate earlier findings (Emmerik and Euwema, 2007; Grant, et al., 2011; Harper, 2015; Ahmed and Khan, 2016) establishing positive direct effect of introverted personality traits of leaders on OCB of followers. Similarly, the results of this are in line with the findings of the previous studies (Buchanan, 1998; Neuman and Kickul, 1998; Owen, et al., 2000; Hills and Argyle, 2001; Asgari, et al., 2008; Prakash, et al., 2016) and

indicate that the leader-member relationship is a significant determinant of positive direct effect of introverted personality traits of leaders and negative direct effect of extroverted personality traits of leaders on OCB of followers. Yet, the negative direct impact on extroverted personality traits of leaders and OCB was not statistically significant in the present study. That may be the operating environment, situation, culture or habits which enhance positive and negative impact on leadership personalities (Baldwin, 2014). As Mooney (2018) states, the nature of a company's culture influences; if there is a strong culture employee will have motivated and well-trained. IT professionals include dependability and the ability to adapt to a changing work environment, such as the need to come in on weekends to address critical systems issues (Long, n.d.). Further, individuals should also feel comfortable working as part of a larger team to complete tasks rather than isolation. Further, as Leonard (2018) expresses, type of the work task affects the leadership behaviors of individuals. As per the IT professionals in Sri Lanka, it is evident that they have to change their leadership traits based on the task accomplishment.

Importantly, the present study extends previous research by examining the moderating role of leader-member relationship between the direct relationship. As hypothesised, the results of the present study supported that leader-member relationship mediated the relationship between introverted and extroverted personality traits of leaders and OCB of followers. First, it provides empirical support for leader-member relationship regarding the tendency of high quality relationship between manager/leader and subordinate/follower to enhance organizational citizenship behavior of followers. This enhancement of follower performance is important as previous researches have indicated that introverted personality traits of leaders and leader-member relationship can contribute to effective outcomes of an organization (Hautala, 2006; Bernerth, et al., 2008). Second, findings of this study also provide empirical support for the extrovert's relationship behavior suggested by Hills and Argyle (2001) and Neuman and Kickul (1998). The findings, suggest that extroverted leader personality trait is not a foundational leader characteristic for the OCB of followers. Social exchange relationships, on the other hand, have an impact on the maintenance of the power and solidarity depending on its long term relationship and mutual trust.

In conclusion, despite the importance of leadership characteristics in organizations, this research examines the promising mechanisms through which leader personality influences followers' effective performance, which has been lacking. The present study makes an important contribution by examining how leader personality traits (introverted and extroverted) influence follower attitudes and behaviors by displaying the importance of leader-member

relationship. Hence, this study provides a better understanding of how leader personality influences follower organizational citizenship behavior.

Theoretically, the findings of this study provide understandings for two bodies of work. First, the direct effect of introverted personality traits of leaders and OCB of followers was supported which rationalized from path-goal theory with the support of theory of trait leadership and five factor model of personality. It further, reveals that leader behavior is important for the follower motivation and goal achievement identified by previous research (House and Mitchell, 1975; Ng, et al., 2008; Malik, et al., 2014) and OCB was generated. However, direct effect of extroverted personality traits of leaders and OCB of followers is not supported with the theoretical argument. Motivated employees will not automatically engage in OCB, unless the organization ensures the presence of job satisfaction, job involvement, psychological empowerment, perceived organizational support, employee engagement and organizational justice (Ahmed and Khan, 2016). Second, the moderating effect of leader-member relationship revealed by this study and previous research (Harris, et al., 2007; Uusi-Kakkuri and Brandt, 2015) supports the theoretical argument and make contributions to the social exchange theory.

Selection of participants in one industry at a given period of time was a potential limitation of this present study. Nevertheless, future research might consider a longitudinal research design examining perceptions of introverted and extroverted personality traits, OCB and leader-member relationship multiple times over a long period of time. The present study encourages future researchers to carry out the same study again with the change of research design to a qualitative research as respondents have not given the assured answers based on questionnaire method. The researchers would be able to observe and understand reactions of respondents if they can conduct the study through interview method as the data collection tool. There will be more interesting answers with the close monitoring methods between the researcher and the respondent.

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Marketing, Real Estate and Business Management

A study on the Relative Importance of Packaging Elements of Baby Care Products in Sri Lanka : A Comparative Study between different Demographic Variables

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Abstract

Baby care category has been profitable throughout the years and gained the interest of global players in Sri Lanka amidst the emergence of several local companies. Previous research on FMCG products identified that a 1% shift in packaging will result in 88.9% shift in consumer purchase intention, signifying the role of packaging in buying behavior. But there is mild research done with regards to the Baby Care Category and especially in the Sri Lankan context. This research focuses on the gap of identifying the importance of the different packaging elements of baby care products and also includes a comparative study of demographic factors (gender, income and level of education) with each of these package elements for clearer insights.

A field survey was conducted with an internet questionnaire to obtain data from a sample of Colombo residents. Further insights were gathered by discussing with buyers (at point of sale) and retailers of mother and baby outlets. Descriptive statistics and ANOVA were performed to analyse the data. The results revealed that a weak positive importance was laid on “Graphics” (Color and Artwork) and on Packaging “Dimensions” (Design and Shape) of the package. The dimension of “Information” was placed relatively a higher importance in the buying decision. These findings aligned with the insights from buyers and retailers; buyers being more concerned on baby’s safety prioritized ensuring product reliability. Certifications, labels, precautions and instructions on the package which guide them, evidently are part of the dimension of Information. The results further revealed that the identified importance laid on the three dimensions of packaging elements did not significantly vary on any of the demographic factors; gender, income and level of education. Baby care being a sensitive area for parents (unlike generic products), the importance placed on information was much higher due to its role played in assurance, consequently comparative lesser importance was placed on how colorful, big and stylish the packaging is, as the priority was absolute amongst buyers across diverse demographic differences.

Keywords: Packaging, Packaging elements, Packaging influence, Baby care products, Demographic factor cross analysis.

INTRODUCTION

Packaging has been a vital area in converting a sale. It was estimated through researches done that 73 percent of purchase decisions are made at the point of sale (Connolly and Davidson 1996); Frontiers, 1996 cited in Rettie and Brewer, 2000), which reflects the role of packaging in a consumer's conversion.

Baby care sector, having a different purchase dynamic and being a very sensitive and area of thorough concern, different from FMCG, have not been focused in previous studies. Packaging has been playing multiple roles, obviously being a tool of customer attention grabber and purchase converter; thus, the important question arises on what component of packaging of the product that really impacts the consumer's behavior with relation to baby care.

To provide striking insights, the analysis on the packaging elements are further subject to being tested on different customer demographic factors including Income level, Education level and Gender (of the buyer) to understand the volatility in findings amongst these demographic variables, to obtain insightful understanding on the decisiveness of demographic differences in buyers towards appeals in the packaging. This was considered in the study to provide a more holistic view on a relative understanding of packaging elements.

With a range of products to choose from the shelf, what will attract and appeal to the consumer at the point of sale is a challenge today. Researches carried out by Rundh (2009); Shah, Ahmad and Ahmad (2013) suggest that the instance where manufacturers reach a stalemate on consumer satisfaction where the parity becomes smaller and smaller, the package comes in as the final and most valued tool in determining consumer purchase decision. Though research has been carried out on packaging elements pertaining to the FMCG sector, no literature is available on the baby care sector (for example, Wang, 2013; Ehsan & Samreen Lodhi, 2015; Silayoi & Speece, 2007; Sultan, 2016; Underwood, et al., 2001; Garber et al., 2000; Plasschaert, 1995; Schoorsman et al., 1997; Karimi, et al., 2013; Ruto, 2015; Adam & Ali, 2014; Hota & Charry, 2014; Seyedsalehi, 2015; Ahmed, et al., 2014; Rundh, 2009). The purpose of this study is to identify the importance placed in each element of packaging of specifically baby care products by Sri Lankan buyers with a comparison of demographic differences.

RESEARCH PROBLEM

This study is directed on identifying which elements of packaging are considered as more important and less important when a customer buys baby care products in the Sri Lankan context and examining whether the importance placed in the packaging elements differs based on demographic differences in buyers.

RESEARCH QUESTIONS

To what extent consumers consider graphics in packaging when they buy baby care products in Sri Lanka.

To what extent consumers consider dimensions in packaging when they buy baby care products in Sri Lanka.

To what extent consumers consider information in packaging when they buy baby care products in Sri Lanka.

Does the importance placed in the packaging elements differ based on demographic differences in buyers?

LITERATURE REVIEW

As cited by Otterbring et al. (2013), “many customer decisions are unplanned (Hausman, 2000; Kollat and Willett, 1967; Park et al., 1989) and made at the point of purchase (Bucklin and Lattin, 1991; POPAI, 1996; Rundh, 2005)”. According to Silayoi and Speece (2007) cited in Connolly and Davidson (1996), an “estimated 73 percent of purchase decisions are made at the point of sale”, which indicates the role of consumer conversion specifically at point of purchase. The pack design is the “salesman on the shelf” (Pilditch, 1972 cited in Rettie and Brewer, 2000).

Silayoi and Speece (2007) stated that when buyers have not even thought about the product/brand much before entering the store, this intention to purchase is determined by what is communicated at the point of purchase. At the point of purchase, what is first exposed to the buyer is the package of the product, which creates the primary impression at the shelf. Point-of-purchase decisions heighten the potential for product packaging to communicate information to consumers and influence product choice (Clement, 2007 cited in Wang, 2013). This fact is made evident by Silayoi and Speece (2007) in their research where they state that “the package becomes a critical factor in the consumer decision-making process because it communicates to consumers at the time they are actually deciding in the store.”

Further the following was cited in the research of Wang (2013) “Previous studies have indicated that packaging is a marketing communication vehicle (Silayoi and Speece, 2007; Hellstro and Nilsson, 2011) used to capture consumer attention (Thalhammer, 2007), which affects the product selection process (Hall et al., 2004). Therefore, product packaging provides an opportunity to communicate with and influence the consumer at the point of purchase (Atkin et al., 2006; Wigley and Chiang, 2009)”.

Moreover, research suggests that in the current competitive world where companies are concerned on attracting new customers, retaining existing customers and expanding the market amidst the competitive pressures, to achieve their objective, one method that companies apply is stylish packaging with high-quality (Ranjbarian, 1999 cited in Karimi et al., 2013). When designing a package, it is important to understand the influence these elements have on customers (Silayoi and Speece, 2007 cited in Otterbring et al., 2013)

Most impulse buying occurs because of product display, and attractive packaging plays an important role in product display (Ghani and Kamal, 2010 cited in Wang, 2013). As cited in Otterbring et al. (2013), “Packaging plays a key role in customers’ purchase decisions (Deng and Kahn, 2009; Hanzae and Sheikhi, 2010; Kuvykaite et al., 2009; Orth and Malkewitz, 2008; Rettie and Brewer, 2000; Silayoi and Speece, 2004, 2007; Underwood and Klein, 2002)”. Even though researches have stated how packaging has its impacts on buyers, the extent of influence is volatile between products and cultures. As research has also identified that “many cross-cultural researchers assert that knowledge developed in one culture should be confirmed before using in new cultural contexts (Malhotra et al., 1996 cited in Silayoi and Speece, 2007). This is where the need to understand the extent to which packaging and specifically which elements of packaging influences the customer when buying baby care products in the context of Sri Lanka, where the relevance of insights of one culture has to be confirmed on another culture prior to implementing it, as the behaviour of people is different from culture to culture. On identifying the elements of packaging for the research, the classification used in the study conducted by Ruto (2015) was utilized, which consisted of three dimensions namely, Package Graphics, Package Dimension and Package Information.

Graphics (Colour and Artwork)

The initial attractiveness of a package is derived from the aspect of the colour of the package. Branding is a story narrated by colour, not just in the creation of visual attractiveness, but in communicating the essence of the product (Ruto, 2015). Ruto (2015) has also indicated that a recent study conducted placed consumer preference of colour at close to 85%, which indicates the significance of the role that colour plays in consumer choice. Evaluation of attributes is of less importance in low involvement decisions, so graphics and color become critical (Grossman and Wisenblit, 1999 cited in Karimi, Mahdih and Rahmani, 2013). Consumers also learn color associations, which lead them to prefer certain colors for various product categories (Grossman and Wisenblit, 1999 cited in Silayoi et al., 2004). In addition to a package’s colour, an important graphical element is the ‘art’ embedded in the package. Hence art/painting has been used in packaging by marketers to convey its influence into products, according to Ruto (2015).

The element of art in a package has been useful in making the package catchy and appealing to a viewer, thereby tempting the buyer to have a look at the package (product) and influencing his/her intention to purchase.

Dimensions (Shape and Size)

The shape of the package has been a very keen and decisive element at the point of sale to outstand among the product clutter. Not only the shape affects how the products are displayed or stacked on the shelf, but also influences the buyer to go for the product or not. It was also identified by Prendergast and Marr (1997) that consumers who look for good deals, the size of packaging provides the impression to the consumer on value for money (cited in Karimi, Mahdiah and Rahmani, 2013). As simply, when there are two products of the same size but one has a larger package, the buyer usually picks the larger package perceiving that there is a larger quantity/larger product, hence a greater value for the money spent (Ruto, 2015). In addition, this could imply that when product quality is hard to determine, as with generics, the packaging size effect is stronger (Silayoi et al., 2004).

Information

As cited by Ruto (2015), the foundation of it all is to ensure that the information displayed on the package or label is true and relevant, so that the consumer feels a sense of trustworthiness in the overall presentation of the product (Rochchiand Stefani, 2006; Sevilla, 2012). Consumers with their high involvement with the products tend to look at product information and make appropriatedecisions accordingly and the product information could change their attitude of buying the product (SilayoiandSpeece, 2004 cited in Adam and Ali, 2014). Research has shown that there is a significant relationship between consumer purchase decision and theinformation on packaging (Karimi et al., 2013 cited in Adam and Ali, 2014). Product information influences the perception of quality and preference (Dransfield et al., 1998; DimraandSkuras, 2003 cited in Wang, 2013). Written information on the package can assist consumers in making their decisions carefully as they consider product characteristics (Silayoi et al., 2004).

METHODOLOGY

Population relevant for this study was individuals in Sri Lanka who buy baby care products. The sample of the study consisted of 200 respondents taken from the population who live in the Colombo district due to ease in access as well as due to the respondents' high exposure to a numerous number of baby care brands. Respondents were obtained through Convenience Sampling using personal contacts of the researchers. Descriptive research approach was used since the purpose of the study was to measure the relative importance of the different packaging

elements when buying baby care products. The following dimensions of the package elements were identified from the previous studies, ‘Graphics’(Grossman & Wisenblit, 1999; Karimi et al., 2013; Ruto, 2015; Silayoi et al., 2004), ‘Dimensions’(Holmes&Paswan, 2012; Ruto, 2015) and ‘Information’ (Karimi et al., 2013; Ruto, 2015; Sharif, Salehi and Zahmatkesh, 2013;Silayoi et al.,2004). Accordingly, respondents were asked to evaluate a total of 23 statements related to the three dimensions of the packaging elements; 11 statements for Graphics adopted from Ruto (2015), 6 statements for Dimension adopted from Ruto (2015) and 6 statements for Information adopted from Ruto (2015), where a 5 point likert scale was used ranging from 1-‘strongly agree’ to 5-‘strongly disagree’. Data was collected in December 2016 through a pre-tested questionnaire supplied to respondents through internet forms.

Internal consistency was tested using Cronbach’s Alpha on the measurement for the three dimensions, and the values obtained for ‘Graphic’, ‘Dimension’ and ‘Information’ were respectively 0.954, 0.919 and 0.860. Validity of the measurements was tested through tests for Uni Dimensionality (confirmed), Convergent Validity with KMO and Bartlett Test of Sphericity (confirmed with KMO value > 0.5 and Bartlett test <0.5), Average Variance Extracted (confirmed, value >0.5), Composite Reliability (confirmed, >0.7) and Discriminant Validity (confirmed).

Sample Profile: Table 17 shows the sample profile of the study.

Factor	Classification	Sample	Sample Split
Gender	Male	87	43%
	Female	113	57%
Age	<20	0	0%
	20-29	155	77.5%
	30-39	45	22.5%
	39<	0	0%
Marital Status	Married	200	100%
	Unmarried	0	0%

	Widowed	0	0%
No of Children	0	0	0%
	1-3	200	100%
	4-6	0	0%
	7 and above	0	0%
Monthly Income	<20,000	11	5.5%
	20,000-39,999	32	16%
	40,000-59,999	47	23.5%
	60,000-79,999	27	13.5%
	79,999<	83	41.5%
Level of Education	Ordinary Levels	21	10.5%
	Advanced Levels	34	17%
	Undergraduate Studies	105	52.5%
	Postgraduate Studies	40	20%

Table 17 : Sample Profile

As seen in Table 17, the sample is slightly biased towards Females (57%), the majority of buyers are aged 20-29 depicting the Generation Y and Generation Z buyers and all have children equal to or less than 3 numbers. Most (41.5%) in the sample had a monthly income of Rs. 80,000 and above, whereas 5.5% of the sample had a monthly income of less than Rs. 20,000. Majority of the respondents (52.5%) had completed their Undergraduate studies.

RESULTS

As illustrated in Table 18, the overall importance placed on 'Information' was relatively higher with a mean of 1.7260, indicating that this is the most considered factor in baby care packaging among buyers in Sri Lanka.

Next, 'Graphics' had been rated with a 2.6955 mean value and 'Dimensions' had a mean of 2.8200. This reflects that buyers still do consider Graphics and Dimensions in the package, but the severity of consideration is a lot less in comparison to Information in the package. Among 'Graphics' and 'Dimensions' aspects, Graphics (color and artwork) of the package is considered marginally more important than 'Dimensions' (shape and size).

	Mean (Graphics)	Mean (Dimensions)	Mean (Information)
Mean	2.6955	2.8200	1.7260
Std. Deviation	0.87609	0.76757	0.46907

Table 18 : Mean rating of all Dimensions

Results related to the gender influence on the evaluation of package elements are summarized in Table 19.

	Graphics	Dimensions	Information
Male	2.6688	2.7567	1.7540
Female	2.7160	2.8687	1.7044
Total	2.6955	2.8200	1.7260

Table 19 : Gender analysis on Package Dimensions

Independent sample t-test was carried out to understand whether there are variations observed in the importance placed on each of these three dimensions by gender groups of males and females. When it came to 'Information', equal variances were observed from the Levene's test and it was identified that there was no significant difference in variances on the importance placed on information between males and females (p value of $0.460 > 0.05$).

On 'Graphics', equal variances were assumed between males and females from the Levene's test and there was no significant difference in variances of the importance placed on graphics between males and females (p value of $0.706 > 0.05$).

When it comes to 'Dimensions', equal variances was again observed among males and females (Levene's test) and there was no significant difference in variances of the importance placed on dimensions between males and females (p value of $0.307 > 0.05$).

Table 20 presents the results regarding the influence of income on the evaluation of package elements.

	Graphics	Dimensions	Information
<20001	2.9669	3.1364	1.7091
20001 – 40000	2.7017	2.6927	1.8563
40001 – 60000	2.5861	2.7518	1.7830
60001 – 80000	2.6296	2.7531	1.7407
>80000	2.7404	2.8876	1.6410
Total	2.6955	2.8200	1.7260

Table 20 : Level of Income analysis on Package Dimensions

Test of ANOVA was conducted to identify whether observations vary significantly among buyers of different income levels.

On 'Information', the Levene's test concluded that there is no significant variance among the groups on the importance placed on Information and no significant differences were observed (p value of $0.205 > 0.05$).

On 'Graphics', Levene's test concluded no significant variance observed. No significant differences were observed among different income groups as well (p value of $0.710 > 0.05$).

On 'Dimensions', the Levene's test concluded that there is no significant variance observed among the income groups. There was no significant difference observed among the different income groups on the importance placed on dimensions (p value of $0.413 > 0.05$).

Table 21 illustrates the results derived for the influence of education on consumer evaluation of package elements.

	Graphics	Dimensions	Information
Ordinary level	2.6364	2.7302	1.7619
Advanced level	2.7460	2.8235	1.7000
Undergraduate	2.7203	2.8476	1.7162
Postgraduate	2.6182	2.7917	1.7550
Total	2.6955	2.8200	1.7260

Table 21 : Level of Education analysis on Package Dimensions

On 'Information', the Levene's test concluded that there is no significant variance among the different groups of education on the importance placed on Information and no significant differences were observed (p value of $0.936 > 0.05$).

On 'Graphics', Levene's test concluded no significant variance observed. No significant differences were observed among different groups of education as well (p value of $0.897 > 0.05$).

On 'Dimensions', the Levene's test concluded that there is no significant variance observed among the different groups of education levels. There was no significant difference observed among the different groups of education on the importance placed on dimensions (p value of $0.925 > 0.05$).

DISCUSSION OF THE FINDINGS

The three dimensions of packaging discussed are all considered by the buyer, as evidently each of it has its own role. Baby care dynamics are different to FMCG and so is the question of demographic differences among buyers in Sri Lanka.

The average (mean) rating for the level of consideration of 'Information' was 1.7260. The insight obtained is directly in conformity with Karimi et al. (2013) where the observation of consumers feeling important to consider information on the package in order to compare quality and value is in line with the study's observation. Further, this also indicates that a lot

of consideration is given to the information on the packaging, which agrees on the similar insight from Jafari, Sharif, Salehi and Zahmatkesh (2013, cited in Ruto, 2015)) who observed that a consumer will more likely purchase a product over the rest due to the informative role it has played in their decision making process. Further, the insight from Ruto (2015) in his study also is in likeliness with this where he observed that a consumer responds positively to information that is well written and clear causing the consumer perceives higher care given to this particular product hence greater perceived quality. Silayoi et al. (2004) and Karimi et al. (2013) in their studies identified that written information on the package assisting consumers in making their decisions carefully as consumers consider product characteristics. 'Information' on packaging of baby care products is placed more consideration and importance for assurance and reliability, by buyers in Sri Lanka.

When it comes to 'Graphics', the research insight of Grossman and Wisenblit, 1999 (cited in Karimi et al., 2013; Silayoi et al., 2004), depicts that 'Graphics' become a very critical factor especially when the product is of a low involvement decision. In this instance, buyers, amidst demographic differences has placed an equivalent amount of importance in packaging on graphics. The insight of Grossman and Wisenblit (1999) on a higher importance being placed on graphics when it's a low involvement purchase decision is also indirectly observed here, as baby care generally being not of a low involvement category (requires additional research) depicted only a moderate level of importance placed by the buyer on graphics (mean of 2.69). When it comes to 'Packaging Dimensions' (shape and size), the study of Holmes and Paswan, 2012 (cited in Ruto, 2015) stated that when a consumer feels that the thought put into designing the package of any particular product is done creatively, then it bears an influence on perceived quality, which was in reference to the shape of the package. But in this context, the buyer had placed a moderate level of importance on the 'Dimension' of the package, with a mean value of importance of 2.82. Findings would have been not inline due to reasons, which is a research area further to be studied, possibly due to the diverse dynamics of this category as mentioned before. The average Sri Lankan buyer doesn't pay significant consideration on the package of the baby care product. Hence, the insight of Holmes and Paswan seems less applicable within the baby care industry in Sri Lanka.

When discussing on the overall consideration of the packaging elements, it is to be stated that the baby care sector dynamics discussed initially was verified that Sri Lankans place more care and precaution for the baby.

The insignificant difference with regards to demographic factors discussed including gender itself, brings us to the acknowledgement of the changing world with the changing roles played

by people. Shekhar (2013), in his study, observed a significant difference among males and females on packaging, which is in contrast to the findings of this study. However interpretations supportive to this study have been identified from researchers such as Leng (2010), where he concluded that the impact of packaging elements on consumer purchase decision is not stronger or weaker depending on the consumer's underlying characteristics, where gender and education level has been part of his research which determined his conclusion and supportive to the findings of this research.

When going through recent studies and insights from transparencymarketresearch.com, researchbeamandtechnavio, it was identified that consumers tend to buy products mainly from the recommendations from friends and family, recommendations from expert bloggers and positive prior experience. Sri Lanka might not be currently up to date with relying on bloggers, but the reliance of word of mouth from close families and friends is observable, which proves to be significant than the impact from packaging. Role of Dads being developing into being more involved, where in the global scenario, 73% of Dads are being very involved with purchasing for their babies, where 21% engages in purchasing for their baby infrequently while a minimal 6% rarely engages, which is an insight for males in Sri Lanka too not being significantly different than females when it comes to considering the different elements of packaging when buying.

RESEARCH IMPLICATIONS

This study was focused to fill a gap by studying an area that has not been studied enough especially with reference to the Sri Lankan context. People spend a lot, care a lot and value a lot for their babies, which has resulted in a mass number of products catering to the safety, convenience and need of the baby. In such a situation, understanding the mental schema of the buyer of baby care products is highly valuable both for academic insights as well as managerial use. There are studies done with regards to packaging and its impacts, but a very few have concentrated on the baby care category, and very rare in the Sri Lankan context. Hence, this study has brought about knowledge of Sri Lankan buyers of baby care products and their concentrations and considerations on packaging, also in line extracting insights on what they are concerned about in the package which also provides cues for the product sought after. Academic studies focus on packaging as a part of the marketing mix of Product, whereas the emerging importance of package had package also expressed as the fifth P in the marketing mix. Yet, connecting it to the baby segment was not visible. The insights brought in this study provides weightage and communicates focus areas in a package for more effectiveness.

As identified by the insights gained, marketers who are engaging in the baby care industry in Sri Lanka should lay concerns on the following. Higher priority is placed by buyers on the information available on the package. Hence, adequate information needs to be placed, failing to, buyers who are concerned would most likely refrain from purchasing the baby care product. Saying that, it should be kept in mind that respondents weren't totally denying the consideration for graphics and dimensions, but only that it wasn't a comparatively highly dominant factor for purchase. As the ratings weren't a total disagree (Rate 5), marketers can still make a difference as research insists that over 70% of buyers make their purchase decision at the point of purchase (keeping in mind the significant impact information on the package creates, besides the appeal of graphics and dimensions).

FURTHER RESEARCH

Even though abundant insights were gained from the study, there are plenty of spaces to be filled in the subject. Further, it is important to understand the limitations of this study. Data was collected from respondents only in the vicinity of Colombo district, hence it is not identically representative of all baby care product buyers throughout Sri Lanka. Adding to this, the sample was 200. A wider research with a larger sample throughout the island needs to be undertaken to gain a more transparent knowledge. Inherent limitations of Questionnaires would have affected this study, and the need to engage in multiple modes such as focus group discussions and ethnographic research can be conducted at least in smaller scales throughout the island. In the descriptive study undertaken, other variables of significant impact such as Country of Origin, Brand, Distribution and Availability were not included in the study. Hence, the presence of those variables in line with the packaging elements discussed in the study has the potential for deriving different insights. Hence, the insights from the study are concluded assuming the non-influence of the said other factors. The baby care product category discussed was limited to diapers, wipes, teething rings, bottles and nipples. However, there is a large range of products besides these including products such as cot sheets, baby apparel, baby bathtubs to strollers and car seats. Hence, the insights from the study might not be totally applicable to all baby care products.

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Buyers' Awareness of the Traffic Light Color Coding System Introduced for Packages of Soft Drinks: A study conducted in Kekirawa Town Area

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Abstract

The research study aimed to investigate the Buyers' awareness of the Traffic Light Color Coding System introduced for packages of soft drinks. According to the rises of number of diabetes cases, the Health Ministry of Sri Lanka had introduced Color Coding System for soft drink industry based on the level of sugar content. All soft drinks products have to display colors with red, amber and green according to the sugar level used by various soft drinks manufacturers. This decision has been taken by the government to educate the public and keep up the health consciousness among the citizens of Sri Lanka. This regulation had been introduced to the carbonated beverages, ready-to-serve beverages than milk based products and fruit juices. The main objective of this research is to investigate how far the buyers have the awareness of Traffic Light Color Coding System introduced for packages of soft drinks and whether buyers are concerned about the color to decide the sugar level of soft drinks when making the purchase decision. For this purpose, fifty educated buyers were selected in Kekirawa town area through the purposive sampling method and data were collected among them via personal interview method. In addition to this, the participant's observation has also been made. The qualitative method interpretive analysis was incorporated to derive the results of the study. Findings concluded that few of the buyers had the awareness about the color coding system without knowing its meaning. But most of the buyers only know about the rule without knowing the color coding system and meaning. Findings also showed that buyers consider taste, brand name, price, ingredients, need and wants and quantity level of soft drinks than the meaning of the color coding system. Further buyers are not much concerned about their health consciousness when using soft drinks. This study suggests that a strong marketing campaign is needed to make the buyers aware of this color coding system at everywhere to implement a successful and healthy marketing practice in the country.

Key words: Awareness, Health consciousness, Sugar level, Traffic Light Color Coding System

INTRODUCTION

The growing occurrences of non- communicable diseases are rapidly increasing due to high sugar levels. In Sri Lankan context, more than 40 percent of people are suffering from diabetes or pre- diabetes still, more than 13 percent of children, some below twelve years are now being

diagnosed as pre diabetes. According to stop the non- communicable diseases in Sri Lanka, The Ministry of health had announced a ‘Traffic Light Color Coding System.’ This system had introduced three colors in order to demonstrate its sugar level. Red, Amber and Green are used to give an illustration of the meaning: the red color indicates that high sugar, amber color indicates the medium sugar level and green is displayed to signify low sugar and sugar free soft drinks with healthiest choices. The implementation of this kind of rule is very important as a step to promoting the buyer health and education. Normally, lower socio-economic groups have lack nutritional knowledge and health literacy. The use of these kinds of symbolic colors and text on the labels provide to identify the nutrition level of soft drinks.

Soft drinks are considered as sugar sweetened carbonated or non- carbonated water based beverages that contain natural or artificial flavoring. The sweeteners which are used for soft drinks may be sugar, high-fructose corn syrup, sugar substitutes or some combination of these. A number of health issues are associated with the consumption of soft drinks. The use of soft drinks with high sugar drinks increases the risk of diabetes, heart disease, and other chronic conditions. Soft drinks soon grow up in every market place as a consumer product.

Traffic Light Color Coding System of soft drink industry in Sri Lanka

According to the rises of the number of diabetes cases, The Health Ministry of Sri Lanka had introduced Color Coding System for the soft drink industry based on the level of sugar content.

Traffic Light Color Coding System for soft drink industry is one of the regulation which was introduced by the Sri Lankan government for all soft drinks products containing sugar to display color codes according to the sugar content percentage used in the various soft drinks manufacturers. Deputy Director of the Food Control Administrative Unit of the Health Ministry, (Herath, 2017) said that bottles with the green coding will have low sugar content. Amber labeled bottles will have medium sugar content and the red label will be placed on drinks containing high sugar. Further, it explained that this coding system is based on the standard of World Health Organization. The survey was carried out in Western province had explored that sugar level, particularly among children higher than average. The Information from Director (Thilakaratne, 2017) the Consumer Affairs Authority’s explained that among 36 sample, most of them drink high sugar level. As stated by Thilakarathne, the regulation of introducing a color code will be useful for the public to be aware of the sugar content in the drinks they take. According to the Gazette of the Democratic Socialist Republic of Sri Lanka (03 May 2016) gazette notification with effect from 01st of August 2016, all soft drinks will

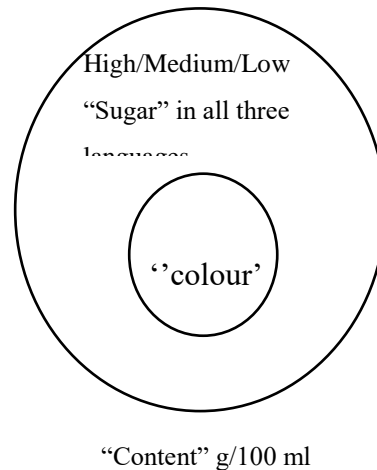
have mandatory color codes. The purpose of this decision is to educate the public and reduce the sugar amount and control the non-communicable diseases. This regulation had been introduced to the carbonated beverages; Ready to serve beverages other than milk based products, Fruit Nectar and Fruit Juices. In 2016, Minister of the Health said that gazette No 86 of 1980 to introduce a color chart indicating the sugar levels in bottles of soft drink would be implemented from August 01.

Sugar content for the Color Coding:

Column 1	Column 2	Column 3
(Sugar content) (per 100 ml of drink)	Relative Sugar Level	Colour Code
More than 11 gram	High sugar	Red
2 grams to 11 gram	Medium sugar	Amber
Less than 2 gram	Low sugar	Green

Table 1: Sugar content for the Color Coding (Source: Gazette of the Democratic Socialist Republic of Sri Lanka: 03 May 2016)

Further, the gazette had mentioned how the color code should be displayed on the package of soft drink bottles. According to the regulation, the diameter of the inner circle in the logo should be shown specifies the color relating to particular sugar level, shall not be less than 1 cm. The description shall comprise font size with the minimum height of 1.5mm and shall be legible and the description of the sugar level shall be indicated as high sugar, medium sugar or low sugar in all three languages.

Logo:*Figure 1: Logo*

(Source: Gazette of the Democratic Socialist Republic of Sri Lanka: 03 May 2016)

It is clear that the use of these kinds of color coding for soft drinks industry is effective to Sri Lanka as a developing country to avoid the health risk by increasing the literacy of health among public. However, when considering about these issues, the buyers not much aware about the Traffic Light Color Coding System of the soft drinks. Thilakaratne, (2017), Director of the Consumer Affairs Authority explained that the regulation of introducing a color code will be useful for the public to be aware of the sugar content in the drinks they take. A challenging problem which arises in this domain is the lack of awareness of the Traffic Light Color Coding System of soft drinks. On the other hand, as per the knowledge of the authors, no previous studies have investigated to identify the buyer’s awareness of Traffic Light Color Coding System introduced for packages of soft drinks among Sri Lankan buyers. Therefore, the present study is an attempt to bridge the research gap in this area.

Objectives of the Study

Based on the research gap, this study aimed to achieve the following objectives.

- To investigate how far the buyers have the awareness of Traffic Light Color Coding System introduced for packages of soft drinks.
- To identify whether the buyers have concerned about the color to determine the sugar level of soft drinks when making the purchase decision.

LITERATURE REVIEW

Color Coding practices and sugar content of Soft drinks

Displaying the information of nutritional level of food on label is help to make the food choices to consumer. (Verbeke et al.,2012).It means that these kinds of practices facilitate to the buyer in order to make the better purchasing decision. But in some aspect consumers may interest nutrition labeling but consumer do not use the information. (Hoefkens et al., 2011).Most of the time, the consumers draw their attention and interest towards some factors such as taste, price, and some nutritious details (Hoefkens et al., 2011). Gokhale (2016) mentioned that the use of this kind of simple color coding of packaging to share nutrition information is popular in developed countries like Australia, New Zealand and UK. As well as these label had been designed to give scientific advice to people in order to make healthier food choices. In this way,color coding practices for packaging use to indicate the level of sugar, fat, salt on the foods and beverages.According to some of researcher explained that the main ingredient of soft drinks is high sugar. Hu and Malik(2010) stated that soft drinks are non-alcoholic beverages containing basically water, flavor and a sweetener.Soft drinks are composed of 100% carbohydrates, with no protein and fats (low in cholesterol and saturated fats). According to Van der Horst, et al., (2007) defined sugar sweetened soft drinks as carbonated or non-carbonated water based beverages that contain natural sweeteners like table sugar (sucrose), high fructose corn syrup and concentrates of fruit juice (Brownellet al., 2009).

Most of the times, it is necessary to communicate and display about the nutrition level of product through the product labeling or packaging. The numbers of potential health risk are associated with the soft drinks (Duffett, 2017). Pacific(2012) assessed that health problem has been increasing due to the excessive consumption of high sugar soft drinks. Moreover, a cross-sectional study conducted by Hashem et al. (2014) found that among 169 carbonated sugar sweetened soft drinks in UK, the amount of free sugar and calories are higher in most of the drinks. Another interesting finding derived from the study of Varsamiset al. (2017) showed that as a comparison of the soft drinks in Australia, Europe and United States, Australia and Europe have somewhat similar conditions and in United States the level of glucose content in the soft drinks is lower than the other two regions.

Sugar content of Soft drinks and Human Health

When the buyers determine to buy the products, their perception and attitudes are playing major roles before buy. Once time the buyers are going to buy the soft drinks then their perception differs among individuals because some are trying to find extremely high sugar while others may identify the same food as not sweet at all (Renwick and Nordmann, 2007). But this study suggested that, the reduction of sugar sweetness of soft drinks would be important but sometimes it will not be useful because consumer who are willing to go for products that satisfy their taste. Duffett, 2017 had explained that a number of potential health risks are associated with the consumption of fruit juice products. The number of health problems like childhood obesity and overweight, lower bone mineral density, and diabetes cases are happened due to the daily consumption of sugar sweetened soft drinks. Cucoetal., 2003; Dhingraet al., 2007; Gartlandetal., 2003; James et al., 2004; Ludwig et al., 2001; Schulze et al., 2004). The consumption of sugar beverages increases overweight, obesity heart diseases, tooth decay (Malik et al., 2006) (Roos and Donly, 2002).

Consumption of sugar sweetened beverages is associated with weight changes in all ages (James and Kerr, 2005), especially for those who take one or more drinks per day (Schulze et al. 2004). Bergen and Yeh, (2006) reported that the consumption of more than one soft drink per day had affected to decrease the body weight of adults. And also high consumption of soft drinks is linked to the increase of coronary heart disease (Fung et al. 2009), low mineral density in adolescent girls (Gartland et al. 2003). It also reported that the risk of dental caries would increase especially for children (Renatha Pacific, 2012).

The study of Frederick and Obed (2017) revealed that most of the students had little knowledge on the nutrients contained in the soft drinks and most of them knew the nutritional implications of taking soft drinks but it did not deter them from practicing it.

METHOD

Sampling Plan

This research is purely done to examine the awareness of this traffic light color coding system for the buyers in Sri Lanka. Therefore, it is important to understand the individual perception towards this system. As such researchers selected one of the familiar area (Kekirawa Town) for this study to collect the detailed information without any limitations. As a result of this, 50 educated buyers were selected based on the purposive sampling method to enhance the validity.

Research Approach

Researchers follow an inductive method in nature in this explorative study. In this study, interpretive analysis has been incorporated to analyze the data. The data were collected through the effective qualitative data collection methods- personal interviews and the participant's observation. Since this research is especially dealt with the consumption patterns and the self-perception of buyers, it is appropriate to carry out this study in a qualitative manner. Further, it would be more rich fullness, if it is carried out through qualitative method to inter-relate with two objectives.

INTERPRETATION OF DATA AND FINDINGS

Since this research study incorporated the interpretative analysis in the qualitative research method. It is very important and obvious to elaborate each question asked from the interviewees and their responses to derive the findings.

In case of health consciousness of buyers when buying the soft drinks, approximately 30 percent of the buyers accepted in Kekirawa area that they consider about their health before buying the soft drinks. The rest of the 70percentof respondents never considered the health aspect but only they paid attention on their preferences. In the Kakirawa area, the sample respondents mostly preferred carbonated soft drinks but few of respondents are like to use the fruit juice and soft drinks with the natural tasty. That is to say, people's preferences are based on their habitual behavior taste. When the discuss about the factors to be considered when buying the soft drinks, respondents had mentioned that the tasty (sugar sweetened) of soft drinks, manufacturing and expire date, natural tasty, price, brand name, and ingredients. Moreover, quantity level, buyer needs, brand name, are considered as factors before buying the soft drinks. But approximately 20 percent of respondents consider about the sugar level as a factor when they make the purchase decision. In conclusion, the brand, buyer needs, price, and tasty can be identified as most influential factors for selecting soft drinks by the buyer rather sugar level. As similar to the health consciousness the buyers who considered the health consciousness totally agreed with the sugar level of the soft drinks too. To put it another way, some respondents consider about their health but they disagreed with consideration of sugar level when they are buying soft drinks.

Based on the information given by the respondents, it is understood that nearly 60 percent of people only have the awareness about this practice for soft drinks rather knowing that particular

three colors. Few respondents noted that these three colors but they failed to interpret the meaning of each color codes for determine the sugar level of soft drinks. Remaining was not aware of this color coding system.

The group of buyers who are aware of this system, responded that they come to know about this color coding system about one-year time period. From this interpretation, it is inferred that within the sample 50 percent are aware of this system. However, it is not adequate evidence in this research study.

After the information given by the interviewer only the respondents got clear awareness about this color coding system and all most everyone agreed that this is healthy marketing practices. In other words, most of the respondent highly accepted this practices as a healthy marketing practices. Otherwise, some had responded that this is not a healthy marketing practice due to the lack of awareness of buyers as well as other ingredients which are included in soft drinks on behalf of the low sugar. In the point of view of researcher, the buyers insisted that very small number of people which around their area have considered these practices due to some predetermined purposes. All the respondents agreed in this color coding practice as a positive signal to increase the health of buyers to avoid the disease and bad impact from the current and potential marketers of the soft drink industry. In this study, it had found that some suggestions from the respondent to further improvement of this color coding practices for the soft drinks industry. It is mostly highlighted that as a requirement of effective communication to promote this practices among the public. To put it another way, publicity is essential via the mass media like television, posters, social media, print media like newspapers, brochures as well as it was suggested that the importance of public relations tools for the promotion. Specially, the respondents demonstrate the importance of the awareness to the school children because most of the time school children have addicted to use the soft drinks as a habit. To that end, promotion program can be conducted through the school level. According to the explanation of the respondents, the highlighted matter for this practice is given perfect awareness to the public to facilitate the buyer purchasing decision on soft drinks because the lack of awareness is a one of reason behind this practice. Further, some had suggested that it is need to certify these three colors related with the standard sugar level rather using it as a marketing practice. Government should impose regulations to the manufacturer is a compulsory one. The most compelling argument id presented by the respondents is that the color coding practice can be identified as a good habit to avoid the non- communicable diseases with the clear awareness only. Further, the respondents explained that soft drinks can be considered as drinks for the

human thirsty. Based on that, it should be marketed in the healthy way. In the view of respondents, another key point to remember that the size of the symbol of color code should be maximizes on the package as it easy to show and to identified by the people in the market premises. In conclusion, 95 percent of the people have identified that this color coding practices as effective health practices in the soft drink industry.

CONCLUSIONS

The Traffic Light Color Coding system seems to apparent in almost as important practices to reduce the non-communicable diseases of the people and avoid the arising problem in future generation in Sri Lanka. Most of the research in the color coding practices for soft drinks highlighted that the importance of displaying the information of nutrition level including sugar level helps to make better purchasing decision. This exploratory research investigated on the awareness of Traffic Light Color Coding system for packaging of soft drinks among the Sri Lankan buyers with objectives of to identify how far the buyers have awareness of Traffic Light Color Coding system for packaging of soft drinks and identify whether the buyers have concerned about the color to determine the sugar level of soft drinks when making the purchase decision.

As researchers considered all the above aspects, it seems that the buyers have lack of awareness regarding the Traffic Light Color Coding system. Nearly 60 percent of people only have awareness about this practice for soft drinks rather knowing its meaning. As well as few respondents know about the color rather than knowing its meaning related with particular sugar level. In conclusion, it is evidence that the respondents in the study mostly consider about the brand name, buyer needs, tasty, manufacturing and expire date rather sugar level. But approximately 20 percent of the respondents in this study had mentioned that they consider about the sugar level when they are buying the soft drinks.

RECOMMENDATIONS

In this study, it was found that lack of awareness of buyers regarding the Traffic Light Color Coding system. This study suggests that a strong marketing campaign is needed to make the buyers aware of this color coding system at everywhere to implement a successful and healthy marketing practice in the country. It is important to promoting awareness through information campaigns and addressing environmental cues related to soft drink consumption. Most of the time soft drinks are used by the youngsters. Marketers and the Government have responsibility

to take advantage of new interactive digital media platforms (internet, social media, and mobile) to reach younger buyers as well as they can conduct the awareness program through appropriate authorities. Content Marketing can also be used to launch the awareness programs. Content marketing is a marketing technique of creating and distributing valuable, relevant and consistent content to attract the target audience. Based on that, the soft drinks manufacturer can create small content regarding this color codes and publish it as videos, case study, images, white papers, slides share in online basis. Older buyers could still be reached by more traditional above-the-line advertising channels (television, radio, newspapers, and magazines). Promoting and displaying these three colors at shopping center, restaurants and fast food areas can help people who drink and buy frequently to identify about it. Therefore, easy-to-use and get the clear nutrition information during food ordering are essential as buyers can make informed food choices. The size of the symbol of color code should be maximizes on the package as it easy to show and to identified by the people. As a government policy, it is need to the government to give more awareness to the public regarding this color codes and their sugar level by showing the impact on health effects caused by consumption of soft drinks. The marketing point of view, marketers can use this color coding not only demonstrate the safety and sugar level of the soft drinks, but can also use to make a good impression to the package of it. In order to check the effectiveness of this color code practice, the long prospective studies are also needed. Therefore, future researches are recommended to maintain a healthy consumption pattern by buyers.

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Contribution of Green Marketing in Creating Sustainable Organization

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Abstract

This paper reviews the relationship between green marketing and organizational sustainability. In order to achieve the review objectives, a systematic review of literature was conducted by using an archival method. This review process has used more than fifty research papers which are relevant to reviewed concepts. Findings of the review suggest that there are positive relationships among the green marketing and economic performance, green marketing and social performance and green marketing and environmental performance. Overall findings of the review suggest that green marketing has power to create organizational sustainability by equally contributes to economic, social and environmental performance. Finally, this review proposes a conceptual model which is useful to test and understand the relationships among the reviewed concepts empirically in the future.

Keywords: Green marketing, economic, environmental, social, sustainability

INTRODUCTION

The globalization of the economy, increased social and environmental awareness, media attention and pressure of multiple stakeholder groups have raised the importance of sustainability (Einwiller et al., 2016). Hence, organizations and business around the world strive to adopt sustainability as one basic pillar of their operational model to contribute to sustainable development. Fundamentally, sustainability deals with three types of performance dimensions such as economic (financial), social and environmental performance which are necessary for the environment as well as organizations (Elkington, 1997). In this context, increasing numbers of organizations appear willing to report their economic, social and ecological sustainability performance (Schaltegger and Wagner, 2006) and this is further supported by the growth in reporting standards such as the global reporting initiative (Ehnert et al., 2016).

In this scenario, organizations increasingly required to focus on creating, identifying and implementing the sustainable management practices which simultaneously contributes to the economic as well as social and environmental performance. In the contemporary business

environment, most of the organizations are paying the great attention on environmental protection and management to gain sustainable competitive advantage. On other hand, rising environmental awareness has led public actors and regulatory bodies to expand the corpus of environmental law and has led firms to invest in their environmental management systems to improve their reputation and reduce the risk of environmental disasters (Kassinis and Vafeas, 2006). Thus, organizations are implementing several green practices such as green human resource management (green HRM), green marketing, green accounting, and green management to reduce the ecological footprint. Among these green practices, green marketing is considered as the essential tool to improve the environmental sustainability of organization. Green marketing is defined as the management process responsible for identifying, anticipating, and satisfying the requirements of customers and society in a profitable and sustainable way (Welford, 2000). In this context, some researchers revealed that, green marketing also has the capacity to contribute to the development of economic and social performance of organizations (Rettie, et al., 2012; Miles and Covin, 2000; Menck and Olivera, 2014; Woolverton and Dimitri, 2010; Font and McCabe, 2017; Liskova et al., 2016; Mathur and Mathur, 2000; Chia-Jung and Pei-Chun, 2014).

In this context, there is a need to explore the relationship between green marketing and organizational sustainability theoretically and empirically. Even though, green marketing equally contributes to enhance the economic, social and environmental performance of organizations. The existing literature mainly deals with the contribution of green marketing on enhancing the environmental performance of organization rather than its relationship with social and economic performance. Most of the studies only revealed the relationship between green marketing and environmental performance (Paco et al., 2014; Grundey and Zaharia, 2008; Peattie and Crane, 2005; Souza et al., 2015; Ottman et al., 2006; Chan, 2014; Song-Turner et al., 2014; Smith and Brower, 2012; Graci and Dodds, 2008; Chan and Han, 2014; Grant, 2008; McDonagh and Prothero, 2014). (Paco et al., 2014; Grundey and Zaharia, 2008; Peattie and Crane, 2005; Souza et al., 2015; Ottman et al., 2006; Chan, 2014; Song-Turner et al., 2014; Smith and Brower, 2012; Graci and Dodds, 2008; Chan and Han, 2014; Grant, 2008; McDonagh and Prothero, 2014). Previous studies failed to report the social and economic aspects of green marketing beyond the environmental aspects. However, the clarity is needed in how green marketing can play an active role in determining the economic, environmental and social performance to enhance the organizational sustainability. The aim of this article is to present: a literature review on the importance of green marketing for the development of

sustainable organizations. Therefore, researchers conduct current study to fill this gap in and attempt to add knowledge to, the existing literature. The findings of this review may be useful in testing these relationships empirically in this field and pave the way for the future researchers to further explore these relationships.

This article is structured as follows. Next section provides method of review, third section presents the review of the relevant literature about green marketing, economic performance, environmental performance and social performance and propose the prepositions. Next, based on the literature review and discussion, this paper proposes a conceptual model and finally, it ends up with conclusion.

METHODOLOGY

In order to achieve the review objectives, a systematic review of literature was conducted by using the archival method as recommended by Tranfield and others (2003). In consideration of nature and objective of this review, methodology proposed by Tranfield and others is considered as most appropriate, since they suggest how to conduct a literature review systematically by using an archival method, which enables the reviewer to structure research and build a reliable conceptual framework and knowledge base in this research area. This review process includes classifying the literature from the sources such as journal articles, edited works, and other research papers relating to the review topic, analyzing, reflecting and reporting the findings of the review. This review considers the research works on and related with 'Green Marketing' appeared in the literature. This review has used the archival method for data collection, because it enabled the researchers to structure research and builds a reliable knowledge base on existing literatures on and related with Green Marketing and also applied reflections.

LITERATURE REVIEW

Green Marketing and Environmental Performance

Environmental protection become an increasingly focus of activity because of the specific environmental threats such as bad weather, rising global temperature, melting ice, accumulating greenhouse gases, encroaching seas, inundated coastal lines and many more (Ahmad et al., 2009). In order to respond these issues, organizations are increasingly required enhance their environmental orientation to reduce their negative environmental impact as well

as increase the positive environmental impact (Thevanesand Arulrajah, 2018). In this context, green marketing is a critical area of green practices which highly contributes to improve environmental orientation of organization.

Green marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment (Grundey and Zaharia, 2008). This explanation indicates that green marketing plays a pivotal role in unleash the environmental performance of organization. Hence, nowadays, organizations turn their spot light on creating and implementing green marketing mix to gain the competitive advantage. Green marketing includes ecologically safer products, recyclable and biodegradable packaging, energy-efficient operations and better pollution controls. Further, Mathur and Mathur (2000) used four categories of green marketing: (1) green products (2) recycling (3) green promotions and (4) appointment of environmental policy managers to analyze the wealth effects of green marketing strategies. Ginsberg and Bloom (2004) used the primary marketing-mix tools of product, price, place, and promotion (4Ps) to divide green marketing into four main strategies: (1) lean green strategy (2) defensive green strategy (3) shaded green strategy and (4) extreme green strategy. These, practices and strategies are really fruitful in improving green image of the organization.

A majority of consumers have realized that their purchasing decisions have a direct impact on ecological problems around the world (Laroche et al., 2001). In this sense, they are willing to buy and ready to pay more for green products to prove their environmental responsibility and accountability (Paco et al., 2014; Mainieri et al., 1997, Mattijssen et al., 2018; Kim et al. 2012). Specifically, findings suggest that the majority of consumers prefer such environmental household product benefits as safe to use around children, no toxic ingredients, no chemical residues, and “no strong fumes over such benefits as packaging can be recycled or not tested on animals (Ottman et al., 2006). Hence, organizations are paying a great attention on producing green products such as hybrid automobiles, eco-friendly paint, organic foods, energy efficient electronic equipments, recycled copy paper and environmentally friendly cleaning products to attract the environmentally oriented customers (Paco et al., 2014).

Further, high-level usage of polythene, plastic and paper is creating major threats to the natural environment. Researchers indicated that package of the product should be effective to protect

and balance the bio-diversity and realizing the needs of eco-system. Thus, government and other environmental regulatory agencies emphasized the organizations to reduce the polythene, paper and plastic usage. In order to respond this issue, organizations adopting several green packaging practices such as recyclable and biodegradable packaging, flat packing, providing paper bags instead of polythene bags, using recycled paper, phosphate-free detergents, refillable container for cleaning product and bottles using less plastic and etc. (Ajike et al, 2015). For instance, IKEA (famous furniture exporting company in the world) incorporates environmentally friendly efforts into day-to-day business and continuously supports initiatives that benefit causes such as children and the environment. To cut transportation costs, IKEA uses flat packaging; customers assemble the products at home. Beyond, reducing the transport cost of the company, this practice really contributes to reduce the ecological footprint by mitigating the fuel consumption of the organization. In addition to that, some organizations have mentioned green awareness slogans and jargons in their products to emphasis the importance of environmental protection and management to their customers which turn leads to enhance their environmental responsibility. Cherian and Jacob (2012) suggest other factors that can contribute to persuade consumers to purchase green products: environmental awareness, the information available on environmental themes, green advertising promoted by companies and the range of green products made available.

In the technological environment, display marketing, social medial marketing, affiliated marketing, search engine marketing, e-mail marketing, mobile marketing, pay per click marketing and content marketing are the digital marketing techniques apply by the organizations to fulfil the consumer's needs and wants. These new trend marketing techniques contribute to mitigate the ecological footprint of organizations by reducing the paper, plastic, polythene usage. Further, these practices also contribute to enhance the positive environmental image by reducing the marketing related transportation of the organizations. Beyond that, organizations are creating and implementing several innovative green marketing practices and initiatives to prove their environmental responsibility and gain the sustainable competitive advantage. Nowadays, most of the Sri Lankan organizations highly committed to adapt green marketing practices and initiatives, ultimately reflects in reducing the negative environmental impacts of the organizations. In overall, this trend improves the environmental performance of organizations. Therefore, this review proposes a preposition:

Proposition 1: Green marketing contributes to improve the environmental performance of organization.

Green Marketing and Economic Performance

According to Jabbour and Santos (2008), performance in innovation is an important aspect for an organization to enhance the economic performance. Miles and Covin (2000) suggested that requirements to improve financial and environmental performance simultaneously encourages firms to seek innovative ways to use green marketing as a source of enhancing reputation, competitive advantage and ultimately financial performance. In addition to that, Smith and Brower (2012) indicated that, organization can gain the advantage over competitors by being aggressive and innovative on the green frontier. In this sense, organizations are creating and introducing several green marketing strategies and practices in order to satisfy the customers. Further, researchers revealed that, customers are willing to pay more for environmentally friendly products (Kapelianis and Strachan, 1996; Laroche et al., 2001). For instance, nowadays customers preferred more organic products rather than artificial products. In general, organizations set higher prices green products and customers also ready to pay that, ultimately, these trends lead to enhance the profitability of the organization. Through this organization, it can be improved environmental quality and customer satisfaction (Ottman, et al., 2006).

Manaktola and Jauhari (2007) stated that green marketing practices can increase its competitiveness by helping to position it differently in the competitive arena. In addition to that, Wymer and Polonsky (2015) suggest that greening of production can lead to cost-savings or to greater profit through adding value or increasing the competitiveness and attraction of the firm to the market. Organizations which are not complying with environmental rules and regulations are typically forced to pay punitive fines or charges, and/or may suffer erosion of competitive position due to the reputational damage. Finally, this leads to reduce the profitability of organizations. Thus, organizations may reduce these negative effects by adopting green marketing initiatives, practices and strategies which turn leads to enhance the financial performance through the unleash the sustainable competitive advantage.

Beyond that, organizations adopting several innovative marketing strategies such as display marketing, social media marketing, affiliated marketing, search engine marketing, e-mail marketing, mobile marketing, and content marketing to reach their customers. These marketing

strategies are more effective and efficient green marketing strategies compared to traditional marketing strategies. For instance, in Sri Lanka, there were 6.7(32%) million people are internet users and 6 million (29%) people actively using the social media (Hootsuite report, 2018). Hence, Sri Lankan organizations can access the vast number of customers easily through the digital marketing. Further, it is possible to reach the 6 million Sri Lankan people through adapting social media marketing. In addition to that, these methods provide several benefits to the organizations such as get the feedback immediately, capital reduction, easy to check whether marketing tool is effective or not, result maximization, easy to access the target customers and etc. Finally, these trends definitely contribute to enhance the profitability and reduce the negative impacts environmental impacts by reducing the paper, paper and plastic usage and mitigate fuel consumption.

In this context, Miles and Munilla (1995) have also indicated that more and more progressive companies are following an “eco-marketing” orientation in an effort to gain a competitive advantage by positioning their products in the emerging “green consumer” segment. Further, several researchers have identified various benefits of green marketing, which includes better brand and reputation (Lawrence, 1991; Porter and Linde, 1995), and better profitability and return on investment with robust sources of competitive advantage. Hence, green marketing practices are highly recommended green practices to achieving these economic goals of organizations. Therefore, most of the famous companies such as IKEA, Apple, Coca-Cola and more adopt green marketing to improve the environmental management system of the organizations to enhance the environmental³ and economic performance. Thus, green marketing practices are considered as the critical and essential components to enrich the economic performance of organizations. According to the above literature, this review establishes that green marketing has a positive relationship with economic performance as a second preposition of this review:

Preposition 2: Green marketing contributes to improve the economic performance of organization.

Green Marketing and Social Performance

Corporate social responsibility (CSR) initiatives have become the hot topic in the field of modern management. Further, a business that makes nothing but money is considered as the

poor kind of business. This statement clearly emphasizes the importance of CSR of organizations. Because of the increasing awareness of the importance of CSR, companies appear to be bringing the concept of CSR into marketing programs (Hoeffler and Keller, 2002). CSR is defined as the obligation of a business to maximize its positive impacts and minimize its negative impacts on the society. CSR is concerned with the ways in which an organization exceeds the minimum obligations to stakeholders specified through regulations and corporate governance (Johnson et al., 2008). In simpler words, CSR is defined as the fulfillment of the expectations of the organization's stakeholder groups (e.g. consumers, employees, investors, communities, government, environment, etc). In this context, several researchers argued that most of the organizations began using CSR as a marketing tool in order to enhance the corporate financial performance. Moreover, Mass (2016) argued that environmental performance of an organization paves the way to improve the social performance of an organization. On a more general basis, the theme of environmental orientation is treated under CSR, along with many categories of society-related issues. On the other hand, Wood (1991) pointed out that lack of investment on CSR may represent hard-to-overcome threats to the corporate image, hard-to-recover losses of markets, reduction of support by stakeholders, and consequently the eventual death of the organization. Many firms are beginning to realize that they are members of the wider community and therefore must behave in an environmentally responsible fashion, thus resulting in environmental issues being integrated into the firm's corporate culture.

The rising demand for CSR leads to the application of environmental tools of green marketing (Peattie, 1995; El-Ansary, 1974; Kotler, 1972; Prothero, 1990; Peattie and Crane, 2005; Peattie and Peattie, 2009). In other words, organizations may prove their environmental concern by adopting the green marketing practices such as creation of green products and services, green packaging and green labelling, and etc. Hence, green marketing is termed as one of the crucial socially responsible actions of an organization which not only benefits the organization but also the society.

In general, nowadays most of the food manufacturing organizations are adding high-level toxic chemicals, artificial sweeteners and food preservatives to increase the taste and preserve the food for a longer period. These chemicals are very harmful to the health of the customers. In addition to that, evolutionary psychology predicts that individuals are motivated to continue their own gene pool and protect their young (Buss, 2004) when media give shocking information about products that are not organic or green, it pushes consumers to buy in order

to protect their children from real or perceived harm (Hjelmar, 2011). Thus, recent days, customers are raising the higher demand for green products to improve their health and safety by eliminating the diseases which are caused by highly toxic chemical added artificial foods and fast foods. In this sense, one of the objectives of green banking is to persuade the consumers to buy green products and to inculcate the habit of participating in practices of reuse and refilling of products fulfill the ethical and moral responsibilities (Paco et al., 2014). Most environmental products are grown or designed to minimize or eliminate the use of toxic agents and adulterating processes, market positioning on consumer safety and health can achieve broad appeal among health-conscious consumers (Ottman et al., 2006). Ultimately, this contributes to prove the CSR of organizations by enhancing the health and safety of their customers.

Increasing usage of polythene, plastic and paper usage are extremely hazardous to the natural environment and human lives. In general, organizations highly contribute to increase the usage of polythene and plastic through their products and services. One example of this is where McDonald's is often blamed for polluting the environment because much of their packaging finishes up as roadside waste. In this sense, Governments are investing more for the waste management projects. In order to respond this issue, organizations strive to take the route to progressively and effectively achieve significant reduction in polythene and plastic usage by adopting green packing practices such as recycling packaging and bio gradable packaging. An example of a firm that promote its environmental initiatives is Coca-Cola which invested large sums of money in various recycling activities, as well as having modified their packaging to minimize its environmental impact (Lal, 2015).

Green marketing is practices by the many of organization to making effort to sustainable development and it recognized to do attractive business to the consumers. Susan (2018) explained that business can increase the brand loyalty among social conscious consumers by demonstrating a high level of social responsibility. In social perspective, green marketing can be used to increase the publicity of the organization. If the marketers have ability to show them as "greener", it will be impact to enhance the public relation. Green organizations can be position as a socially responsible organization because they can promote its CSR by going green. (Rizwana, 2016). Corporate advertising about the green concerns regarding the wild life protection, recycling, environmental clean help to achieve the social image. Other CSR like allocating fund for planting trees, donations provided for various animal conservation

programs, conducting awareness programs can help to achieve the social sustainability of the organization. Beyond that, organizations take several efforts to improve the environmental responsibility of customers by publishing green messages in their products labels. In overall, this trend improves the social performance of organization. According to the above literature, this review establishes that green marketing has a positive relationship with social performance as a third preposition of this review.

Preposition 3: Green marketing contributes to improve the social performance of organizations

DISCUSSION

Organizations maintain a strong commitment to show and report their economic, social and environmental performance to ensure the organizational sustainable performance. Hence, organizations turn their spot light on identifying, creating and implementing the sustainable management practices to confirm their organizational sustainability. In this context, sustainable management practice(s) should have ability contribute economic, social and environmental performance of an organization equally. Based on the criteria of sustainable management practice, this review has identified green marketing as the one of the sustainable management practices. Based on the cited literature, it is possible to conclude that green marketing has power to equally contribute to the economic, social and environmental performance of organization. Thus, green marketing can be termed as the sustainable marketing. In this review process, in addition to the available literature support, the reviewers have given some generally acceptable logical justification to validate or prove why green marketing can be considered as sustainable marketing practice. This review clearly pointed out sustainability contribution of green marketing. The following Table 1 shows contribution of green marketing to the organizational sustainability.

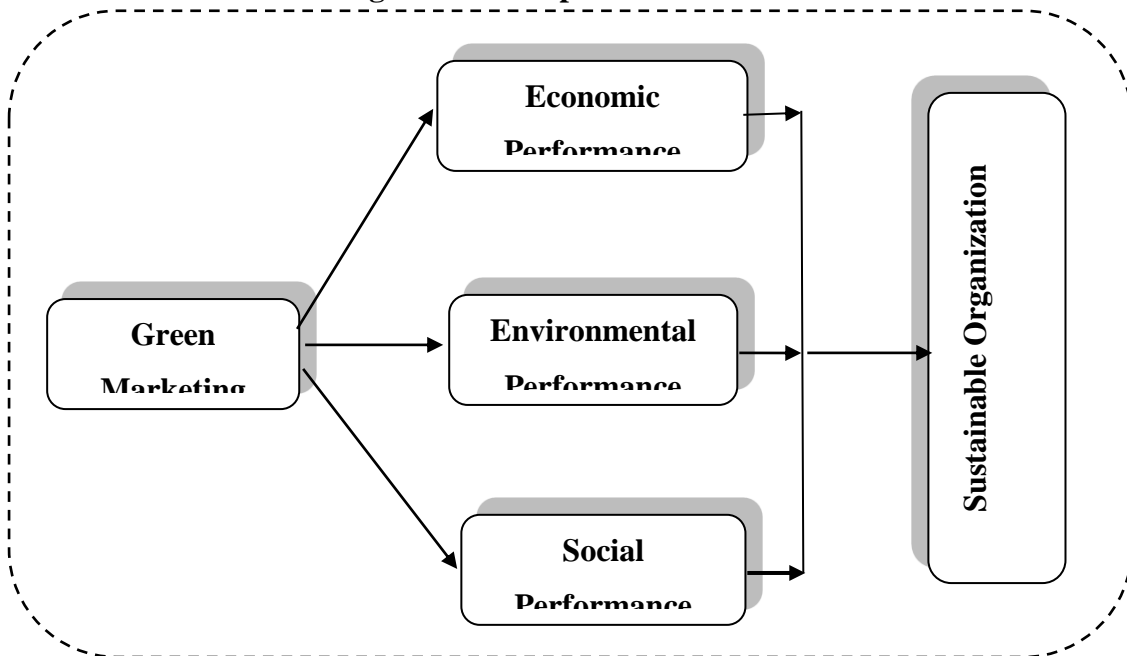
Table 1: Contribution of Green Marketing to the Organizational Sustainability

Economic aspect	Environmental aspect	Social aspect
<p>Reducing organization's marketing expenditure (e.g. transportation, accommodation etc.).</p> <p>Improving the profitability by respond to green consumerism.</p> <p>Contribute to access more customers through green marketing strategies (e.g. social media marketing, search engine marketing).</p> <p>Improving the competitive advantage by enhancing social and environmental image.</p> <p>Getting higher profitability by setting higher prices for green products and services.</p>	<p>Supporting eco-innovation, material, energy and water savings, etc.</p> <p>Reducing the paper, plastic and polyene image</p> <p>Improving the green image and green reputation</p> <p>Contributes to compliance with local and international laws.</p> <p>Reduce the carbon footprint of organization</p> <p>Reduce the fuel consumption by reducing the market related transport</p>	<p>Improving the health and safety of through the green products</p> <p>Contributes to enhance the waste management system by reducing the paper, plastic and paper usage.</p> <p>Contributes foster green behaviors among the community through the green awareness messages</p> <p>Supports to the green projects such as tree planting under the green CSR projects.</p> <p>Contribute to create green environment by reducing the environmental pollution.</p> <p>Improving the social image of the organization</p> <p>Satisfy the needs and wants of stakeholders</p>

Based on Table 1, this review provides evidences to accept the green marketing has power to be considered as sustainable management practice. Hence, green marketing can be termed as sustainable marketing. Thus, findings of the study suggested that organizations can apply the green marketing initiatives and practices to enhance the organizational sustainability in order to contribute to sustainable development. In this context, green marketing really supports to gain the sustainable competitive advantage.

Further, based on the review, this paper proposes a conceptual model that shows the relationship between green marketing and organizational sustainability (economic, social and environmental performance) (see Figure 1).

Figure 1: Conceptual Framework



(Developed for the study purpose)

CONCLUSION

This review suggested that green marketing can be treated as the sustainable marketing practice in order to contribute to economic, social and environmental performance to unleash the organizational sustainability. The identification and exploration are based on literature support as well as reviewers' reflections. Theoretically, green marketing must produce results in three dimensions of sustainable development. In practice, further studies need to identify whether organizations really practicing green marketing practices or apply the practice of green washing to create the image of green organizations for business gains. This review has proposed a conceptual model which is useful to test proposed prepositions in this review empirically in the future.

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Factors Impacting Purchase Intention toward *Shariah* Compliant Hotels: An Empirical Investigation on Muslim Consumers' Hotel Patronizing Behaviour

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Abstract

With the increasing number of Muslim tourists, the implementation of Shariah Compliant Hotels (SCH), in the hospitality and tourism industry, has emerged as an important issue. Shariah compliance has become an integral factor that affects Muslim consumers' choice of hotels. Henceforth, the current research has been crafted primarily to investigate the factors that may affect Muslim consumers purchase intention of Shariah compliant hotels. Particularly, this study attempts to determine the association between halal image, halal awareness, religiosity, service quality and purchase intention of Shariah compliant hotels. For the purpose of attaining these objectives, a conceptual framework has been derived in accordance to the findings of prior literature. Later on, as the study is quantitative in nature, primary data have been collected through the employment of self-structured questionnaire from Muslim travelers in Malaysia particularly, Kuala Lumpur. The collected data were later analyzed through the means of Statistical Package for Social Sciences (SPSS). From the statistical analysis a number of meaningful findings were derived. The outcomes of the study revealed that halal image, halal awareness as well as religiosity are significantly related to Muslim consumers purchase intention toward Shariah compliant hotels whereas; service quality is not significantly associated to purchase intention. The findings of the study will be of great importance to marketers and hoteliers for developing effective strategies in order to cater to the needs of the Muslim consumers. From an academic perspective, the study will open the door for conducting more researches on Shariah compliant hotels in the future.

Keywords: Shariah compliant hotels, purchase intention

INTRODUCTION

In recent time, there has been a growing interest in trying to understand the association that exists between Islamic principles and the consumption patterns of the Muslim consumers. This has paved that way for a strong interest in Islamic marketing among academicians and researchers. Much effort is being invested by marketers in different parts of the world in order to tailor their products as well as services for meeting the needs as well as demands of the Muslim market. One of the main reasons for such occurrence relies on the reason that, the Muslim market has been identified as an emerging market that is relatively untapped. Therefore, this respective group of consumers reflect a viable segment that has much potential to be further served by marketers. The needs of the Muslim consumers that are shaped by their religious beliefs significantly affect the aspect of tourism as well (Henderson, 2003). Muslims

are obligated to remain committed to the principles of *halal* and *haram* in their daily lives as well as when they are travelling. For Muslim travellers compliance with religious obligations is of immense importance even when they are away from home, particularly in terms of accommodation. For this reason, Islamic values and principles have been applied in the hotel industry in order to meet the demands of the Muslim travellers. The concept of *Shariah* compliant hotels has become as a vital element of Islamic tourism. *Shariah* compliant hotels are generally known as hotels that are created in order to meet the needs and demands of the Muslim consumers by providing them services that are in line with *Shariah* principles.

The tourism industry is experiencing intense competition in recent time. With the growing number of Muslim travellers, the aspect of accommodation has become an important issue for Muslim travelers. Muslim consumers encounter various problems in the event of traveling to foreign countries and they are in great need of hotels that have been created following the principles of Sharia. The inability to adhere to their religious obligations when travelling may create a dilemma for Muslim travellers (Zamani-Farahani and Henderson, 2010). When destination hosts are unable to provide Islamic facilities and attributes it discourages Muslim consumers from visiting certain destinations (Battour and Battor; 2010). In order to retain the emerging Muslim segment, satisfying their religious needs by delivering services that are *Shariah* compliant has become a necessity for tourism service providers and destination marketers. However, as a review of literature has revealed that there is a scarcity of studies when it comes to Muslim consumers purchase intention of *Shariah* compliant hotels. When it comes to the purchase intention of Muslim consumers, the aspects of *halal* image, *halal* awareness, and religiosity are of utmost importance. Moreover, service quality also plays in integral role in influencing purchase intention. However, limited are the studies that have investigated the effects of these factors on Muslim consumers purchase intention of *Shariah* compliant hotels. Moreover, the concurrent effect of *halal* image, *halal* awareness, religiosity and service quality is yet to be examined on purchase intention of *Shariah* compliant hotels. Hence, in order to fill this gap in contemporary literature, the current study has been developed with the main purpose of investigating the factors that may affect Muslim consumers purchase intention of *Shariah* compliant hotels. The specific objectives of the study are:

1. To identify the effect of *halal* image on purchase intention of *Shariah* compliant hotels
2. To examine the effect of *halal* awareness on purchase intention of *Shariah* compliant hotels.
3. To assess the effect of religiosity on purchase intention of *Shariah* compliant hotels.

4. To determine the effect of service quality on purchase intention of *Shariah* compliant hotels.

LITERATURE REVIEW

***Halal* Image and Purchase Intention**

Halal is an Arabic word which denotes permissibility under the religion of Islam (Deuraseh, 2009). From a marketing perspective, the term *halal* is often used in order to disclose the permissibility of a particular product (Lada et al., 2009) or service (Suki and Salleh, 2016) in accordance to the principles prescribed in the Holy Quran and *Shariah*. The aspect of *Halal* is highly taken into account by Muslims as statistics have reported that the *halal* standard is followed by 70% of Muslim consumers globally (Lada et al., 2009). When it comes to consumers' decision making process from an Islamic perspective, *halal* image refers to the perceptions that are held by consumers regarding the brand characteristics that are retained in their memory in regards to their religious concept, and later on it directs their purchasing habits (Suki, and Salleh, 2016). Prior studies have demonstrated that when consumers possess favorable perceptions towards a particular organization there is a higher probability that they will remain loyal to the very organization (Nguyen and Leblanc, 2001). Likewise, permissibility in Islam is strongly taken by Muslim consumers as Islamic values have profound impact on Muslim societies which in turn affect their social etiquette along with choice of consumption (Khraim, 2010). Past research has indicated that Muslim consumers revealed a profound desire to associate their purchasing patterns with *halal* images by refraining from any act that is related to non-*halal* images (Suki and Salleh 2016). The findings of the study undertaken by Suki and Salleh (2016) revealed that when it comes to Muslim consumers the aspect of *halal* image is meaningfully correlated to their intention of patronizing to *halal* stores. Taking into account the findings of prior studies, it is hypothesized that:

Hypothesis 1: Halal image has a positive effect on purchase intention of Shariah compliant hotels.

***Halal* Awareness and Purchase Intention**

The term *Halal* awareness refers to anything that is considered to be acceptable as well as permissible for Muslims (Eliasi and Dwyer, 2002; Awan et al., 2014). According to Azam (2016) the term awareness refers to a person's knowledge as well as understanding of a given situation or matter. It has been further explained by him that when it comes to the notion of *halal*, the word awareness literally denotes possessing special interest or being experienced with something as well as well-informed regarding certain occurrence in relation to consumer

decision making pertaining to consumption of halal products. When making a purchase Muslim consumers are highly aware of different aspects associated with the product which includes the contents, processes along with other sources as well as determinants associated with it (Said and Hassan, 2014). With greater awareness as well as knowledge about *halal* consumption it is believed that Muslims in current time are living a life that is more holistic, as a result of which marketers are no longer able to just print a halal logo of the packaging of their product and get away with the issue (Said and Hassan, 2014). Therefore, awareness is one of the leading aspects that is highly taken into consideration by Muslim consumers in the event of consuming halal label products, particularly in Muslim countries like Malaysia (Teng and Wan Jusoh, 2013). Similar findings were also demonstrated by other researchers as they found that Muslim consumer's awareness is significantly associated with their intention to purchase products along with their religious beliefs and halal certification (Majid et al., 2015). The results of the study undertaken by Yunus et al., (2015) demonstrated a meaningful congruency between the facets of *halal* awareness and Muslim consumers' willingness to purchase *halal* packaged food manufactured by non-Muslim organisations. A positive relationship between awareness and intention of purchasing *halal* branded products was also found by Ghadikolaei (2016). In view of this, the next hypothesis is proposed:

Hypothesis 2: Halal awareness has a positive effect on purchase intention of Shariah compliant hotels.

Religiosity and Purchase Intention

Religiosity, or in other words an individual's religious commitment, is referred to as the degree to which a person is devoted to the principles his or her religion which in turn, is mirrored in their attitude as well as behaviour (Ramly et al., 2008). Religious commitment is indeed the key influencer for both Muslim and non-Muslim consumers' consumption pattern as it guides individuals' behaviours throughout their lives and assists them in making the correct decisions (Salman and Siddiqui, 2011). Therefore, religion plays a crucial role in the field of consumer behaviour (Sun et al, 2012). As stated by Rehman and Shabbir (2010), religion helps people to differentiate between the prohibited and non-prohibited products. The behaviour and attitude of the consumers toward the selection, purchase and consumption of products depends on how committed they are to their religion (Kharim, 2010). The findings of prior studies demonstrated that Muslim consumers' religiosity is one of the most vital elements that is associated to their intention of purchasing products as well as services (Shaari and Mohd Arifin, 2009; Said and Hassan (2014), Jamal and Sharifuddin (2015); Mukhtar and Butt (2012), Borzooei and Asgari

(2013). The findings of the study undertaken by Shaari and Mohd Arifin (2009) demonstrated that in the event of purchasing halal products consumers' religious beliefs are one of the most vital elements as there was a significant association between the two respective facets. From a similar standpoint, religious commitment has also been proven to be significantly affiliated with halal consumption based on the study done by Said and Hassan (2014). In regards to the above discussion the hypothesis stated below has been derived:

Hypothesis 3: Religiosity has a positive effect on purchase intention of Shariah compliant hotels.

Service Quality and Purchase Intention

Researchers have asserted that in the intensely competitive environment of the modern time, the aspect of service quality has emerged as a vital strategic element for organizations trying to prosper as well as attain long term survival (Hume, 2008; Chaker and Jabnoun, 2010). Under such circumstances, it has been claimed that the elements of customer satisfaction and retention share a favourable relationship with the level of service quality that is offered to the customers whereby, superior level of service quality carry positive effects on customer satisfaction as well as retention (Chaker and Jabnoun, 2010). One of the most renowned models that is used to gauge service quality is widely known as the SERVQUAL model was initially developed by Parasuraman et al., (1985). This model is universally recognized as the most extensively employed model in terms of assessing service quality (Chaker and Jabnoun, 2010) and it has been applied in the different sectors of the service industry (Amin and Issa, 2008). The SERVQUAL model comprises of a total of five respective dimensions namely, reliability, responsiveness, tangibles, assurance and empathy explained (Chaker and Jabnoun 2010). Research has indicated that in the area of hospitality and tourism service quality is an important antecedent of customers' behavioural intentions (El-Garaihy, 2013; Yunus et al., 2014). In a study conducted by El-Garaihy (2013) it was found that service quality is favourably associated to consumers' purchase intention towards hotels in Saudi Arabia. A model was developed by Gonzalez et al. (2007) in order to comprehend the relationship that exists between service quality and behavioural intention specifically focusing on the tourism industry. The outcomes of their study confirmed the presence of a meaningful relationship between consumers' perception of service quality and their behavioural intention. Furthermore, similar findings were also reported by Kuruuzum and Koksall (2010) as it was determined that the aspect of service quality carries a strong influence on hotel customers behavioural intention. Moreover,

it has been mentioned by Yunus et al., (2014) that the aspect of expected service quality is found to have profound impact on consumers' intention toward purchasing *Shariah* compliant hotels. Thus, in regards to the discussion based on past researches the following hypothesis is proposed:

Hypothesis 4: Service quality has a positive effect on purchase intention of Shariah compliant hotels.

CONCEPTUAL FRAMEWORK OF THE STUDY

The framework of this particular study has been developed on the basis of prior finding. This framework focuses on Muslim consumers purchase intention of *Shariah* compliant hotels based on the variables extracted from the literature particularly, *halal* image, *halal* awareness, religiosity and service quality. The framework illustrates the connection among the variables. Figure 1 provides a representation of the conceptual framework of the study. By referring to figure 1 it can be seen that the model comprises of four dependent variables (*halal* image, *halal* awareness, religiosity and service quality) and one independent variable (purchase intention). Moreover, the hypothesized relationships among the constructs have also been demonstrated.

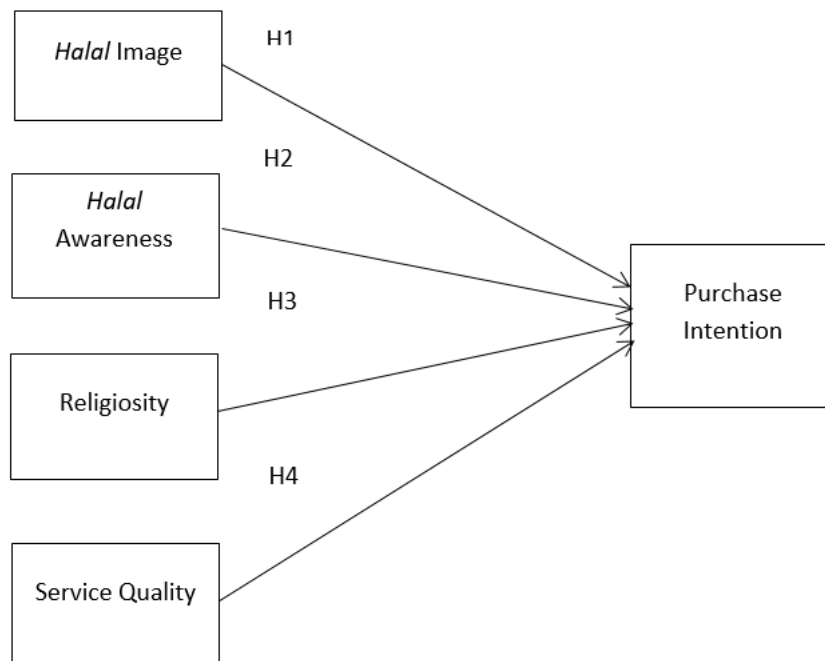


Figure 1: Conceptual Framework of the Study

METHODOLOGY

This research falls under the quantitative research method and attempts to gain further insights regarding the antecedents of purchase intention of *Shariah* compliant hotels of Muslim consumers. For this reason, Muslim consumers from different tourist destinations in Malaysia make up the target population of the current study. For the current study, data were collected from a total of 426 participants through the employment of survey strategy. A convenience sampling method was used for the purpose of collecting the required data. The major reason for using this particular sampling approach is that it allows researchers to collect data from respondents who are easily available as well as able to provide appropriate information regarding the issue being investigated (Hair et al., 2009). Moreover, convenience sampling was also used as it is considered to be the most efficient way of collecting data in a less time consuming and cost effective manner (Hair et al., 2009).

Therefore, for the present study data were collected by following convenience sampling method from a number of tourist destinations in Kuala Lumpur, Malaysia. Kuala Lumpur has been selected for the reason that this city has the majority of the tourist destinations in the country. A self-administered questionnaire was developed and the participants were requested to answer the questions of a 5 point Likert scale whereby 1 denoted strongly disagree and 5 represented strongly agree. In order to ensure the issues of convergent, construct and lastly face validity (Zainudin, 2012). Questionnaire items have been adapted from prior studies and were later modified so that they suit the nature of this particular study. Moreover, the multidimensional construct of service quality has been measured with five respective indicators namely, reliability, responsiveness, tangibility, assurance and empathy. The underlying reason for measuring the construct of service quality with these five indicators is that according to literature service quality is generally measured on the basis of these dimensions as they are the most prominent dimensions of service quality (Chaker and Jabnoun, 2010; Amin and Issa, 2008; Parasuraman, et al., 1985).

Additionally, operationalization of variables is a vital process for transforming abstract concepts into constructs that can be adequately measured. Hence, for this study all the key variables have been operationalised. *Halal* image refers to consumers' perception regarding *Shariah* compliant hotels on the basis of the associations held in their memories about *Shariah* compliant hotels (Awan et al., 2015; Yunus et al., 2014). *Halal* awareness is consumers' knowledge and familiarity with *Shariah* compliant hotels (Awan et al., 2015; Azam, 2016). Religiosity indicates consumers' commitment toward their religion along with religious beliefs

and values (Rehman and Shabbir, 2010). Service quality refers to customers' evaluation of the services that are provided by *Shariah* compliant hotels on the basis of how appropriately the services met their expectations. Service quality comprises of important dimensions namely, reliability, responsiveness, tangibility, assurance and empathy (Amin and Isa, 2008). Purchase Intention refers to consumers' willingness to patronize *Shariah* compliant hotels (Haque et al., 2015; Yunus et al., 2014; Lada et al., 2009). Table 1 depicts the sources from where the items have been adopted.

Table 1: Questionnaire Items

Variable	Source
<i>Halal</i> awareness	Awan et al., (2015); Azam (2016)
<i>Halal</i> image	Awan et al., (2015); Yunus et al. (2015)
Religiosity	Rehman and Shabbir (2010)
Service Quality	Amin and Isa (2008)
Purchase Intention	Haque et al., (2015); Yunus et al. (2015);Lada et al. (2009)

After collecting all required primary data, SPSS was used for analysing the data. The process of data analysis started through inserting the data into SPSS. Afterwards, descriptive analysis was done. Later on, as recommended by Hair et al (2010) exploratory factor analysis was conducted. At the final stage the hypotheses were verified through regression analysis.

RESULTS AND DISCUSSIONS

Demographic Information

The demographic characteristics of the respondents were statistically assessed through performing a number of descriptive statistics particularly frequencies, measures of central tendencies along with dispersion. Table 2 depicts the results of the descriptive statistics based on the demographic profile of the respondents.

Table 2: Demographic Profile

Variable	Frequency	Percentage (%)
Gender		
Male	289	67.8
Female	137	32.2
Age		
18 to 25 years	38	8.9
26 to 35 years	143	33.6
36 to 45 years	129	30.2
46 to 59 years	97	22.8
60 and above	19	4.5
Marital Status		
Married	284	66.7
Unmarried	127	29.8
Divorced	15	3.5
Employment		
Government	24	5.6
Private	181	42.5
Self-Employed	126	29.6
Student	47	11.0
Housewife	39	9.2

Others	9	2.1
Monthly Income		
RM2,000 and below	92	21.6
RM2,001 - RM3,000	27	6.3
RM3,001 – RM5,000	123	28.9
RM 5,001 – RM 7,500	106	24.9
RM 7,501- RM10,000	56	13.1
Above RM10,000	22	5.2

Reliability Coefficient

The primary reason for the purpose of conducting reliability test is to verify the presence of consistency in a data set. Hence, assuring the reliability is of utmost importance as it allows researchers to check whether there is consistency among the items included in a scale. Reliability is assessed on the basis of Cronbach's alpha whereby, a minimum value of .7 is required (Pallant, 2010).

Table 3: Cronbach's Alpha

Component	Cronbach's Alpha	Number of Items
Halal Image	.802	6
Halal Awareness	.846	5
Religiosity	.798	5
Service Quality	.819	5
Purchase Intention	.872	6

Table 4: Kaiser-Meyer-Olkin (KMO) and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	2341.750
	Df	190
	Sig.	.000

Kaiser-Meyer-Olkin (KMO) is basically employed in order to gauge the proportion of variance persisting among the variables. It has been suggested by Tabachnick et al. (2001) that a KMO value of 0.6 is required with a significant result for Bartlett's Test of Sphericity ($p < 0.5$). Hence, in case of the present study it can be seen that the requirements for both these respective tests were met as shown in table 4. This in turn indicates that the researcher can proceed with exploratory factor analysis EFA.

Exploratory Factor Analysis (EFA)

EFA is regarded as one of the most widely utilised statistical techniques primarily for assessing the dimensions in multivariate data analysis. EFA is considered to be an exploratory technique as in this respective stage researchers do not have prior knowledge regarding whether the items are able to gauge the intended factors therefore, it becomes necessary to explore the degree to which each of the observed variables are affiliated to their factors (Byrne, 2010). EFA helps researchers in shrinking a large number of variables into manageable number prior to employing the variables in other types of analyses through exploring the data set and examining the interrelationships that takes place among a set of variables (Pallant, 2010; Costello and Osborne, 2005). According to Hair et al. (2010) any loading that has a value higher than 0.60 is regarded to be significant. Table 5 demonstrates that in the present study all the items managed to load with a value greater than the cut-off value of 0.60.

Table 5: Rotated Component Matrix

Item	(F1)	(F2)	(F3)	(F4)	(F5)
Halal Image					
HI1	.845				
HI2	.827				
HI3	.791				
HI4	.689				

HI5	.654				
HI6	.637				
Halal Awareness					
HA1		.863			
HA2		.895			
HA3		.752			
HA4		.667			
HA5		.642			
Religiosity					
RL1			.874		
RL2			.856		
RL3			.778		
RL4			.764		
RL5			.736		
Service Quality					
SQ1				.845	
SQ2				.832	
SQ3				.754	
SQ4				.724	
SQ5				.684	
Purchase Intention					
PI1					.867
PI2					.861
PI3					.858
PI4					.795
PI5					.658

PI6					.642
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 6 iterations.					

Hypotheses Testing

The hypotheses that were derived for the purpose of the current study were verified through the means of regression analysis. According to Sekaran and Bougie (2009), one of the major reasons for the employment of regression analysis is the fact that it helps researchers to predict the strength all the independent variables in terms of predicting the dependent variable. At the same time, it also reveals among all the factors which one has the greatest influence of the dependent variable (Pallant, 2010). The outcomes for purchase intention are illustrated in table 7, 8, 9. The results of the current study showed that the four IVs (*halal* image, *halal* awareness, religiosity, service quality) together explained 64% of the variance in consumers' purchase intention. As a result of which, the model can be regarded to be appropriate for verifying the hypotheses by using t and p value statistics.

Table 6: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.726(a)	.663	.654		.49641268

a Predictors: (Constant), *halal* image, *halal* awareness, religiosity, service quality

Table 7: ANOVA (b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	102.058	6	26.063	56.535	.000(a)
	Residual	41.942	134	0.238		
	Total	144.00	140			

a Predictors: (Constant), *halal* image, *halal* awareness, religiosity, service quality

b Dependent Variable: purchase intention

The hypotheses derived for the current study emphasize the individual effect of four variables on consumers' purchase intention toward *Shariah* Compliant Hotels. The extent of influence each independent variable has the dependent variable (purchase intention toward *Shariah* Compliant Hotels) has been addressed and the outcomes have been depicted in Table 8.

Table 8: Coefficients (a)

Hypothesis	Relationships	Standardize d Coefficient (β)	T	Sig.	Results
H1	Halal Image \longrightarrow Purchase Intention	0.172	2.436	0.014	Supported
H2	Halal Awareness \longrightarrow Purchase Intention	0.327	7.310	0.000	Supported
H3	Religiosity \longrightarrow Purchase Intention	0.181	2.364	0.012	Supported
H4	Service Quality \longrightarrow Purchase Intention	0.090	1.567	0.118	Not Supported

a Dependent Variable: Purchase Intention

Results of Hypotheses Testing

Based on the outcomes generated from the multiple regression analysis, halal image, halal awareness and religiosity are instrumental for enhancing consumers' intention to purchase *Shariah* compliant hotels as they were found to positively affect intention to purchase *Shariah* compliant hotels. These findings are supported by prior findings as similar results were derived in the past as well. First is the association between halal image and purchase intention. Based on the results of the hypotheses testing it can be observed that H1 is accepted, indicating that *halal* image is an essential factor in terms of Muslim consumers purchase intention toward *Shariah* compliant hotels. A meaningful association between the aspect of *halal* image and purchase intention has also been uncovered in the past by Suki and Salleh (2016). Next, is H2,

which stated that *halal* awareness is positively correlated to purchase intention of Shariah compliant hotels. Based on the outcomes of the present study it can be seen that this respective hypothesis is also supported. A relationship of this nature has also been found to be acknowledged in prior studies as well (Ghadikolaei, 2016; Majid et al., 2015; Yunus et al., 2015). Then comes H3, which emphasised the relationship between religiosity and Muslim consumers purchase intention of *Shariah* compliant hotels. The results indicated the presence of a positive link amid these two aspects leading to the acceptance of H3. The congruency between religiosity and purchase intention was also endorsed in prior researches (Shaari and Mohd Arifin, 2009; Said and Hassan, 2014; Jamal and Sharifuddin, 2015; Mukhtar and Butt, 2012; Borzooei and Asgari, 2013). However, contradicting to the researchers' assumption service quality was not significantly associated to purchase intention of *Shariah* compliant hotels thus, H4 is not accepted. An insignificant relationship between these two factors has also been found in the past (Wonggotwarin and Kim, 2017).

CONCLUSION AND MANAGERIAL IMPLICATIONS

The current study has identified the factors that are crucial when it comes to Muslim consumers purchase intention of *Shariah* compliant hotels. As such, the role of *halal* image, *halal* awareness and religiosity are of utmost importance as the findings have demonstrated that these aspects are significantly associated to purchase intention of *Shariah* compliant hotels. Such findings indicate that it is necessary for marketers and hoteliers to strive toward enhancing the *halal* image of *Shariah* compliant hotels. At the same time, more awareness should be created about *Shariah* compliant hotels through the employment of different types of marketing activities as awareness has been found to be significantly related to purchase intention of *Shariah* compliant hotels. Additionally, since religiosity is was found to be significantly linked to Muslim consumers purchase intention, it is obligatory of marketers and hoteliers to be sensitive and respectful about the religious beliefs and values of Muslim consumers in the event of developing marketing strategies and activities.

Despite the fact that the current study contributes to an enhancement of knowledge through examining the factors affecting purchase intention of *Shariah* compliant hotels and fills the gap that exists in current literature, it still has a number of limitations. First and foremost, one of the major drawbacks of this study is the employment of convenience sampling. Hence, in the future the present study can be undertaken through utilising probability sampling methods. Moreover, data for this study has only been collected from Muslim consumers in Kuala

Lumpur, and this may impact the generalizability of the findings. Therefore, in the future data can be gathered from more regions across Malaysia so that, it provides a better representation of the entire population. At the same time, the current model can also be extended through the incorporation of mediating and moderating variables and replicated in the context of different industries.

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Factors that Determine/Influence students' choice of maritime education with special reference to seafarers' profession

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Abstract

Maritime education and training (MET) are presently faced with many challenges thus sustaining a pool of qualified and competent marine officers and engineers is a serious issue. Given the very complicated nature of the industry certain grades of seafarers are waiting to be deployed while some categories are highly short staffed. MET institutes compete with other higher education institutes while improving the overall quality standards of global MET. Also, the demand for seafaring by younger generation is seen declined while the quality of potential applicants also deteriorated. Leading MET institutes are pressurised to be flexible in selection criteria. Accordingly, the objective of this study is to identify the factors that determine or influence students' choice of maritime education. The study has been conducted by obtaining empirical data and the finding maybe quite helpful for MET institutes. It explored key factors pertaining to the seafarers' profession such as the professional identity and perception; social impact; the family concerns; and gender issues. MET institutes may implement new enrolment strategies to create a balance between supply and demand.

Keywords: maritime, education, seafarers, profession, training, shipping

1. INTRODUCTION

The seafarer profession is one of the most lucrative employment from the economic perspectives and this job is coupled with much of adventure too. However, it has become a serious problem in today's context that certain categories of seafaring cannot join ships after completion of primary training at college. This situation has deteriorated the demand for MET by the younger generation on one hand while the quality s of applicants also declined. In other words, the MET institute are compelled to be very flexible in selection criteria. As a result, MET institutes are keen to understand the factors that determine the students' choice of MET institute with special reference to seafaring officers.

The seafarer is a person engaged in sailing or working on a ship. Although called in different identities such as sailor, seaman, mariner, the seafarer is a person who navigates waterborne vessels or assists as a crewmember in their operation and maintenance of ships. Kim and Kim (2015) suggest the most academically motivating factors are intrinsic factors associated with self-actualisation, suggesting that instant gratification is crucial to the learning process [1]. Seafarers perform an admirable service to the society by helping move a variety of cargo from one port to the other irrespective whether, it is day or night; dry or rain; wind or calm. Recognizing the significance of highly competent human resources at sea, MET should be enhanced in terms of facilities and equipment, curriculum design, learning methodologies, quality of instruction and in all aspects of ensuring a pool of high qualified and competent marine officers and engineers to man the world fleet. [2]

It is said that more than 90% percent of cargo in the world is transported by sea. Shipping is, in economic terms, a derived demand of international trade. Therefore, sailors are committed to serve the world irrespective of country, religion, or the nationality forever. In this responsible endeavour, the sailor serves in different types of ships and complying with a number of regulations and facing dangerous risks such as maritime terrorism and rough weather. Due to globalization every industry started facing new and unexpected challenges that the shipping industry is not excluded. These recurring issues faced by the industry have made seafarers' lives at sea even difficult. Unfortunately, how those issues are being handled by the maritime authorities is quite debatable. The seafarers' life is so distinctive that it is usually impossible for non-seafarers take justifiable decisions on behalf of them. However, such administrative approaches, inter alia, other reasons have led to aggravation of problems which needs to be solved as soon as possible.

Singh, (2016) proposes 5 points out some of the main problems faced by the seafarers namely, Lenient Registries; Mindless Security Measures at Ports; Difficulty to Join Ship; Not Enough Time for Maintenance Work at Ports; and Lack of Proper Training. According to him one of the main issues faced by the shipping industry today is the emergency of registries such as Belize and Marshal Islands. Secondly, with mindless security the freedom of a seafarer to go ashore has been substantially curtailed. The other emerging and growing issue is that the fast loading and discharging rates of the cargo at ports. It has become increasingly difficult for a seafarer to fly out and join a ship in a distant port. This is because by the time the visa is processed, the ship is already loaded and ready to sail. The fourth problem he raises is that the very less time to the seafarers to carry out important maintenance work before the ship starts

sailing again loading and discharging of the cargo. Nowadays port authorities insist ships to finish and move out of the ports as soon as possible. Last but not least, the matter of seafarer training appears to be the most crucial one out of all these facts. Education motivation can be misunderstood as the desire to gain a job and wealth or approval from authority figures in the form of impressive grades. [1]

Therefore, this paper focuses its attention to discuss whether the education and training in the maritime sector is faced with certain impediments due its distinctive nature. The education and training of seafarers is an important issue, in order to maintain and develop the level of knowledge and skills in the maritime sector as well as in the interest of maritime safety. Students are driven by social and esteem needs to achieve academically – when an individual has a sense of belonging their self-esteem rises and they become more motivated to perform well (Petty 2014 as cited in Neto, 2015).

The requirements for quality seafarers keep updating, because of the advancement of navigational technology, development of maritime administration systems and higher standards in maritime safety, security and marine environment protection [3]. Therefore, the approach of the paper has three key facets. Primarily is evaluate the sea fearer profession because any individual first considers what level she or he will end up in the carrier progression unless the aim is clearly to become an entrepreneur. Secondly, it considers the social recognition she or he gets after successful completion of the academic path and become a true practitioner. Lastly it briefly discusses the practical scenario the seafarer may face as far as the family life is concerned.

The objective of this paper is to evaluate fundamental aspects of the profession of a seagoing person who contribute immensely to national and international economy. Unfortunately, this indispensable profession has not received its due recognition. The eminent profession of sea fearers was in existence many thousands of years before all other professions that exists today evolved because of development of science, technology, manufacturing, trade, education, living conditions, social values, etc., Art of Maritime Navigation, trade and exploration dates to thousands of years, elaborating its significance.

2. METHODOLOGY

This research administered primary data collection through interviews using convenient sampling method. The study was done in Sri Lanka though interviews with seafarers that includes those who retired after long years' service, those currently at sea, those who graduated

and waiting to be employed and those who are engaged in maritime education. Total thirty-two seafarers had been interviewed and discussions were unstructured as to obtain more refined data from their own experience. Senior officers in the regulatory body for seafarers in Sri Lanka namely the Merchant Shipping Secretariat which is the shipping administration arm of Sri Lanka that has the overall responsibility for overseeing maritime concerns. In this qualitative research secondary data were gathered from the publications of International Maritime Organization, Central Bank of Sri Lanka, Department of Examination, Board of Investment of Sri Lanka, and Sri Lanka Customs. The authors focus on critical factors pertaining to this profession such as the professional identity and perception; social impact; the family concerns; and gender issues in the article. The paper consists of four chapters that explains each component based on the comments obtained by thirty-five respondents.

3. DISCUSSIONS AND ANALYSIS

3.1 Seafarer profession

Seafarer profession is noble like any other profession but stands out as a challenging, rewarding and a profession essential to national and global interests, safety and security of mankind. Seafarers coming from multi nationalities but there are few countries leading in the list. It is important to note the diversified participation of the profession worldwide as illustrated in the table 1.

Table 1: Nationality of non-UK officers holding Certificates of Competency, 2015

2014 Rank	Country	Numbers ¹	Percentage	Cumulative Percentage
1	India	9,600	69.2	69.2
2	Pakistan	1,050	7.6	76.8
3	Bangladesh	790	5.7	82.5
4	Sri Lanka	570	4.1	86.6

5	Nigeria	390	2.8	89.4
6	Republic of Ireland	120	0.9	90.3
7	Republic of China	110	0.8	91.1
8	Brunei Darussalam	100	0.7	91.8
9	Ghana	90	0.7	92.5
10	Australia	90	0.6	93.1
	Rest of World	960	6.9	100.0
Total		13,870	100.0	100.0

Notes:

1. Numbers have been rounded to the nearest 10.

Source: Maritime & Coastguard Agency data

Last updated: 27 January 2016

According to above statistics the country ranks at no 4 thus may give a good reflection about the profession. In view of the critical importance of this valuable profession, countries that have reached developed status today did recognize sea fearers to be in their national interest development mechanism and curriculum especially after the world wars. This early recognition has paid rich dividends today to all developed nations identified as maritime, industrialized and economic leaders of the world. Even land locked countries like Switzerland had the vision to develop a large merchant marine fleet which is helping in their sustainability today. Therefore, sea fearer profession and the related industry which is globally common must be absorbed to the National priorities in order to raise the standards to meet the global challenges within and outside the profession. Deep feelings of empathy and positive affiliation with human beings are important components of self-actualisation (McNeill, 2015), where Maslow (1970) suggests individuals who have self-actualised have a greater capacity to identify with others and form stronger friendships [1].

The sea fearer profession is a physically; mentally and socially challenging profession that requires high standards of loyalty, self-discipline, moral courage, initiative, integrity,

character, conduct, commitment and accountability. Absence of above essentials at sea will risk lives, colossal wealth, material, money, environment, national economy and global trade.

Therefore, mitigating the social distractions and other challenges faced by sea fearers with sound training, awareness, education, compensatory incentives and most importantly recognition and acknowledgement at all levels of social fabric, education and national curriculum is of paramount importance.

Award of a suitable global and Nationally recognized non-sea fearer post graduate professional qualification as an exit qualification for sea fearers could dispel all misgiving “as sea fearer” after many years of service at sea. This unique experience would make a sea fearer a much superior all-round individual who has been exposed to many challenges in an exclusive global environment. This is a stark contrast to other professions where exposure and knowledge is very limited. Sea fearers are indispensable. Hence this profession must be hailed, nourished, improved and popularized.

.3.2 The social belonging

This phenomenon refers to the living or preferring to live as part of a community or colony rather than alone or in other words, relating to the way in which people in groups behaves and interacts. Unfortunately, the seafarer must sacrifice this factor in order to sustain in the job. A cadet on a maritime school aspires to become a good seafarer someday. Some people who chose the sea may like the challenge and the adventure behind the work. It is totally different from any kind of job on the land. It provides even greater remuneration anyway that in most of the cases could very well compensate for what they sacrifice for. However, they do their job in a more difficult environment as they seldom see the land but see the same person every day that tend to develop a psychological agony after some time. They are compelled to work with different types of people in different countries, and usually under pressure. Therefore, in most cases the need of money for own interest or for the wellbeing of the family act as the driving force of being in the sea. Usually, working onboard the ship for more than 6 months or even up to 1 year after obtaining the cadet training at college gives him a chance to upgrade his profession and for possible promotion as an officer. However, after a few years of working onboard the ship some cadets suddenly decide to stop and start to work on land. Unless, they find a satisfactory alternative that their knowledge and experience pay enough compensation, such individuals regret the hard-earned education and training. Unfortunately, is too late for

them to reverse their lives. Humanism rests on the principles of human relatedness, the inherent goodnature of humans, and the pursuit of self-actualisation[1].

Homesickness is worst than seasickness. Many seafarers have quitted from the sea due to various social and work-related reasons that lead them to leave the off-shore job. They were either homesick or their family members do not want them to work onboard anymore. Some people mentioned that they quitted the seafarers' job because they didn't want their children to grow up without the proper upbringing of their father. Deep feelings of empathy and positive affiliation with human beings are important components of self-actualisation, where Maslow (1970) suggests individuals who have self-actualised have a greater capacity to identify with others and form stronger friendships [1].

Some of the seafarers that were interviewed think that the work routine onboard is not so difficult but the main reason for the conflict is something pertained to the psychological conditions that possibly affecttheir work and socializing with the persons onboard. Some of them had very bad experiences onboard their previous ship. From the positive side, some of them were managed to find an alternative job in land with almost the same salary of his job on the ship or find jobs related to shipping and maritime industry. The common factor that keeps many people away from the seafaring is the fatherhood. According to many seafarers the need for being with children may supersede the money factor. They simply didnot want to miss the experience of childhood because it cannot be brought back once they are grownups. One sailor said that he quitted as he wanted to be with them when they had their first teeth, when they began to lose their baby teeth, to bring them to school every day, when they began graduating from Elementary, High School and then College. Intrinsic and extrinsic factors are most effective when accompanied by a collective goal, as opposed to being individually focused [1].

Seafarers hold a variety of professions and ranks. A ship's crew can generally be divided into four main categories: the deck department, the engineering department, the steward's department, and other. Maritime Safety Administration of the People's Republic of China (China MSA) Chapter 2 Certificate of Competency Article 8 Capacities of seafarers: 1. masters; 2. deck department: chief mate, second officer, third officer, able seafarer deck, rating forming part of a navigational watch; The chief officer, second officer and third officer are

called deck officers; and 3.engine department: chief engineer officer, second engineer officer, third engineer officer, fourth engineer officer, electro-technical officer, able seafarer engine, rating forming part of an engineering watch, electro-technical rating, of which the second engineer officer, third engineer officer and fourth engineer officer are called engineer officers; [5]

Neto, (2015) suggests a correlation between educational motivation and self-actualization. Kim and Kim (2015) suggest the most academically motivating factors are intrinsic factors associated with self-actualisation, suggesting that instant gratification is crucial to the learning process. A close view of the progression path of a student reaching the level of captain is intrinsic and crystal clear. In many other managements or technical employments, the progression path usually tends to face variations and limitations, this factor is very much evident in many Asian countries in particular. However, given the limited number of employees and well established highly disciplined nature that is inculcated in the standard progression path of seafaring officers the students can visualize the attainment of goal. Given the cognitive mental predisposition of prospective students about the social recognition and incomparable financial rewards this carrier may provide the authors suggest an overlap of the carrier progression and Maslow’s hierarchy of needs. This combination is illustrated figure 1.

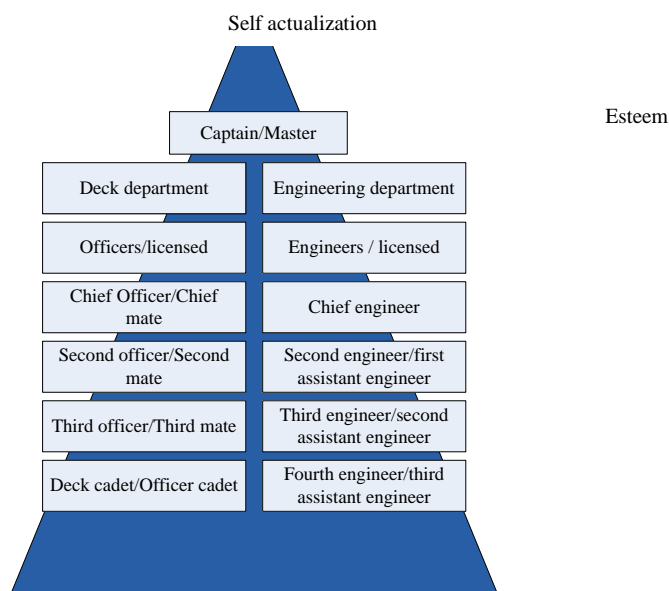


Figure1: The overlap of the seafarers’ carrier progression and Maslow’s hierarchy of needs (Source: Authors ©)

According to Maslow, (1943) there are 5 sets of goals (basic needs) which are related to each other and are arranged in a hierarchy of pre-potency. When the most pre-potent goal is realized, the next higher need emerges. Maslow (1970) deliberates on the notion of the intertwining relationship between intrinsic factors and self-actualisation, as he suggests self-actualisation complements processes that have been internalised. Learning motivation inherently has a component of curiosity surrounding the purpose of learning; this means if an individual is engaged in academic activities they are engaged in higher needs of self-actualisation (Melnic & Botez, 2014). Esteem needs centre around achieving goals and establishing a career. Therefore, the argument here is that whether the MET candidate would like to sacrifice the “belonging” stage in order to reach the “esteem” stage because the age between 20-35 years is more attracted towards love, affection and being part of the “group”. This “group” may be hardly found at sea. Therefore, reaching the esteem at the expense of belonging is a critical decision that necessarily to be taken at the age of early twenties.

3.3 The family man

Being away from the family is one of the key determinants. One of the seafarers who have been with the family for 20 years since he stopped seafaring mentioned that he wanted to go back to seafaring and earn the money that he missed at the expense of being a family man. He was happy to look back to see that his family has matured and truly bonded together as one family as he managed to take the right decision at right time. According to him the children and wife has no objection of his revived career. This was possible as the person had his second mate's License. Therefore, the seafarer carrier does not mean that the employee has no family life. It is always possible to balance the job and the family with proper planning and good understanding with the family. However, many seafarers have declined to be at sea due to many other reasons. Some people were given a chance to work in a shipping company and after some negative feeling at sea the now opportunity would have encouraged them to work ashore. Some seafarers had a problem with their wife that leads to divorce and could not handle the problem, which leads to the decision of stopping his profession as a seafarer. There were some isolated cases that a member of their family died while they are still onboard the ship, and this became a very bad experience that they can never erase from their minds.

3.4 The gender issue

Fundamental cultural bias in favour of males. The widespread operation of patriarchal systems of social organisation; of customary early marriage; of the incidence of early pregnancy (in and out of marriage); of heavier domestic and subsistence duties of females (especially in rural areas); a generally lower regard for the value of female life, all combine though differentially in each case, to adversely affect the participation of girls and women in formal education. [6]

Usually, it is common to note the MET is highly dominated by men. This is even worst in seafaring. Aggrey, (2000) stated that by looking at seafaring, it could be that perhaps some men traditionally have gone to sea to get away from women or expect women to stay at home and depend on men. Since the education is usually aimed at a professional as the destiny the women may obviously be considering the practical problems in the home front after marriage. Together with the fundamental socio-cultural bias in favor of males, the economic factor, especially in terms of grinding poverty and hunger, is probably the most influential in adversely affecting female participation in education, especially in rural areas [6]. Many professional women are faced with the conflict of how to deal with the problem of profession and family [7]. Health condition and resilience on rough life at sea is yet another problem. Boys may get preferential feeding, while girls (who have a heavier domestic work load) are more likely to be undernourished. Even if they get to school, this adversely affects their performance and therefore retention rate. [6]

The other key problem that keeps women away from MET is the female perception about the seafarer life. Accordingly, one common problem facing women at sea is that of sexual harassment, which makes some women live in isolation on board and some drop out of their career. More than 80% of the questionnaires answered by women made mention of it in some form [7]. The own experience with many those who were contacted in the study was that many attempts by the MET institutes were miserably failed in Sri Lanka. It is not difficult to understand that the parents usually object even if their daughters are interested joining the sea given the general perception in the society.

4. CONCLUSIONS

Maritime is the most economical transport mode for cargo transportation and shipping cannot be improved without efficient and effective sea farers. Sri Lanka has clearly identified the importance of maritime industry under diverse contexts. For example, the successive

governments have been focusing on the maritime hub concept given the geographic location advantages. The study revealed that the professional identity and perception is one of the most influential factors that shows a positive relationship to attract the candidates, however there are reasons due to social impact of being isolated. This finding is somewhat paradoxical as the society is highly connected through virtual means today. The demanding family concerns due to complexity in modern life style was another negative factor. The gender issue has continued to be playing a negative role despite females are becoming more independent in the modern world. MET institutes may implement new enrolment strategies to create a balance between supply and demand. Sri Lanka is not only strategically positioned proximity to the East-West main sea route, but it is very close to the economic giants, India. Given the ability to handle very large ships in the port of Colombo because of deeper draught. Sri Lanka is an island thus it is a sea friendly nation. All these external factors have a great influence in shipping and maritime sector thus seafaring. If the barriers caused by the factors pertaining to professional, social, family pressure and gender biasness could be systematically eased the seafarers' profession will receive its due recognition. It is admired that the Department of Education in Sri Lanka to incorporate twenty school periods of logistics in the school curriculum. This would help to provide social awareness about transport modes that the logistics is dependent on. The findings may be useful to design a comprehensive research about the same question using quantitative data analysis to obtain further insight.

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Impact of Green Marketing on Consumer Attitudes and Consumer Purchase Intention in Sri Lanka

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Abstract

Purpose –The purpose of this research is to investigate the impact of green marketing on consumer attitudes and consumer purchase intention in selected large-scale retail outlets. The Conceptual framework was built based on the green marketing mix (4Ps) and linked them into consumer attitude.

Design/methodology/approach – Descriptive cross-sectional research study was carried out to test the formulated hypothesis. Data were collected from 150 respondents from Matara district consumers who visit retail outlets for their consumer needs, through structured questionnaires. Data were analyzed by using partial least square modeling with the support of Smart PLS software.

Findings – There are six hypotheses with a positive relationship among variables and other four with a negative relationship. The result is a positive impact of the green marketing mix on consumer purchase intention.

Research limitations/implications – The study was carried on FMCG market and this can be an extent to industrial goods, luxury goods and semi-luxury goods in future research. The same study can be further extended by using extended marketing mix (7Ps).

Practical implications – This research suggests the consumer attitudes and consumer purchase intentions have an impact on green marketing. Therefore, it offers knowledge on green marketing strategies which can be helpful for retail outlets.

Originality/value – This research contributes to academics, to study on green consumer behavior and managers, to make their actions on green marketing and policymakers, on their future decisions on environmental protective actions.

Keywords: Consumer attitude, green marketing, marketing mix, purchase intention

INTRODUCTION

“In today’s business world, the increased environmental awareness has had consequences for consumer behaviour, namely on green purchase intention and green marketing has got the attention of the consumers as it has become a global problem and due to environmental deterioration” (Kumar, 2011, p.59). The Green marketing concept mentions that the marketers should identify, anticipate and satisfy the needs and want in a socially acceptable manner of their target customers at a profit (Kotler, 2013). Green marketing concept was very successful invention and a practice for organizations as they were producing and offering their products/services after identifying specific needs and wants of their customers. However, some researches argue even though many consumers claim that they care about the environment when they make their purchase decision, their buying behaviour does not always reflect this preoccupation (Kalafatis et al., 1999; Gardyn, 2003).

“The environment deterioration has become a considerable challenge for the world community and this situation has affected to increase consumer attitude towards green products in order to preserve the environment” (Luck et al., 2009, p.2). As well as the environmental protection attitude has taken place with the people to purchase eco-friendly foods (Solomon, 2010).

The factors have got the attention of world community on protecting the environment and enhance personal health. Many countries have derailed their policies and practices to have a green environment and healthy people. Countries like Germany, Mexico and Holland are having best recycling practices to protect the environment and they have introduced new legislation to demotivate artificial packaging which harms to the environment. Recent studies (Molina-Azorinet al., 2009; Hung and Kung, 2011) have shown that the green management has a positive impact on financial performance. Also, many firms are using green marketing as a tool to get a competitive advantage (Chen and Chai, 2010). Likewise, an entire world is practicing green practices on goods and services.

Nevertheless, Green marketing has become a popular topic with the rising environmental issues and increment of consumer concentration on environmental matters (Solmon, 2010). Consumer behavior on a purchase of green product has tested previously in New Zealand early under the price consciousness, quality consciousness, environmental consciousness and brand loyalty (Gan et al., 2008). But, this study hasn’t concerned the influential factors such as

promotion. As well they have concerned only about New Zealand customers. Another recent survey was conducted in 2012 with 1000 amount sample of American consumers. The results of the study were only 44% of consumers are trust environmental claims of the organization and 42% respondents are discouraged to buy environmental products as they think that the price of environmental products is superior to conventional goods (Tracker, 2012). Likewise, a number of previous studies can be seen regarding green purchase behavior of consumers. But, most of them are about American and other Western markets and few considerable studies have conducted on Sri Lankan consumer market.

Sri Lanka has many experiences with environmental issues and several malpractices of marketing goods, at a social and environmental acceptable manner. Sri Lankan farmers are using a large portion of fertilizers and chemicals to protect and increase their harvest. Recent scientific studies done on available fruits and vegetable to be sold in Sri Lankan market had found that local fruits and vegetables are consists with “Arsenic” and it has affection to have cancers on a human body (WHO, 2012).

Even though many countries have identified this situation Sri Lanka have less concern for green practices. Therefore, it is a need to implement green marketing as the best alternative to overcome the present issue. This study based on the present consumer purchase intention on green marketing and to propose and identify future development needs and enhancement of green marketing to achieve the organizational objectives. This study will fill the above gap by analyzing how the green marketing mix effect on consumer attitudes and finally how it effects on the consumer purchase intention. It reflects consumer perception on green marketing mix under cognition and affection component of attitude. Finally, it measures how those components impact on consumer’s attitudes and purchase intention.

LITERATURE REVIEW

Green marketing

Green marketing refers to the modified action of the marketing mix under environmental friendly and socially acceptable manner (Kotler, 2013). According to American Marketing Association (1975), it is very simple and anyone can simply identify the concept of green marketing as marketing products or services without making any harm to the environment. It’s a simple definition of green marketing and it consists a broad meaning regarding the environment and marketing effort. However, later Small Business Community of Canada

(2011) defines green marketing as the process of selling products and/or services based on their environmental benefits. According to this concept, the organizations should consider environmental friendliness. However, it will need to assess such a product or service that may be environmentally friendly and make sure the customer needs are satisfied. The change from ecology to “green” was accompanied by a change in focus from environmentalism to sustainability. Thus, “green” is not only focusing to reduce environmental damage by tapping into consumer demand but also seeking consumption to create a sustainable development.

When compares the similarities of some definitions of green marketing concepts such as AMA (1975) states conduct marketing without harming to environment and Polonsky (1994) states green marketing as fulfill human needs and wants, without harming to environment and Pride and Ferrell (1993) states organizational effect on the controlling marketing mix without harming to environment. Those definitions highlight they are more focused on conducting their marketing efforts in an environmentally friendly manner. It shows the willingness of corporations and people to keep the environment as it is for future generations. The concept of green marketing can be identified as future-oriented concept and marketers can contribute to the environmental protection with their effort by applying green marketing.

The new socio-economic challenges to the world such as; global warming, extreme weather conditions, soil erosion and other natural disasters caused by excessive consumption and the disastrous consumer behavior have made the eyes open of the global community (WHO, 2013). Therefore, environmental friendliness has been evolving to a significant level at present (Polonsky, 1994).

Although the green marketing concept began to be discussed in the 1960s, it was in the late 1980s and early 1990s that the concept begins to be formalized and generalized. The American Marketing Association held the first workshop on the topic in 1974. In this workshop, green marketing was defined as the study of positive and negative aspects of pollution and depletion of energy sources (Kinneer and Taylor, 1973). According to Polonsky (1994), green marketing consists of all planned activities to generate and facilitate exchanges in-order to satisfy human needs and desires with the least impact possible on the environment. This statement adds an important dimension: a more humanistic marketing concept that includes ecological and social components and one based on minimization of environmental damage. Crane (2000) argues for the existence of a relation between morality and green marketing, because the environment implies some ethical questions that marketing should contend with.

Peattie and Charter (2003) defined green marketing as the holistic management process responsible for identifying, anticipating and satisfying customer needs and society in a profitable and sustainable perspective. Soonthonsmai (2007) adds to the definition that firms which are concerned about the environment should develop green products/services with the aim of achieving consumers' and society's satisfaction. Indeed, several authors advocate that green marketing incorporates a broad range of activities, from the R & D, design, manufacturing process, and packaging to advertising. According to Peattie and Charter (2003), marketers should not only look for internal processes of the production, but also for the impact of production and consumption in the quality of life and development of a sustainable society. The same authors suggested that for the success of green marketing it is necessary to add to the four traditional Ps of marketing, the four "Ss": customer Satisfaction, product Safety, Social acceptability and Sustainability of the products.

Ottman (1993) believes that the emergence of green marketing is a result of the finding that companies are being evaluated not only based on the product/service performance, but also on their social and environmental responsibility. Green marketing appears as a supporting tool for monitoring, seeking and fulfilling consumer needs and desires in a context of environmental responsibility. Therefore, since green marketing is considered by many authors to be one of the major trends in modern business (McDaniel and Rylander, 1993; Pujari and Wright, 1996; Kassaye, 2001), and it is important to understand to what extent the emergence of this concept is affecting consumer preferences.

Green Marketing Mix

Green marketers must address the 'four Ps' in innovative ways (Pranam and Soumyajith, 2012). Marketing strategies and tactics are now have been modified with the new technology and creativity. Web based products, digital marketing, social media marketing and relationship marketing can be identified as an innovative application of marketing mix according to the rising competitiveness. The traditional 4 Ps could be identified as Product, Price, Promotion, and Place. These elements could further be analyzed with respect to the green applications (Pranam and Soumyajith, 2012).

Kotler (2013) defines the product as anything which satisfy our consumers. Further, Price can be simplified as the amount of money charged for a product or a service. However, many consumers think that the green products are more expensive than conventional products and some consumers think and it's not due to the health part (Chang, 2011). According to Chang

the producers get the benefit out of the belief and charge extra amount for green products. Place refers to make the product available. It has a great impact on marketing, if the product is not available to buy the customers interest may reduce (Kotler, 2013). Place including channels, coverage, and assortments. Furthermore, a point of purchase “The location where the purchase made” is an important factor (Kotler and Keller, 2009). Store display / merchandising play a major role in consumer purchase intention by differentiating and helping recognition of products (Solomon et al., 2010). Most consumers are looking for non- polluted places to fulfill their consumer needs (Wanninayake and Randiwela, 2008). Placement of green products can create a greater awareness of green-conscious consumers and it’s a better option for them to purchase of green products (eurocommerce.com).

“Promoting products and services to target markets includes paid advertising, public relations, sales promotions, direct marketing and on-site promotions” (Kotler and Keller, 2009, P.512). Smart green marketers will be able to reinforce environmental credibility by using sustainable marketing and communication tools and practices. Green promotions help consumers to identify and understand products and services and it helps to create consumer awareness towards products or services. “Green advertising addressing varied environmental issues, corporate image, environmental friendliness, the environmental credential of larger companies and promoting some the environmental responsible behaviors” (Hartmann and Apaolaza-Ibanez, 2009, p.717).

Green product and consumer cognition: Due to the concerns with the environment, marketing mix is identified as a very important element in eco-friendly products. Chitra (2007) identifies green marketing mix: product, price place, and promotion. It is explained that the product is to a provide healthy consumption, place as the product availability and its awareness. Kotler (2003) defines the term of product as “a product can be anything which satisfies the customer needs and wants”. It states that Producers should focus on the consumer needs and wants and produce their products accordingly to satisfy the customers. A good product which has identified the needs and wants of their target market always makes a demand from consumers and will make profits for the organization.

Consumer cognition refers to the selection of one product among many alternatives and consumer attention has increased on green products due to environmental and health issues during past decades dramatically (WHO, 2013). It shows the consumer willingness has gone up on seeking green products in the marketplace. This will bring an advantage for green

products to be selected by customers as their first attention grab on green products available. This shows the impact of green products on consumer cognition as customers are seeking green products among all products available in the market.

H1: There is an impact of green products on consumer cognition

Green product and consumer affection: The affective component of attitudes refers to feelings or emotions linked to an attitude object (Eagly and Chaiken, 1993). Affective response influence consumer attitudes in different ways. The primary way of affection refers to people feel about product appearance and then responds on it. Positive feelings effect to have a favourable picture towards the product on the minds of the customers. Consumers became more environmentally conscious from the mid-1990s, and that consciousness gave birth to green consumerism (Uusitalo and Oksanen, 2004), which later formed a broader consumption concept called ethical consumerism. The formation of specifically named consumers created a change in the industry's view of consumers; they became not only individuals but also symbolic consumption groups who represented social values, ideas, and ideologies. With continued growing force from consumers, sustainability marketing developed in the late 1990s (Charter and Polonsky, 1999).

According to Charter and Polonsky (1999), sustainability marketing promotes the 'building and maintaining of sustainable relationships with customers, social environment, and the natural environment'. In coping with the trend toward sustainability, corporations needed to implement green marketing strategies, like improving products and manufacturing processes, which would lead to long-term, sustainable business development. Today green products are much popular among the consumers among the world due to health and environmental concentrations of customers (WHO, 2013). It leads consumers to see green products actively at the marketplace and it shows the impact of green products on consumer affection component.

H2: There is an impact of green products on consumer affection.

Green price and consumer cognition: Price is the value the product or service is produced and eco-friendliness is identified in the promotion of products and services. According to Chatterjee (2011), the consumers attempt to buy eco-friendly products which have got the highest impact to the environment (Cited in Rhabar and Wahid, 2011). Certain amounts of consumers consider the price of eco-friendly products as little expensive as the conventional ones (Chang,

2011).

Consumers are identified as sensitive towards price in the purchase of green products. That affects the consumer's decision making towards green products (Anderson and Hansen, 2004; Ottman, 2000). A green product also viewed as competitively. Therefore, the pricing strategy must be competitive in green products (Miller and Layton, 2001). According to Pirani and Secondi, (2011), in a survey made in the European countries on 27000 respondents in the survey around 75% of them are willing to buy green products at a higher price than the normal products and in Swedish, the percentage is around 88%. Price is perceived by consumers as a symbol of quality (Kotler and Keller, 2009). This belief is pervasive when the price and quality are concerned.

According to Banerjee and McKeage (2003), green consumers strongly believe that current environmental conditions are deteriorating and represent serious problems facing the security of the world. However, consumers who do not believe in environmentally friendly behaviour generally perceive that these ecological problems will be "resolved themselves," Therefore, in an individual's perception on the seriousness of environmental problems may influence the consumer's willingness to pay more for products which are compatible with the environment (Laroche, et al., 2007).

H3: There is an impact of green price on consumer cognition.

Green price and consumer affection: During the consumer decision making process, customers sometimes do not follow the five stages of the decision-making process. (Problem recognition, information search, evaluation of alternatives, product selection and decision making) Sometimes the customer may purchase products due to the environmental cues. In that situation, the decision making is affected by the customers' affection (Solomon et al., 2009). Consumers are having pre-judgment (perceived price) about the product with their purchase experience and they have identified brands according to the perceived price (Picket-Baker and Ozaki, 2008). It has an effect to categorized brands on the consumer mind as high valued products and low valued products.

According to the study carried out by Morwitz, Greenleaf and Johnson (1998) the impact of partitioned pricing on purchase intentions and recall of total costs was examined and they found that partitioned prices decreases consumers' recalled total cost and increases their purchase

intentions. Partitioned pricing can be defined as the main price, which serves as an anchor in this context, plus other charges such as installation charges, handling charges, and service charges. With the arrival of the e-commerce consumers more often encounter partitioned prices than they did before.

H4: There is an impact of green price on consumer affection.

Green place and consumer cognition: Wanninayake and Randiwela (2008) found that most consumers prefer to make their purchases at non-polluting places. The attitudes of consumers at the point of sale and store display are very important when they make purchases of grocery brands (Anselmsson and Johansson, 2007). Placement of green products in the store can more visibly attract customers increasing their awareness as well (eurocommerce.com). People have tended to seek eco-friendly places to spend their leisure times such as tree houses, nature parks, wooden made restaurants and hotels. Recently many eco-friendly marketplaces such as floating markets in Thailand and Sri Lanka have become more popular among customers to purchase goods while enjoying the environment.

Wakefield and Baker (1998) proved that the probability of customers staying longer in store increases due to atmospheric stimulus. When a consumer feels satisfied with the retail environment of the store, he spends more time in a store and buys more because of pleasant environmental stimuli (Bohl, 2012). The environment has a huge impact on the consumers' emotion and satisfaction. The impressive atmosphere of the retail chain outlets enhances the customer satisfaction level and purchase experience (Silva and Giraldi, 2010).

Cleanliness is the appearance of the retail chain outlet that improves the atmosphere which affects the customers feeling towards the outlet. Customers create a positive or negative word of mouth about a retail chain outlet by looking at the cleanliness (Banat and Wandebori, 2012). Cleanliness can improve store atmosphere (Gajanayake and Surangi, 2011). Cleanliness of a store creates positive impression among consumers and makes them stay longer in the store. Product display and Cleanliness are very important for the outlet selection (Wanninayake and Randiwela, 2007). Cleanliness of the outlets creates an image of comfort and luxury in the customer's mind due to which customers stay for more time in retail chain outlets and make more purchases (Yun and Good, 2007).

H5: There is an impact of green place on consumer cognition.

Green place and consumer affection: The Place takes a considerable position in the marketing mix as it refers to make the product available in the market. The consumer attitude on the point of grocery brands, producers add extra information to their consumers when processing and ready to make a purchase in the store to make their buying decision at the store and to remind the store (Anselmsson and Johansson, 2007). Their focus on the above strategy is to increase consumer concentration on grocery products and others on the corporate social responsibility of retails market how the green consumers evaluate product information and responsibility on the point of purchase to influence consumer attitude before making purchases in the store. Many environment lovers seek green places which positioned in their mind to fulfill their consumer needs such as hotels, food cities, locations and others. Use of color for the places has been much effective on green place mix and it will affect to producers attract customers (greenproductplacement.com). For example, many people wish to visit Bangkok in Thailand for shopping and world Disney to get experience. As well as many green lovers wish to visit eco-friendly places such as jungles, waterfalls, riversides, seaside and other environmental places.

H6: There is an impact of green place on consumer affection.

Green promotion and consumer cognition: According to Kotler and Keller (2009) promotion involves “sales promotion, advertising, sales force, public relations and direct marketing”. However, in our study we will mainly focus on advertising because our survey deals with attitudes and purchase intentions of green products that consumers can find in a supermarket and we suppose that other elements from promotion such as sales force or public relations have low importance in supermarkets, indeed people do not need much help (sales force) when they shop for everyday products. Consumers are also concerned with the promotions of eco-friendliness of products that persuade customers to adopt environmental concerned purchasing behaviour (Ann et al., 2012).

Ottman (2007) stated that with the changes in the industry, society and public life made it possible for green marketing to gain stable recognition in the marketplace due to promotions. These changes took the form of advancements in technology, enforcement of claims by the government, governmental regulations and incentives, active environmental groups and advertising media. This can be implemented through the point of sales techniques, hoardings, bill boards, web banners and other visible items.

H7: There is an impact of green promotion on consumer cognition.

Green promotion and consumer affection: The performance of products in terms of product quality, taste and image etc. are vital. The green consumer will not be influenced to buy because of the greenness alone. The attitude of the consumer has to be changed by highlighting the benefits of the products. That will help the customer to determine his or choice on green products (Wong et al, 1996). Wannimayake and Randiwela (2008) have studied on the impact of product package during the customer decision-making process. They have found that there is a significant impact of product packaging as a green product from the FMCG sector. However, this survey has been done in Sri Lanka and India.

Advertising used in the green product can appeal to customers with differentiation. That could appear different from conventional products. The advertising could be on emotional stressing that the product attributes (Schuhwerk and Lefkoff-Hagius, 1995). Advertising on green products can vary from environmental issues, environmental friendliness of products, the image of the corporation and it could emphasize the environmental responsible behaviours (Hartmann and Apaolaza, 2009). The emotional appearance of consumers influenced my marketing promotions can result in purchase actions of customers. This will lead the consumer to enhance the recognition and recall of green products. According to a European study made by Gallup organization, 30% of the European think that the best way for retailers if they want to promote their green products is to provide information as much as possible (Flash Eurobarometer, 2009). However, there is also an argument stating that the consumers who are highly getting involved in green marketing are less affected by advertising as they have many attachments to the products (Chitra, 2007).

H8: There is an impact of green promotion on consumer affection.

Consumer cognition and purchase intention: Purchase intention can be identified as ‘what customer think they will buy’. However, it has been less predictive of their future behaviour than measuring what the customers expect to do. (Blackwell et al., 2006). The trend of consumer behaviour towards eco-friendly products has been increasing over the years (Gant, 2007). The consumers those who have been positive towards the environment have shown their willingness to purchase green products (Balderjahn, 1988). However, it is also identified that, even if the consumers are concerned about the issues in the environment caused by consumption patterns of the people, they will not buy necessarily green products (McEachern and Carrigan, 2010, cited in Solomon et al., 2010).

Green consumers' concerns include the production and consumption processes in addition to the purchase itself. Roper (1990) identified consumer profiles associated with green product purchases and attitudes and classified them into five groups: true-blue greens, greenback greens, sprouts, grouzers and basic browns. The true-blue green consumers, showing the highest level of environmental concern, constituted 30% of the US population in 2007 (La Marguerite, 2009). In explaining the mechanism driving consumers' green purchase behaviours, scholars suggested that the growth of consumers' pro-environmental values led to pro-environmental behaviour (Pickett-Baker and Ozaki, 2008).

H9: There is an impact of cognition attitude on behavioural intention.

Consumer affection and purchase intention : “The consumers' attitudes affect their thoughts and feelings and thus influence behaviour such as purchasing behaviours” (cited, Pickett-Baker and Ozaki, 2008, p.282, Ajzen, 2005, p.3). The past experience of the green products could result to have a positive or negative idea towards them which could influence the behaviour of the consumer whether to purchase the eco-friendly products or not. Once consumers are having a positive attitude on green products their intention goes to purchase green products. A green consumer can be simplified as a person “who adopts environmentally-friendly behaviours and/or who purchase green products over the standard alternatives” (Vernekar and Wadhwa, 2011). Recent studies have found that consumer behaviour trends towards eco-friendly attitudes have been increasing. For an example, a survey made by UK corporate bank in 1999, has found 17% of respondents are “feel guilty about unethical purchase” and it has increased 44% in 2005 (Grant, 2007, p. 35).

Consumer satisfies and discontent are the customer judgment whereas a firm succeeds or let down in meet expectation (Oliver 1980). Met potential outcomes in consumer satisfaction unmet expectation outcomes in consumers' frustration. In his other writings, Oliver (1997) define satisfactory summary of mental state results when the feeling of immediate unconfirmed expectation is attached with a prior feeling almost customer practice. In simple, satisfactions have conceptualized in term of whether the goods or services meet customer requirements and expectation (Zeithaml&Bitner 2000).

H10: There is an impact of affective attitude on behavioural intention.

3. METHODS

Conceptual Framework

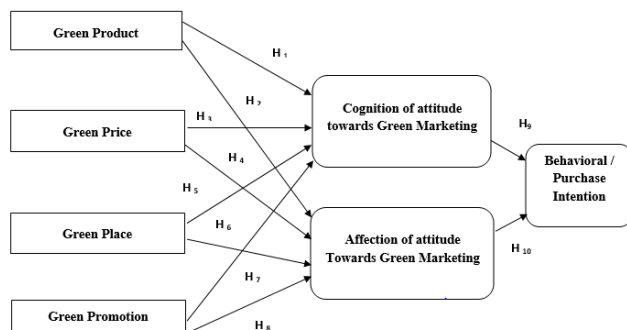


Figure 1: Conceptual Study Model

Source: Author developed based on literature review

Figure 1 shows the conceptual framework of the research study. The marketing mix variables have been taken as independent variables while cognition and affective components of attitude have been the mediating variables that lead to making consumer purchase intention which is the dependent variable.

Research design

A descriptive cross-sectional research study was carried out to test the formulated hypothesis. In this research, the population is the entry population of the country population. The sample size for the research is 150 customers who visit local food cities for their daily purchase needs. Basically, three locations have been identified as a field to gather data and selected food cities are Cargills Food city, Keells food city and Arpico food city in Matara. Convenient sampling technique is use for the study. Required data will be gathered through a structured questionnaire by forwarding to the selected population and questionnaire will consist of questions which align with the research objectives. The questionnaire will be prepared in English and Sinhala. The questionnaire will be pre-tested to clarify misunderstandings and necessary changes will be made to upgrade the questionnaire. Collected data sorted and analyzed by using SPSS and SMART PLS software packages. Cross- tabulations, regressions, correlation, regression and other analysis techniques used to analyze data to assess the relationship between independent and dependent variables.

Results and discussion

Ten hypotheses were developed based on the framework based on the literature and the first hypothesis was that there is an impact green product on consumer cognition. The second hypothesis was that there is an impact of green product on consumer affection and both first and second hypotheses were supported with the literature of Kotler, 2013 and Soonthonsmai, 2007. The third hypothesis was that there is an impact of green price on consumer cognition and the fourth one was that there is an impact of green price on consumer affection. Both hypotheses supported with literature from Chang, 2011. Fifth and sixth hypotheses were that there is an impact of green place on consumer cognition and there is a positive impact between green place and consumer affection with the literature support of Wanninayake and Randiwela, 2008. Seventh hypothesis states that there is an impact of green promotions on consumer cognition and eighth hypothesis was that there is an impact of green promotion on consumer affection with the literature support of Ann et al., 2012 p. 96. Next hypothesis was that there is an impact of consumer cognition on purchase intention and it was supported by the literature of Blackwell et al., 2006. Final hypothesis was that there is an impact of consumer affection on purchase intention and it was supported by the literature of Vernekar and Wadhwa, 2011.

Confirmatory factor analyze was carried out to verify the unidimensional of the data and check the reliability of each measurement scale of variables. Generally, the data analysis conducted by using smart PLS or PLS-Graph, and followed two stages such as assessing the outer model and assessing the inner model (Urbach and Ahlemann, 2010). Standardized factor loading and t-values of each item and composite reliability and Average Variance Extracted (AVE) value of each construct were used to check the fitness of the model.

The original model consisted of 32 items and reproduced model developed by removing 9 items. Each item which has below 0.5-factor loading value and below 1.96 amounting t-value ($\beta < 0.5; t < 1.96$) were deleted from the original model and final model were created with the items which have above 0.5-factor loading by following the guidelines of Bagozzi et al. (1991). The reproduced model has consisted of 23 items which were among the requested factor loading and t-values as below table 1.

Table 1: T-Values

Variable	Original (Items)	Reproduced (Items)	Reliability/Validity (Original)	Reliability/Validity (Reproduced)
Green Product	9	4	0.780/0.291	0.765/0.527
Green Price	3	3	0.699/0.447	0.700/ 0.562
Green Place	4	4	0.854/0.596	0.854/0.596
Green Promotion	5	5	0.850/0.536	0.850/0.536
Consumer Cognition	3	2	0.560/0.441	0.785/0.653
Consumer Affection	4	2	0.507/0.303	0.762/0.617
Purchase Intention	4	3	0.659/0.351	0.742/0.533

(Survey Data, 2015)

Source: Author developed

The hypothesis of the study can be evaluated t-value for each loading, path coefficient and significance level (Hair et al., 2006). Required cut off criteria for hypothesis testing were greater than or equal to 1.645 t-value, positive path coefficient and $P < 0.05$. Ten hypotheses were tested under the model and values obtained by running Smart-PLS software. There were ten hypotheses were tested according to the reproduced model and six of them were supportive as per the analysis is shown below table 2.

Table 2: List of Hypothesis

Hypothesis	Results
H1: There is an impact of green product on consumer cognition	Not Supported
H2: There is an impact of green product on consumer affection	Supported
H3: There is an impact of green price on consumer cognition	Supported
H4: There is an impact of green price on consumer affection	Not Supported
H5: There is an impact of green place on consumer cognition	Not Supported
H6: There is an impact of green place on consumer affection	Supported
H7: There is an impact of green promotion on consumer cognition	Not Supported
H8: There is an impact of green promotion on consumer affection	Supported
H9: There is an impact of consumer cognition on purchase intention	Supported
H10: There is an impact of consumer affection on purchase intention	Supported

Source: Author developed

Discussion

The main objective of this study was to examine the impact of green marketing on consumer purchase intention in Sri Lanka. The conceptual framework for the study was developed with linking green marketing mix with the consumer attitudes and it linked with the consumer purchase intention as mentioned in figure 1.

Ten hypotheses were developed based on the framework based on the literature and the first hypothesis was that there is an impact green product on consumer cognition. The second hypothesis was that there is an impact of green products on consumer affection and both first and second hypotheses were supported with literature of Kotler, 2013 and Soonthonmai, 2007. The third hypothesis was that there is an impact of green price on consumer cognition and fourth one was that there is an impact of green price on consumer affection. Both hypotheses supported with literature from Chang, 2011. Fifth and sixth hypotheses were that there is an impact of green place on consumer cognition and there is a positive impact between green place and consumer affection with the literature support of Wanninayake and Randiwela, 2008. Seventh hypothesis states that there is an impact of green promotions on consumer cognition and eighth hypothesis was that there is an impact of green promotion on consumer affection with the literature support of Ann et al., 2012 p. 96. Next hypothesis was that there is an impact of consumer cognition on purchase intention and it was supported with the literature of Blackwell et al., 2006. Final hypothesis was that there is an impact of consumer affection on purchase intention and it was supported with the literature of Vernekar and Wadhwa, 2011.

This research is very useful for academics as this refers to an emerging study area such as green marketing and this refers to future-oriented area of marketing. This research covers entire marketing mix than measuring the impact of one or few marketing mix element and this would be useful to get a broader view about green marketing mix for the academics and students to for their future research purposes. The model for the study was developed with ten hypotheses based on literature support and some hypotheses were not supported with the result of the study and those areas would effective to draw the attention of the academics to concentrate again and reanalyze those study areas.

The contribution of this study if more valuable for managers because of green marketing is a new trend of marketing and it has a minimum application in Sri Lankan market. Finding of the study reflects many areas to be concern by the managers on their green marketing effort. According to the finding of the research, green product did not have a positive impact on

consumer cognition. However green product had a positive relationship with consumer affection. This should consider by the managers to position their green products well on the mind of their target group as cognition refers to thought towards a product. Both consumer cognition and affection showed a positive impact on their purchase intention and this shows that the managers could focus more on green consumer behavior to be successful with their marketing effort.

Green marketing is a newly developed area in Sri Lanka and it could develop in many areas such as development, promotion, education, and infrastructure development. With the results of this research, it mentioned that the cognitive interests of the consumers towards green marketing mix shows a negative relationship with many cases. Here the policymakers can make actions at their level to increase awareness of the people towards green products and they can make policies to promote this green consumerism. As well as they can mention the people, their social responsibility as a nation through promotion and educating the society. The green place shows a negative impact on consumer cognition and a positive impact on consumer affection. This reflects that the consumer does not think about the place they buy or visit and they love to have a green place when they are attempting to purchase of green products. However, the policymakers should identify the expectations of green consumers to develop this area in future. Especially they can grant subsidies for green producers, bring out new policies to prevent fertilizer usage, and develop new green destinations for eco-tourism entrepreneurs to develop green marketing in Sri Lanka.

Future Research

This study mainly focused on the consumer purchase behavior on FMCG goods. This can be conducted for other goods such as industrial products, luxury goods, semi-luxury goods and other convenience goods as consumer buying behavior may vary with the type of products. Same way the consumer perception can be measured through the industrial green application of the companies. This study is highly focuses on the impact of the traditional marketing mix (4Ps) and it can study further by using extended marketing mix (7Ps) with purposing to measure the consumer purchase intention on green services. The same study can be extended to measure the gender influence on the purchase of green products by using a homogeneous gender sample for the study. Same way it can be extended with a more focus on selecting a homogeneous sample such as similar educational qualification holders, people within the

same age groups. The sample size had to be limited to 150 respondents due to the time frame the quality of the research could be increased by increasing the sample size.

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Institute Social Responsibility by Going Green- A Study at KLS Institute of Management Education and Research, Belagavi, India

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Abstract

Rapid industrialization over the last few decades has resulted in exploitation of the environment leading to an adverse impact on the climate which, if left unattended, can lead to unprecedented natural disasters for the future generations. There is an urgent need for countries across the globe to focus on sustainable development to protect their natural resources for current and future generations. The approach to such a development cannot be a knee jerk reaction. It has to be a proactive, well-planned and coordinated effort from all the stake holders of a country. The education sector is an important stake holder in any country and management education is a vital component of this sector. Business schools through their institute social responsibility (ISR) initiatives can play a key role in the sustainable development. This paper discusses sustainable development and corporate social responsibility (CSR) and the role of education sector in India, in general and business schools in particular, in sustainable development through going green. The paper further discusses the initiatives undertaken by KLS Institute of Management Education and Research, a standalone business school with a student strength of 240 in Belagavi, a small tier-II city in the southern state of Karnataka in India towards sustainable development and ISR in its journey towards becoming a green campus. The paper suggests ways to further improve the ISR efforts of the institute to gain competitive advantage.

Keywords: Sustainable Development; Institute Social Responsibility; Green Campus; Education Sector; Competitive Advantage

INTRODUCTION

The COP 21 Paris Climate Conference that opened in the first week of December, 2015 is perhaps the first global event in recent times that has made people from all walks of life around the globe to sit up and take notice. Currently we are facing the most severe environmental crisis in modern history as a consequence of unsustainable development due to mismanagement of our natural and social resources. In the last five decades or so, economies around the world including India had adopted rapid industrialization as a means to grow and improve the quality of life for their citizens. However this relentlessly pursuit of growth by mankind through

industrialization and unprecedented production and consumption has resulted in adverse impact on the climate. Human beings are destroying nature and damaging the environment. 'Man has become the worst enemy of man'. It is therefore for human beings around the world to take up their responsibilities and influence their governments and corporate businesses for the good of future generations.

Business corporations operate in a pluralistic society. There is a high level of interaction and interdependence between the business and the society. As business organizations draw their resources from the society and as their actions have a considerable impact on the environment there has always been a feeling amongst them that they should be more responsible towards society and the environment. However the time has now come where corporates need to be proactive and have a strategic approach towards their social responsibilities to ensure their contributions towards reducing global warming and at the same time have a competitive edge. The education sector is a major stakeholder in shaping economy and culture of any country and the role of business schools is paramount in grooming future leaders and managers who will be leading the corporates under various capacities to be more sensitive to sustainable development of the country. The business schools through their Institute Social Responsibility (ISR) initiatives can play a significant part in internalizing values and commitment to the society amongst their students through experiential learning to become transformative agents within the society and lead by example through sustainable practices towards nation building.

SUSTAINABLE DEVELOPMENT

Economies around the globe have been dumping sewage, production wastes and trash into air, rivers, streams and open land since industrial revolution. They have indulged in massive deforestation, released Man-made gases like hydro-fluro carbon; nitrous oxide; carbon dioxide and methane leading to environment pollution, acid rain, depletion of the ozone layer and global warming. There has been a significant impact on biodiversity, forestry, agriculture, availability of water resources, dry land and human health. Countries have realized that if significant efforts are not made immediately to arrest this phenomenon it will lead to ecological, social and economic disasters in their countries. India too has been impacted badly, it is the world's sixth largest and second fastest growing country in terms of producing greenhouse gases. Metro cities Delhi, Mumbai and Chennai are three of the world's ten most polluted cities. The disastrous impact of floods as witnessed recently in the southern state of Kerala and Chennai, water scarcity in Shimla and droughts in a large number of districts and

excessive heat has compelled people to think seriously to do something to address the problem of global warming.

The world has now become much concerned about the environmental issues in the global economy. There is an urgent need to build a sustainable society that incorporates values, systems and activities that are environmentally sound, socially just and economically viable. The Brundtland Commission in 1987 defined Sustainable Development as ‘The ability to ensure that humanity meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Daniel et al., 1987). According to the Triple Bottom-line approach (Savitz& Weber, 2006) sustainability is a balance between protecting the planet, taking care of the people and profitability, i.e. planet, people and profits. Environmental sustainability can be defined as ‘a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity’ (Morelli, 2011).

Environment sustainability is less about complying with existing and future regulations and more about proactively creating innovative business models integrating people, planet and profits to gain competitive advantage. Sustainability cannot be a one-off activity of a given organization or a result of sustainable practices of a few organizations. It has to be a sustained effort of all organizations in a given economy integrating all the economies of the world. In India Article 15A of the constitution has made it a fundamental duty of every citizen to protect and improve the natural environment including lakes, rivers and wildlife.

The rapid growth in internet technology and social networking has led to the enhancement of awareness and knowledge about the environment within the communities all over the world resulting in grass-roots environmental action that are without precedent. Communities across the world are now more conscious and concerned about their local environmental problems than ever before. Business corporations, the main engines of economic growth, face real pressures to respond to the environmental concerns. Customers are demanding safer and cleaner production facilities, products and services that leave a lower carbon footprint and waste-recycling programs. Employees are demanding safer and healthier work conditions. Governments all over the world are legislating thousands of environmental protection measures each year and above all the media is giving a strong voice to these demands prompting corporate action.

To face the environmental challenge corporations need to have a complete changeover to models that can result in environment sustainability. Times now demand the need to use natural resources in a sustainable way; i.e. meeting the needs in such a way that it not only meets the needs of present generation but also of the future. Historically corporations have thrived on the emergence of consumer societies. They have encouraged uncontrolled consumption through systematic promotion and advertising campaigns. This has resulted in breeding a highly consumerist, even anti-conservationist culture in people. Sustainable development requires more controlled and thoughtful patterns of consumption by the consumers. It calls for environmentally functional products and packaging. It requires cleaner and smaller scale production systems. It also calls for a radical rethinking in corporate promotion and advertising approaches.

However corporations are operating in fiercely competitive environments and face enormous pressures to cut costs. This limits their ability to spend on safety, environmental protection, health and maintenance. Managers have high job mobility, short job tenures and their performance evaluation and compensation is short term oriented. Therefore they have little motivation to consider the long term environmental issues when they are making their decisions. Yet corporations are the key engines of economic development and they are the vehicles on which sustainable development must ride. Sustainable development will succeed or fail depending on the ability to create sustainable corporations and Governments, consumers, communities and the media also have vital roles in achieving sustainable development. Business corporations have to be responsible to the natural environment in order to survive, sustain, grow and prosper in the intensely competitive global and knowledgeable markets. The looming environmental crisis offers great opportunities for companies, and visionary leaders can change their business models by leveraging sustainable development through efficient and effective use of energy and resources, development of Eco-innovations and human empowerment to gain competitive advantage.

CORPORATE SOCIAL RESPONSIBILITY

Corporate social responsibility (CSR) is a means adopted by many business corporations to sustainable development. CSR is the ability of the corporation to relate its operations and policies to the social environment in ways that are mutually beneficial to the company and the society (Koontz, 2004). The core objective of CSR is to optimize the overall impact of an organization on all its stakeholders and the society while considering the environment and

sustainability. The basic studies undertaken over the years have indicated a positive correlation between corporate reputation and their social responsibility initiatives (Hamilton, 1995). There are also studies showing positive correlation between environmental performance and financial performance of a company (Hart, 1999). CSR actions have economic value added implications on brand equity, company reputation, access to finance, employee motivation, innovation, intellectual capital and better risk management (Hopkins, 2004). This has resulted in companies adopting more systematic, progressive and visible CSR policies (Fombrun, 2005).

Some further studies in this area have revealed that even shareholders are increasingly supporting CSR initiatives even when such initiatives are not in their short term financial interest. They are advocating a code of conduct for managers in which, the pursuit of profits do not come at the expense of the environment, human rights, public health and safety, the dignity of employees or the welfare of the communities (Levin & Hinkley, 2004). Companies tend to adopt different approaches to CSR, the ones adopting an accommodative approach not only follow all the legal norms but will also go beyond in meeting their social responsibilities on a case to case basis when convinced of their merit. On the other hand companies adopting a proactive approach seek every opportunity available to them to contribute to the good of the society (Griffin, 2005).

In India the principles of CSR have been practiced informally since ancient times. Kautilya the great ancient Indian philosopher preached the importance of doing business ethically and helping the poor and the disadvantaged. Many industrialists of the pre-independent India practiced CSR through charity and philanthropy by establishing temples, hospitals, schools, higher education institutes and other infrastructure for public use. It is in the recent past that many of the corporate houses in India formally started practicing CSR voluntarily. However as the number has not been very encouraging the Government of India enacted Companies Act 2013 effective from 1st April, 2014. As per section 135 of the act all the companies having net worth of USD 71.6 million or above or an annual turnover of USD 143.2 million or more or a net profit of USD 0.72 million or more in a financial year have to spend at least 2% of the average net profits of the last three years for the company's CSR policy. In case the said amount is not spent, the reasons for not doing so are to be disclosed in the Board's Report. CSR is a major contributor to sustainable development through the balance of a company's economic, environmental and social objectives while addressing stakeholder expectations and increasing shareholder value. Many companies approach sustainability through their CSR policy. As per

schedule VII of the act one of the activity that can be undertaken by the company as a part of their CSR is ensuring environmental sustainability and ecological balance.

EDUCATION FOR SUSTAINABLE DEVELOPMENT

As it is critical to adopt a holistic approach to sustainable development in these challenging times, nations need to internalize sustainable development in their citizens and education is the best tool to do so. Realizing the need for integrating the principles, values and practices for sustainable development with education, the United Nations launched the ‘Decade of education for Sustainable Development’ in 2005. Many schools responded positively and started adopting greening of school campuses. In schools practicing sustainable development stakeholders felt that there are benefits to going green and would likely support greening efforts. However they perceived that limited resources of money, time, information, and personnel presented substantial barriers to leading and managing green school campuses (Veronese & Kensler, 2013).

Education in India is dominated by both the government and the private sector and can be broadly classified into primary education which offers education from nursery to the twelfth grade and the higher education offering education in medical, engineering, management, law etc. The National Policy on Education-1986 reiterated the growing need to address the environmental concerns in India. Primary education can play a crucial role in building a strong foundation of environmental ethics amongst the children as skills, values and attitudes are inculcated from early years in an individual’s life. Further the supreme court of India in its judgment in December, 2003 directed that environmental education should be an integral and compulsory part of school curriculum from Standard I to Standard XII. The Indian government felt the need to formalize education in sustainable development and include appropriate processes in the school curricula. Education for sustainable development is now a core of the curriculum of each subject area developed by the National Council of Educational Research and Training (Sharma & Pandya, 2015). The execution of the curriculum ensures that children are sensitized to sustainable development through experiential learning.

If primary education plays a crucial role in building a strong foundation of environmental ethics in children, higher education plays a crucial role in shaping people as future leaders and decision makers. Institutions of higher learning like colleges and universities are always in the forefront of any transition. They have an enormous impact on a country’s workforce, economy and environment and are well positioned to provide leadership in planning and implementing

sustainability. They can play a key role in innovation and environmental education and provide a great opportunity for a generational behavior change towards sustainable development (Jackson, 2011). Universities can contribute to sustainable development by practicing sustainability in their own operations as well as formally educate their students to inculcate sustainability in their personal and professional lives and prepare a workforce for new reoriented or emerging jobs in a sustainable economy.

A sustainable university can be defined as ‘an institution of higher learning that addresses, involves and promotes, on a regional or a global level, the minimization of negative environmental, economic, societal and health effects generated in the use of its resources in order to fulfill its function of teaching, research, outreach and partnership in ways to help society to make the transition to sustainable lifestyles, (Hordijk, 2014). There is a positive perception about sustainable universities in the minds of the stake holders. Studies have also shown that higher the integration, inclusion and diffusion of the sustainability theme in the institutional, managerial, research and teaching activities of universities, higher is their rankings (Salvioni, et al., 2017).

As discussed business corporates are major players in sustainable development through their CSR efforts, so amongst higher education institutes the role of management institutes in particular needs specific emphasis. These institutes are a major source of human resource for leadership and critical decision making roles for organizations. As more and more business organizations are adopting sustainable development as a strategic tool to gain competitive advantage they are exploring management institutes that can provide management talent that is sensitized to CSR and can plan and execute CSR strategies at various organizational levels.

Management institutes are facing stiff competition due to the mushrooming of management schools in almost all countries across the globe. In order to remain relevant, survive and grow they need to keep pace with the changing needs of the industry. To become the preferred source of talent for corporate in the current times, they need to groom talent that are sensitive to and possess the relevant skills to plan and execute strategies of sustainable development and CSR for organizations. To achieve this they need to practice institute social responsibility (ISR) to provide an ecosystem on their campus for experiential learning. The institutes need to establish and maintain an ethical approach towards all the stakeholders, strengthen societal citizenship and commitment to society and provide services to local community. They need to develop a culture that encourages environmental commitment and sustainable development at

both local and global level amongst students. ISR can be defined as ‘The continuing commitment of the institute with a vision to manage ethically and behave responsibly towards all its stakeholders and the society and to promote a culture that will transform students into business leaders with a mindset for sustainable development’.

After liberalization in the 1990s India witnessed a phenomenal growth in management education. There was a mushrooming of management institutes in Tier – II and in some cases even in Tier- III cities in almost all the states till the late 2000s. A significant number of these institutes have not been able to sustain over the years and are on the verge of closedown as per recent reports. However Indian corporates urgently need highly qualified and talented management professionals with a mindset for sustainable development to help them compete in the hyper competitive global environment and management institutes need to gear up to meet this emerging need.

INSTITUTE SOCIAL RESPONSIBILITY AT KLS INSTITUTE OF MANAGEMENT EDUCATION AND RESEARCH (KLS’ IMER)

Founded by eminent lawyers Karnataka Law Society established KLS Institute of Management Education and Research (KLS IMER) in the small Tier – II city of Belagavi in Karnataka state, India, in the year 1991. It is a premiere management institute offering a two years full time degree in Masters of Business Administration affiliated to Rani Channamma University, Belagavi. It is recognized by AICTE, Ministry of Human Resource and Development, New Delhi. It has been accredited by NAAC with grade ‘A’, recognized by UGC under 2(f) and 12(B) and by Rani Channamma University as a Research Center. The Institute has been bestowed with A++ by Business India and Dalal Street Finance E-Journal consecutively for 3 Years and also recognized among top institutes of India by Competition Success Review. IMER has always adapted to the rapidly changing business environment and remained the pioneer institute in the field of management education, research and consultancy and is the preferred destination for recruitment of management graduates in this part of the country. As an institute of higher learning IMER is aware that the seeds of change sown on its campus will grow and disperse afar. This provides an opportunity to lead in inculcating environmental culture and train the students to develop new paradigms for solving problems that are local, national and global in nature. Hence the institute has strived to lead by example and evolved an effective approach to ISR by going green to respond to the corporate need for management students with a mindset for sustainable development.

Going green of an institute means to pursue knowledge and practices on its campus that can lead to more environmentally friendly and ecologically responsible decisions and lifestyles, which can help protect the environment and sustain its natural resources not only for the current generation but also for the future. It focuses on three key activities; Recycle, reduce and reuse. A green campus is a place where environmentally responsible education and practice go hand in hand. Here operational functions, business practices, academic programs and most important the people are interlinked towards sustainability (Nath, et al, 2013). Recently Indian Institute of Technology -Dharwad, the latest entrant to the IITs, the prestigious and premium technology institutes in India, has set itself a challenge to build an eco-friendly and green campus in a forested area that will have minimum impact on the surroundings. They hope to achieve a near-net zero waste status, water reuse and alternative sources of energy like solar, wind and hybrid (Kumar,2018).

Green Campus Initiatives at KLS' IMER

KLS' IMER has initiated a number of green campus practices as a part of its ISR over the years with the unstinted support from its management and active participation of its students and staff. They include small initiatives with minimal expenses to big ticket investments. The focus is on reduce, reuse and recycle.

Centre for Ethics and Social Responsibility: The institute established the centre on its campus on 3rd December, 2009. The purpose was to supplement management education through value based inputs and inculcate social responsiveness amongst students and other stakeholders and to provide a platform to industries, institutes and government agencies to promote ethics and social responsibility. All the activities of the centre are driven by the students and guided by the faculty coordinator. Some notable activities initiated by the centre are, organizing international conferences on Business Ethics and Corporate Social Responsibility, sponsoring students to attend CSR workshops conducted by industries and publishing research papers on Ethics, Values and CSR in international and national conferences. It also promotes social outreach activities like cleanliness drives, vidhyaadhaar projects, rural health, rural and tribal literacy and community development. Blood donation camps are conducted annually in association with the Indian Red Cross Society, where all eligible students donate blood along with staff and other members of the local community.

Greening of the energy supply: Fossil fuels, the major source of energy at present, continue to pollute our air and water and are fast depleting. The demand for energy will continue to rise

putting enormous pressure on the existing resources. KLS' IMER has undertaken major initiatives to transition towards sustainable energy sources that are environment friendly and renewable. To meet its increasing energy requirements the institute explored the use of solar energy that is a renewable resource and does not emit any greenhouse gases in its generation process unlike power generated by the grid of the company supplying power. The institute has installed a 70 kWp Grid Tie Solar PV roof top power generating system on its terrace at an investment of USD 59,765 (1USD = 69.84 Rupees) in the month of April, 2017 and is integrated into the power grid on campus. In its first year of operation it has not only helped IMER in reducing its carbon footprint but also its energy bills to a large extent. The financial savings during the year is depicted in Table 1. At the current rate the investment in the project is expected to be recovered in 7 years. A student campus intern is involved in monitoring the project.

Table 1: Financial Report of the 70kWp SRTPV from May 2017 to April 2018

Months	Solar power generated in (Units)	Powerbill before Installation (USD)	Power bill after installation (USD)	Savings (USD)
May	9,390	1162.30	627.61	534.69
June	5,891	1230.07	362.84	867.23
July	6,138	818.71	641.37	177.35
August	6,592	790.81	519.76	271.05
September	7,473	1054.27	237.96	816.31
October	8,877	960.09	235.31	724.79
November	9,055	1007.30	280.86	726.45
December	9,819	1134.88	285.14	849.74
January	9,618	1036.83	195.09	841.74
February	9,240	1021.12	172.02	849.10

March	9,628	1198.65	134.44	1064.22
April	8,249	1198.65	380.71	817.94
Total	99,970	12613.69	4073.10	8540.59

Source: KLS' IMER records

Standalone street lights powered by solar energy have been installed on campus. To reduce energy consumption seventy percent of the tube lights have been replaced by low energy consuming LED lamps in a phased manner as on date. In order to harness alternative sources of energy, the institute has installed a portable FRP biogas plant in February, 2015 with an investment of USD 415 to optimize the utilization of food and vegetable waste generated on campus every day and convert it into energy that is used to meet the partial energy requirements of cooking in the canteen. Students have been involved in projects to reduce energy wastage as a part of their 5s projects. Off campus students are encouraged to travel by the college bus to reduce the consumption of fossil fuels.

Rain water harvesting and reduction in usage of water: With the ever growing population it is predicted that water will be the major cause of conflicts in the future globally. Any effort towards environmental sustainability will be incomplete without water conservation being a part of it. Rainwater harvesting is an effective technique of water conservation by collecting, storing and using rainwater and also for recharge of groundwater. KLS'IMER installed the rooftop rainwater harvesting system in June, 2016 at an investment of USD 7860. The rainwater collected on the rooftop of the main building is directed to a storage tank and then to a well through gravity. The KLS' IMER main building has a roof area of 1468.4 Sq. mtr. The average annual rainfall of Belagavi city in which the institute is located is 1064 mm. considering a runoff coefficient of 0.9 the average annual water harvested is 14,06,140 Litres (1468.4 X 0.9 X 1064). The harvested water collected in the well during monsoons is used later for irrigating the landscape garden and campus maintenance. This has helped reduce the usage of metered water from Belagavi Municipal Corporation. The institute has reduced the water wastage by creating awareness about the same amongst the students and staff.

Move towards a paperless campus: Mindless degradation of forests has resulted in adverse climate changes. To save trees the institute has initiated a number of measures to reduce paper usage to the bare minimum. Campus management software, Contenio, was installed in 2011 and since then all internal communications are in digital form and so are communications and

other operational requirements with management, university, parents and students including their assignments and internal tests except in cases where physical documentation is mandatory. The institute is moving towards green marketing in its promotions with the adoption of digital advertising and distribution of all promotional material in soft form. Most of the financial transactions of the institute are now digital. All waste paper generated is donated to a NGO, that is further recycled and the revenue generated is used for funding education of the needy. To contribute to increase in the green cover of the city, every year the students and staff are actively involved in tree plantation programs in association with industries and NGOs like Green Savors.

Recycling and disposal of waste: Waste disposal especially, chemical and electronic, has become a major concern on our finite planet. Organic waste like leaves from trees and plants, waste food and cut vegetables, slurry from the biogas plant etc. dumped were creating unhygienic conditions on campus. KLS' IMER installed a vermicomposting unit on campus with an investment of USD 573 to convert such waste to exceptional quality organic manure which is now being used as a fertilizer for the campus garden in place of chemical fertilizers used earlier. The rapid change in electronic hardware technology generates huge amount of e-waste on a regular basis, which if not disposed properly will lead to environmental degradation. Disposal of e-waste is a challenge both logistically and economically. To tackle this problem KLS' IMER has donated its obsolete computers over the years to primary schools for reuse. Broken down electronic parts are aggregated along with those from the sister institutions at the board level and disposed scientifically with the help of expert vendors.

A number of benefits have accrued to the institute as a result of its green campus initiatives to date, a few notable ones are; enhanced reputation in the area as a socially responsible business school that leads through example; transformation of students into business leaders sensitive to sustainable development who will also be preferred by the corporate to lead at various levels in future; contribution towards better accreditation grades; economic benefits through savings; improved quality of life on campus and above all contribution to nation building.

Going Green at KLS' IMER - the road ahead

The management of the institute has approved a proposal to establish a CSR Advisory Cell headed by a team of faculty members which will be launched on 29th September, 2018. The major objective of the cell is to guide and support the local industries that come under the purview of Section 135 of Companies Act 2013, to formulate and implement their CSR

policies. As discussed KLS' IMER has undertaken a number of green campus initiatives over the years, as a part of its ISR, however it still has a long way to go in its journey towards being a major change agent towards sustainable development. The efforts will be effective if it adopts a strategic approach towards ISR. The institute should incorporate the green campus intent in its mission statement. The role of the institute as an environment leader including the intended behavioral change should be spelt out clearly with mapping of long-term options and desired outcomes. A strategic plan for sustainable development needs to be formulated with inputs from all the stakeholders and faculty members should play a proactive role along with students.

The organization should be restructured to help implement the plan effectively and the student body should be a part of the structure. Specific tactical plans need to be drawn from the strategy and student teams be created to execute the specific tasks. Student campus internships should be explored for projects of long term duration. Certificate courses in sustainable development should be introduced to educate students more formally. The institute should establish strategic partnerships with local environmental agencies, NGOs and business communities wherever necessary to improve effectiveness. An elaborate system to evaluate ISR efforts should be established and faculty effort in this area should be a part of the performance appraisal system.

Conclusion

There is tremendous pressure on countries across continents to take serious note of the adverse impact climate change has had on the environment in recent times. Nations will be able to face up to this challenge only if there is a congruent approach from all its stakeholders towards sustainability of the environment. Business corporations whose operations have contributed significantly to this climate change and who draw resources from the society for their existence have to take ownership towards creating a sustainable environment for the future generations. It is here that education sector in general and business schools in particular will play a significant role in providing human resources for leadership roles at different levels of business corporations.

KLS' IMER though operating in a small tier – II city in India, has recognized the importance of ISR to remain relevant in the intensely competitive environment. It has been investing in green campus initiatives over the years with some pressure on its limited resources. However the efforts have not been coordinated and strategic in planning and implementation. The initiatives can be strengthened and made more effective and efficient by adopting a strategic approach towards ISR. The strategies should be aligned to the extent possible with the institute

objectives to achieve the desired outcomes. The impetus for sustainable development should begin at the top, emanate throughout the institute, involve all stakeholders and become ingrained in the campus culture. This will help KLS'IMER to build its brand equity, long term community relationships, gain competitive advantage and contribute its bit to nation building and ensure a healthy planet for the future generations.

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Mediating Effect of Organizational Commitment on the Relationship between Quality of Work Life and Job Performance: Evidence from Station Masters in Sri Lanka Railways

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Abstract

Quality of Work Life in an organization is a critical factor for deciding organizational effectiveness and reducing the negative behavior of workers. This concept is considered as a deciding factor of employee related outcomes. A systematic study based on the hypothetical deductive method was carried out to glean empirical evidence from the Sri Lanka Railways context, with regard to Organizational Commitment and its mediating effect on the Quality of Work Life –Job Performance relationship. This study was correlational and cross-sectional in the time horizon and the unit of analysis was the individual. A stratified random sample of 280 Station Masters was selected from the Railways Department in Sri Lanka. A pre-tested, structured, self-administered questionnaire (utilizing a 5-point Likert scale) was used to collect primary data. The SPSS version 23.0 was applied, and correlation and regression analyses were conducted. Quality of Work life was positively and significantly related to Job Performance and Organizational Commitment. Further, Organizational Commitment was positively and significantly related to Job Performance. The construct of Organizational Commitment partially mediated the relationship between Quality of Work Life and Job Performance. The results were consistent with the four formulated hypotheses, establishing that Organizational Commitment mediates the relationship between Quality of Work Life and Job Performance of Station Masters who work in the Railways Department in Sri Lanka. Hence, this study provides evidence to confirm the relationship between quality of work life and job performance of the Station Masters working at the Railway in Sri Lankan context. Further this relationship can be enhanced through the mediating effect of organizational commitment Theoretical and managerial implications of the findings and directions for further research are discussed at the end of the paper.

Keywords: Job Performance, Quality of Work Life, Organizational Commitment, Railways, Station Masters, Sri Lanka

Introduction

‘Job Performance’ (JP) is a multifaceted construct for determining an organizational outcome and its success. It is a central construct in industrial and organizational psychology (Campbell,

1990; Austin & Villanove, 1992; Schmidt & Hunter, 1992; Murphy & Cleveland, 1995, Koopmans et al., 2011; Ramawickrama et al., 2017b). It is simply defined as the quantity and quality of the output of each employee who works in an organization. Organizations expect to sustain a better outcome from their workforce throughout their period of employment. Organizational Commitment (OC) is an important factor needed to determine the overall performance of an organization (Abdul-Nasiru et al., 2014). No organization can perform at peak levels unless each employee is committed to the organizational objectives (Dixit & Bhati, 2012). Therefore, employee wellbeing is an essential element that needs to be improved in modern organizations. Schuler and Youngblood (1986) mentioned that 'Quality of Work Life' (QWL) involves both job design and work environment. Recently, many researchers have paid attention to the construct of QWL and JP, and they have found a positive relationship between both concepts representing various sectors in different countries (Beh & Rose, 2007; Gayathiri & Ramakrishnan, 2013; Shekari et al., 2014; Muindiet et al., 2015; Mohammadi, 2016). Sri Lanka Railways (SLR) is a government department which functions under the Ministry of Transport. It is a major transportation service provider, and is the only rail transport organization in the country. The rail transportation system was introduced to Ceylon (now Sri Lanka) in 1864 during the British Colonial Era. Having the mission of "Providing a safe, reliable and punctual rail transport service for both passengers and freight traffic, economically and efficiently", this organization provides, even now, a huge service to the country. According to the Performance Report of SLR (2017), its number of current employees is 15,413. Hence, employees who are in the organization have become the backbone of this organization and the level of their performance is highly important to the organization. Station Master is one of the employment categories among the employees of the Railways department. The "Station Master" (SM) is an officer appointed by the General Manager Railways to be in over-all charge of the station. Since the work is physically very demanding and stressful in this special job category, only males are employed as Station Masters (SMs) in SLR. Accordingly, the main aim of this study is to investigate whether there is a mediating impact of OC on the relationship between QWL and JP.

Problem Context and Importance of the Study

There are only a limited number of empirical findings related to Railways in SL. The studies of Kesavan et al. (2015) and Halpita et al. (2011) have revealed many of obstacles faced by SMs and suggestions for overcoming them. As they mention, though the Railways is 150 years old, the current level of service and working facilities are not at a satisfactory level. The writer

and novelist, Ellis (1994, p.3), as a regular user of railway transport in Sri Lanka, has penned his feelings as follows. “*I am grateful to the railway men, particularly the Guards, Drivers and Station Masters who are proud of the Railways and have always been helpful with information and advice.*” The above statement provides evidence that the three parties i.e. Guards, Drivers and Station Masters are more responsible related to the operating and service providing activities of the railway. Among them SM is the most responsible person for handling all the tasks related to operations and administration of a particular station. Though there are many other important professions in the railway, they are performing their tasks behind the scenes. But the profession of SM is too close and popular among the passenger and other related parties. Within his limits, he works as a manager. Due to a lack of adequate empirical evidence showing the relationship between QWL and JP, it is necessary to find empirical evidence from SMs who work in the Railway Department, SL.

Many researchers have defined JP differently in different decades and they have used various dimensions for measuring JP in a wide range of professions in different disciplines around the world (Ramawickrama et al., 2017b). Further, they have highlighted the necessity of obtaining empirical findings for measuring JP. As a result, the current researchers faced difficulties in applying clear-cut measurement dimensions for measuring JP. Hence, this study seeks to establish appropriate dimensions for measuring the JP of SMs who work in SLR.

Walton (1975) highlighted that QWL in an organization is a multifaceted concept that consists of humanistic values and social responsibilities. The concept of QWL is an abstract construct, having less measurable and observable properties than a concrete concept. Researchers face difficulties in defining and measuring this abstract concept due to its subjective nature. Ramawickrama et al. (2017a) reviewed more suitable measurement dimensions for the variable QWL for different careers in multiple sectors in various country contexts, and concluded that measurement dimensions vary according to the selected profession, organization, and industry, as well as the country concerned. Further, Beh (2011) points out that there is no one size of QWL that fits all organizations in any country. Every organization needs to develop its own QWL to represent its employees, customers and organizational needs. Consequently, it is necessary to find suitable measurement dimensions of QWL for the SLR.

Empirical evidence proves that QWL relates significantly with JP (Rose et al., 2007; Gayathri & Ramakrishnan, 2013; Shekari et al., 2014; Taghavi et al., 2014; and Rai, 2015). The above evidence shows that there is a relationship between QWL and JP in relation to multiple work groups in various types of organizations in different countries including SL. Therefore, due to a lack of exact evidence from empirical findings, further research is needed to explore the

relationship between QWL and JP of a specific profession in a particular organization in a given country. Further, some researchers have conducted studies in relation to QWL and OC (Louis, 1998; Normala, 2010, Ahmadi et al., 2012; Parvan et al., 2013; Ali & Zilli, 2015; Omugo et al., 2016). Hence, there is a research gap in the area of investigation of the relation between QWL and OC related to SMs work in SLR.

Though the above findings show a positive relationship between the variables, studies were done on different work groups and were organization-specific as well as country-specific. Hence, the fourth research gap exists in the need to clarify the relationship between QWL and OC with reference to a specific profession in a particular organization for a particular country. On the other hand, a higher level of OC helps to reduce employee related negative behaviors such as tardiness, absenteeism and turnover. McShane et al. (2008) mentioned that “employees with high affective commitment also have higher work motivation and organizational citizenship, as well as higher JP.” Uthayakumar and Opatha (2003) also highlighted that OC is a strong predictor of JP. Though the above findings show the numerous relations between OC and JP, the findings have come from different work groups, in various types of organizations worldwide. Hence, further evidence is needed to clarify the relationship between OC and JP with particular reference to SMs in the railway sector in Sri Lanka.

Further, findings show that some researchers have used OC as an independent variable in their studies (for example Van Maanen, 1975; Porter et al., 1976; Porter et al., 1977; Steers, 1977; as cited by Reichers, 1985). Some other researchers considered OC as a dependent variable (for example Hall et al., 1970; Buchanan, 1974; Farrell and Rusbult, 1981; Morris and Sherman, 1981; as cited by Reichers, 1985). This trend is further noted by Louis, 1998; Normala, 2010; Ahmadi et al., 2012; Parvan et al., 2013, Ojedokun, 2015, Ali & Zilli, 2015 and Omugo et al., 2016, who have also conducted studies on the concept of OC as a dependent variable. However, a few researchers such as Varghese and Jayan (2013), Kim (2014) and Nayak (2015) have found that OC works as a mediating variable in their research.

As a result, it can be seen that plenty of studies have been conducted with OC as a dependent variable as well as an independent variable. This reveals a lack of sufficient evidence for the use of OC as a mediating variable in the research archives. Therefore, evidence is needed to ensure the mediating effect of OC on the relationship between QWL and JP, especially for SMs in the SL context. Based on the above discussed research gaps in the literature, four specific research questions have been developed.

1. Does QWL have a significant relationship with JP among the SMs who work in SLR?
2. Is QWL positively and significantly related to OC for SMs who work in SLR?

3. Is OC positively and significantly related to JP among the SMs who work in SLR?
4. Does OC intervene significantly in the relationship between QWL and JP of SMs who work in SLR?

The broad objective of this study is to investigate whether organizational commitment influences the relationship between quality of work life and job performance of station masters who work in the Sri Lanka Railways department. The four specific objectives of this study are as follows:

1. To empirically investigate the relationship between QWL and JP among SMs who work in SLR.
2. To empirically investigate the relationship between QWL and OC with regard to SMs who work in SLR.
3. To empirically investigate whether the OC is positively and significantly related to JP of SMs who work in SLR.
4. To empirically investigate the mediating effect of OC on the relationship between QWL and JP among SMs who work in SLR.

Literature Review

Job Performance: In 1974, Porter and Lawler defined JP as a function of individual ability, skills and effort in a given situation. Porter and Lawler (1974) considered JP to be a function of individual ability, skills and effort in a given situation. Other researchers added several important elements to this concept, and some considered it as an individual behavior, closely linked with organizational goals. Murphy (1989) explained that JP should be defined in terms of behavior rather than results. Borman and Motowidlo (1993) highlighted three important features of JP as follows: 1. Work performance should be defined in terms of behavior rather than results, 2. Work performance includes only those behaviors that are relevant to the organization's goals, 3. Work performance is a multidimensional concept. Viswesvaran and Ones (2000) defined JP as scalable actions, behavior and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals. Further, different authors have defined various types of JP taxonomies. A few of them are; the thirteen types of pro-social organizational behaviors (Brief and Motowidlo, 1986), both concepts of organizational citizenship behavior and pro-social behavior (Organ, 1988), eight performance components for measuring JP (Campbell et al., 1990), in-role work performance and extra-role performance (Borman and Brush, 1993), and generic work behavior and adaptive performance behavior (Hunt, 1996). Recently, Rotundo and Sackett (2002) discussed three types of

measures, including Task performance, Citizenship performance, and Counterproductive performance. Koopmans et al. (2011) proposed four theoretical dimensions as taxonomies of JP, including Task performance, Contextual performance, Adaptive performance, and Counterproductive work behavior. As far as this study is concerned, the working definition for JP is:

“Job performance is the extent to which the employee has shown his or her traits, engaged in behaviors and produced results which are appropriate to task performance, and has engaged in citizenship performance and counterproductive performance during a particular period of time.” (Ramawickrama et al., 2017a). According to this definition, the three dimensions of JP are Task performance, Citizenship performance and Counterproductive work behavior.

Quality of Work Life: Louis Davis introduced the concept “Quality of Work life” prior to 1970, and the 1st International Conference on QWL was held in Toronto in 1972. The International Council of QWL was established in 1973, and this concept of QWL is almost a half-century old. Therefore, different definitions could be found proposed by different authors. A few of them are: a set of beneficial consequences of working life for the individual, the organization and society (Boisvert, 1977), a situation in which all members of the organization, through appropriate channels of communication set up for this purpose, have some say about the design of their jobs in particular and the work environment in general (Schuler & Youngblood, 1986). In 1993, Bernadian and Russell stated that QWL is the degree to which individuals are able to satisfy their important personal needs. Paying attention to the above definitions, researchers developed a working definition for QWL which is given below:

QWL is *“the degree of availability of features for ensuring a humane working life for each employee of the organization”*. Eight dimensions of QWL were selected for this study; they are basic salary and fair compensation, work conditions, safe and healthy work environment, development of human capacity, social integration in work organization, constitutionalism in work organization, balance between work and non-work life, and social relevance of work life.

Organizational Commitment: In 1966, Grusky, as cited in Daxi and Bhati (2012), stated that OC involves the nature of the relationship of the member to the system as a whole. Kanter (1968) defines commitment as the willingness of social actors to give their energy and loyalty to social systems, the attachment of personality systems to social relations, which are seen as self-expressive. Luthans (2005) explained that OC is an attitude reflecting employees’ loyalty to their organization and is an ongoing process through which organizational participants express their concern for the organization and its continued success and well-being. Accordingly, the working definition of OC and its dimensions are presented below;

“*The degree to which the employee is loyal to the organization*” (Opatha, 2015). The three component model of OC which comprises of Continuous Commitment (CC), Affective Commitment (AC) and Normative Commitment (NC) was considered for this study (Allen & Meyer, 1997; Meyer et al., 2002).

Relationships among the Variables of JP, QWL and OC: According to the research findings, the main variable of JP has been used by many researchers as a dependent variable in their studies (Sonnentag & Frees, 2001; Beh & Rose, 2011; Dixit & Bhati, 2012; Taghavi et al., 2014; Rai, 2015; Tolentino, 2013; Hettiarachchi & Jayarathna, 2014; Muindiet al., 2015; Hafiz, 2017). Schmidt and Hunter (1992) mentioned that JP is the most important ‘dependent variable’ in industrial work and organizational psychology. However, many researchers have used the construct of QWL as the ‘independent variable’ (Beh & Rose, 2011; Gnanayudam & Dharmasiri 2008; Ganguly, 2010; Ahmadi et al., 2012; Parvanet al., 2013; Varghese & Jayan, 2013; Ojedokun, 2015; Ali & Zilli, 2015; Muindiet al. 2015; Omugo et al., 2016). The other construct, i. e. OC has been used for different purposes by different researchers. This means that many authors have used OC as an independent variable, while others have used it as a dependent variable. On the other hand, Varghese and Jayan (2013), Kim (2014) and Nayak and Sahoo (2015) have used OC as a mediating variable. The above empirical evidence that are related to different job categories from different sectors including baking, manufacturing, garment, education in different countries. Consequently, the conceptual model for this study is developed below.

Conceptual Model of the Study

A hypothetical model was developed to exhibit the network of relationships among QWL, OC and JP. General system theory provides a strong support for this framework. While human qualities and abilities are treated as inputs from the environment, employee behaviors are treated as throughputs and employee performance is treated as output. QWL may be considered as one of the input resources. QWL helps build a proper balance between work and personal life, and ensures organizational productivity and job satisfaction. As a result, QWL practices in an organization may create attitudinal changes in employees’ minds. The attitudinal variable, i.e. OC, predicts and may lead to organizational citizenship behavior. This means that committed employees volunteer for extra job activities, like helping coworkers and making positive comments about the company (Organ & Ryan, 1995 as cited in Luthans, 2005). Thus, the three main variables of this study were positioned in Figure 1, i.e. QWL as the predictor

(independent) variable, JP as the outcome (dependent) variable and OC as the mediating variable.

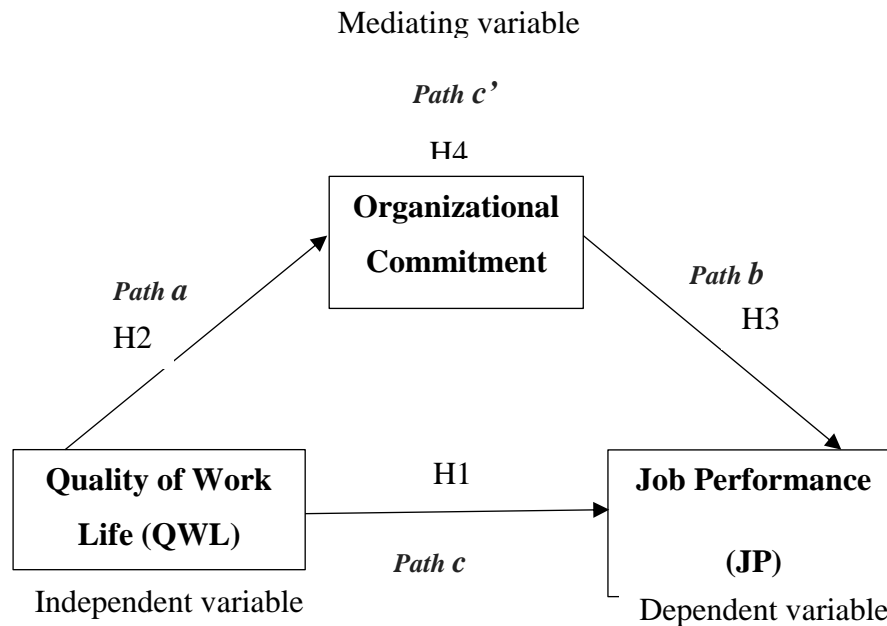


Figure 1: Conceptual Model of the Study

Hypotheses Development:Based on the theoretical and empirical evidence in the existing literature and the logical arguments of the authors, four hypotheses (H1 to H4) were developed through a deductive approach to test the relationships among variables in the conceptual model.

Quality of Work Life and Job Performance:Kim et al. (1999) noted that a safe and secure workplace is instrumental and makes a positive contribution to employees' work performance. Nayakand Sahoo(2015) state that employees with high QWL tend to have lower job stress, while poor QWL can lead to stressful working conditions as well as negative health outcomes. Beh and Rose (2011) observed the positive relationship between QWL and employee JP at different levels, including individual, group and organizational levels. Gayathri et al. (2013) emphasized the linkages among QWL, job satisfaction and performance. The significant relationship between the overall QWL and organizational citizenship behavior was reviewed by Nair in 2013. Hence, it is hypothesized that:

H1: "Quality of work life has a significant positive relationship to job performance".

Quality of Work Life and Organizational Commitment:Louis (1998) found that QWL is strongly associated with both the dependent variables of commitment and sense of efficacy. Normala (2010) proved that there is a strong relationship and cohesiveness among employees

in the workplace, which will improve with the sense of commitment of employees. Ahmadi et al. (2012) confirmed that QWL helps to build a higher level of OC. Parvan et al. (2013) and Omugo, et al. (2016) found a positive and significant impact of QWL on OC among employees. Hence, QWL provides a favorable support for better OC. Based on the facts supporting the positive impact of QWL on OC, the second hypothesis is posited below:

H2: *“There is a positive and significant relationship between the quality of work life and organizational commitment”*.

Organizational Commitment and Job Performance: As a consequence of the psychological contract of employees discussed in the systems perspective, OC may occur and employees may try to bind to the organization affectively, normatively and continuously. Further, expectancy theory shows that employees’ efforts may result in better performance and rewards. Other motivational theories also highlight a positive interrelationship between OC and JP. One of the studies conducted by McShane et al. (2008) revealed that “employees with high affective commitment also have higher work motivation and organizational citizenship behavior, as well as higher JP.” Further, OC is related to higher QWL, lower rate of absenteeism, and increased productivity (Nelson & Quick, 1997). Uthayakumar and Opatha (2003) found that OC is a strong predictor of JP. Dimensions of OC significantly correlate with the key determinants of organizational citizenship behavior (Rehan& Islam, 2013). In the same year, Tolentino observed the relationship between OC and JP and revealed that OC significantly correlates with the key determinants of organizational citizenship behavior. There is a significant impact of employee-related work attitudes on the JP of employees (Hettiarachchi&Jayarathna, 2014). With reference to this situation, Daxit and Bhati (2012) also clarified that committed employees may perform better than less committed ones. Accordingly, the third hypothesis is formulated as:

H3: *“Organizational commitment is positively and significantly related to job performance”*.

Mediating effect of Organizational Commitment on the relationship between Quality of Work Life and Job Performance: It is logically arrived at that QWL affects JP positively through OC. Thus, QWL is called the independent variable while JP is labeled as the dependent variable. OC is labeled as the intervening variable. In other words, QWL, JP and OC are labeled as predictor, outcome and mediating variable, respectively. OC surfaces between the time QWL operates to influence JP and its impact on JP. Therefore, OC has a temporal quality and

it works as a function of QWL and helps to explain the influence of QWL on the variability of JP. Thus, the fourth hypothesis of this study is posited as follows:

H4: *“Organizational commitment has a significant mediating effect on the relationship between quality of work life and job performance”*.

Methodology

Research Design: A quantitative study was conducted to achieve the expected objectives, and the main focus of the study was explaining the QWL that contributed to the JP of railway workers in SL through OC. The sample frame is considered based on the target population. The sample begins with precisely defining the target population (Sekaran&Bougie, 2013). Hence, the target population might be all the SMs in the railway department throughout the country. That is, the entire group of people to whom the researcher wishes to generalize the study findings. It was also considered as the accessible population of this study. Thus, without any limitation, 1003 of SMs who are attached to the SLR were included in the population. 280 SMs were selected by a stratified sampling technique based on Krejcie and Morgan in 1970. There are three main strata including Grade I, Grade II and Grade III members who are working in different stations among the seven train lines in SLR. Hence, the stratified sampling technique helped to estimate the population parameters among the above identifiable sub-groups. Survey questionnaires were administered among the respondents who work in SLR. The majority of the sample was Sinhalese and the minority was Muslims and Tamils. Initially the questionnaire was developed in English and translated it to Sinhala. English language questionnaires were administered among the Muslims and Tamils. The techniques of data analysis of this study involved univariate, bivariate, and multivariate analysis using the application of SPSS (Version 22). The proposed hypotheses were tested using Pearson correlation, regression analysis and multiple regression analysis

Instruments and Measures: The three variables in the conceptual model, i.e. JP, QWL and OC were measured using the multi-item interval scales, and validated prior to final data collection. The variables were carefully conceptualized and operationalized based on previous literature/ theories, in order to develop the individual measurement instruments. A summary of the number of dimensions, elements and evidence for references are given in Exhibit 1. These elements were used to develop question items in order to capture primary data from participants. The responses were captured on a 5-point Likert scale, with scores ranging from 1 to 5 - strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4) and strongly

agree (5), respectively. twelve questions were related to the demographic profile of respondents. Ninety questions were itemized, together with an open ended question for respondents' feelings, suggestions and comments related to the main variables. Pilot study was conducted by the researcher administering questionnaires among 30 respondents. The result of the internal consistency was considered. The test-retest reliability test was conducted after three weeks. This test was conducted for randomly selected 15 respondents who participated in the pilot study to attest the stability of the measures.

Exhibit 1: Dimensions used for the main variables and the number of question items

Dimensions used for main variables	Reference
<i>Job Performance: 46 of Question Items</i>	
<i>Task Performance</i>	
- Task performance-result based	
- Task performance-behavior based	Murphy (1989); Borman and Motowidlo (1993); Viswesvaran and Ones (2000); Rotundo and Sackett (2002); Stokes (2008); Stewart and Brown (2009); Koopman, et al. (2011); Safety Rules of Railways (SRR
- Task performance-trait based	
<i>Counterproductive performance</i>	
- Organizational level citizenship behavior	
- Interpersonal citizenship behavior	
<i>Counterproductive performance</i>	
- Production related deviant behavior	
- Property related deviant actions	
- Political deviant actions	
- Personal aggression	
Quality of Work Life: 31 Question Items	
QWL 1- Basic salary and fair compensation	

QWL 2- Work conditions	Walton,1975; Saklani, 1979:
QWL 3- Safe and healthy work environment	Hosseini, 2010; Stephen and
QWL 4- Development of human capacity	Dhanapala, 2012; Tabassum, 2012
QWL 5- Social integration in work organization	and Mirvis and Lawler, 1984
QWL 6- Constitutionalism in work organization	
QWL 7- Balance between work and non-work life	
QWL 8- Social relevance of work life	

Organizational Commitment; 12 Question Items

CC- Continuous Commitment	Allen & Meyer, 1996; Meyer, et al.,
AC- Affective Commitment	2002;
NC- Normative Commitment	Opatha, 2015

(Source: Literature Review)

Reliability and Validity of the Instruments:As mentioned by Sekaran and Bougie (2013), several types of validity tests were used for the goodness of fit measures. Internal consistency was considered, and Cronbach's alpha was 0.923 for the overall value of JP, was 0.879 for QWL, and 0.817 for OC. Moreover, a reliability coefficient value of above 0.7 is statistically acceptable for a study (Nunnally, 1978). The test-retest coefficient was 0.931, which is significant at the 99% confidence level. This result suggests that the instruments possess a high degree of test-retest reliability. The values of KMO were above the cut-off point of 0.5, which also indicates a good range of sample adequacy, and the values of constructs were significant as per Bartlett's test of sphericity.

Data Analysis Techniques:Four hundred questionnaires were distributed as part of the survey, of which 280 questionnaires were returned, reporting a 70% response rate. Data were coded, cleaned and treated for missing values and outliers in order to ensure the accuracy of the conclusions drawn from the study. Frequencies and descriptive analyses were conducted to

present the main characteristics of the sample. The Pearson product-moment correlation technique (one-tailed test) was used to test the first three hypotheses (H1- H3) and the fourth hypothesis was checked for the mediating effect of employee OC on the relationship between QWL and JP. Multipleregression analysis and procedures recommended by Baron and Kenny (1986) were used to test the mediatingeffect of Hypothesis Four.

Results

Demographic Description of the Sample: The uniqueness of this sample was its homogeneity. This is because the majority of railway employees were males who have represented all stations in SL. 200 respondents out of the 280 had experienced more than 5 years of service and they had worked at more than 4 stations during their service period. While the majority of the respondents (236) were in the 25-55 age category, 24 of the respondents were over 56 years. Further, this sample represented all three major ethnic groups, comprising of Sinhalese, Tamils and Muslims.

Hypotheses Testing:The Pearson product-moment correlation technique was used to test the direct relationships of the conceptual model i.e. hypotheses 1, 2and 3 in Tables 1 to 3.

H1: QWL has a significant positive relationship with JP

Table 1Correlation between QWL and JP

	Total QWL	Total JP
Pearson Correlation	1	.704**
Total QWL Sig. (2-tailed)		.000
N	280	280

** . Correlation is significant at the 0.01 level (2-tailed).

(Source: Survey Data, 2018)

Table 1givesa correlation coefficient value of 0.704, ** significant at the 99% confidence level. This result substantiates the existence of a strong positive and significant relationship between the variables. Hence, the null hypothesis is rejected and the alternative hypothesis accepted.

H2:There is a positive and significant relationship between QWL and OC.

Table 2 Relationship between QWL and OC

		Total QWL	Total OC
	Pearson Correlation	1	.731 ^{**}
Total QWL	Sig. (2-tailed)		.000
	N	280	280

^{**}. Correlation is significant at the 0.01 level (2-tailed).

(Source: Survey Data, 2018)

The result of the Pearson product-moment correlation in Table 2 indicates a significant relationship ($P < 0.01$) that is positive, strong and linear ($r = 0.731$). The statistical results justified the fact that a strong positive and significant relationship exists between QWL and OC. Hence, while rejecting the null hypothesis, the alternative hypothesis is formulated for this study.

Table 3 Relationship between OC and JP

		Total OC	Total JP
	Pearson Correlation	1	.835 ^{**}
Total OC	Sig. (2-tailed)		.000
	N	281	280

^{**}. Correlation is significant at the 0.01 level (2-tailed).

(Source: Survey Data, 2018)

The result of the Pearson product-moment correlation technique in Table 3 indicated a correlation coefficient value of 0.835^{**} (Sig. at 0.01) for the relationship between OC and JP. Thus, the statistical results substantiated the existence of a positive and significant relationship between OC and JP at the 99% confidence level. Thus, hypothesis three was statistically established while the null hypothesis was rejected.

H4: OC has a significant mediating effect on the relationship between QWL and JP.

Baron and Kenny (1986), and Frazier et al., (2004) proposed four steps to be performed when testing this relationship. They are:

Step 1- to show that the predictor variable (QWL) is significantly related to the outcome variable (JP): *path c*

Step 2- to show that the predictor variable (QWL) is significantly related to the mediator variable (OC): *path a*

Step 3- to show that the mediator variable (OC) is significantly related to the outcome variable (JP): *path b*

Step 4- to show that the strength of the relationship between the predictor and the outcome is significantly reduced when the mediator is added to the model: comparing path C with *c'*.

The statistical results of the above four steps are presented in Table 4.

Table 4: Testing Mediating Effect of OC on the Relationship between QWL and JP.

Tested steps	B	Sig	R Square
Step 1 : <i>path c</i>			
Outcome (JP), Predictor (QWL)	1.115	0.000	0.495
Step 2 : <i>path a</i>			
Mediator (OC), Predictor (QWL)	0.380	0.000	0.534
Step 3 : <i>path b</i>			
Outcome (JP), Mediator (OC)	2.545	0.000	0.697
Step 4 : Path c'			
Outcome (JP), Mediator (OC) Predictor (QWL)	0.318	0.000	0.715

(Source: Survey Data, 2018)

According to Table 4, the unstandardized regression coefficient value (B=1.115) associated with the relationship between QWL and JP (*path c*) was significant ($P < 0.01$). Thus, the requirement for mediation in step-1 was met. Regression of QWL on OC (*path a*) was performed in order to establish that the predictor is significantly related to the mediator (Step-2). The regression coefficient (0.380) associated with this relation was also significant at the $P < 0.01$ level, and thus the requirement for mediation in step 2 was met. The requirement of step-3, the relationship between JP and OC (*path b*) was also met, i.e. the coefficient value was 2.545 at the significance level of $P < 0.01$. The path *c* of this model was measured simultaneously, while controlling the mediator (OC) in step 4. According to Frazier et al., (2004), when 'Path *c*' is zero, there is a complete mediation, while otherwise, a partial mediation exists. Here, path *c'* was 0.318 and this is still significant ($P < 0.01$). As this value was smaller than the value of Step 1 (which was 1.115), there is said to exist a partial mediation. Further, the R Square value of 0.715 is indicated in Step-4 of 'Path *c*'. It is higher than in the other steps. Thus, it reveals that as an intervening variable, OC enhances the relationship between QWL and JP by 71.5%. Therefore, the fourth hypothesis is accepted while the null

hypothesis is rejected. It is possible to claim that OC is a significant and partial mediator of the relationship between QWL and JP of SMs inSLR. Four hypotheses were accepted in the conceptual model illustrated in Figure 1, supporting the conceptual model of this study empirically.

Discussion and Conclusion

This study developed an original conceptual model for measuring the mediating effect of OC on the relationship between QWL and JP among SMs who work inSLR. Four hypotheses were developed, addressing four specific research questions leading to the accomplishment of four specific research objectives.

This objective was achieved through H1 (Table 1). The statistical results showed that QWL is strongly and significantly related to the JP of SMs who work in SLR. The findingfor this second objective is that there is a positive, significant relationship between QWL and OC (Table 2) and the strength of the relationship is “high”. This predicts that when SMs have high QWL their OC will be high (when other things remain constant).Thefinding of the third objective showed that OC is positively and significantly related to JP and that the strength of the relationship is “high”. This high strength of the relationship shows that the more SMs are committed to the organization,the higher their JP is going to be. The statistical results of the mediation analysisof the objective four in Table 4 revealed that OC significantly and partially mediated the relationship between QWL and JP.

Accordingly, this study emphasized the positive relationship between QWL and JP among the SMs in SLR. Many research findings have concluded that QWL positively influences on JP. None of them has presented any opposite idea in relation to QWL and JP. Each and every finding showed a positive relationship between both variables. Beh and Rose (2007) studied the relationship between QWL and JP and generalized that any culture depends on the performance of its employees.

As a result of the global findings, railway employees agree with the existing QWL practices provided to them, and they perceive well the existing working condition and work environment (Hosmani et al., 2014; Mazloumi et al., 2014) but in the Sri Lankan context it seems to have an inconsistent to a certain extent. Though the employees have favorable feelings towards QWL they have given lower priority for constitutionalism, working conditions, opportunity for development of human capacity and safe and healthy work environment. Further, this situation is highlighted through the local literature as below. Halpita et al. (2011) conducted a study regarding the Sri Lankan context of Railway and suggested that the manual system is

inappropriate for the modern situation and creates numerous problems for workers and passengers and they mentioned that work related environment should be changed with advanced technology. Kesavan et al. (2011) found that employees have their own grievances related to the work and work related facilities faced by the employees in Sri Lanka context. However, no one has found the mediating effect of OC on the relationship between QWL and JP. Hence, this study is unique for findings related to employees who work in SLR and emphasized that OC mediated the relationship between QWL and JP.

Originality and Contribution to the Existing Literature:

A detailed discussion of QWL, OC and JP uncovers the fact that all concepts are employee related, and are essential for the achievement of goals of a particular organization. The researchers cleared conceptual confusion by means of an extensive literature review (Ramawickrama et al., 2017a and 2017b), and clearly and separately presented working definitions, importance, dimensions and question items of the three constructs. Moreover, the questionnaire was validated appropriately. The conceptual model (Figure 1) is also an original model that has contributed theoretically as well as empirically to the existing literature.

Managerial implications: The results revealed innovative, vital managerial implications related to the impact of the existing QWL practices on JP of SMs working in SLR. Findings of this study highlighted the fact that the existing QWL practices play a vital role in JP and that QWL significantly relates to OC. OC significantly and positively relates to JP as well. Hence, these direct relationships are enhanced further due to the mediating effect of OC. In order to enhance job performance of SMs in SLR, it is vital that QWL is enhanced by the relevant responsible top managers. According to the descriptive statistics, current SMs seem to have become dissatisfied with certain aspects of their QWL, and without addressing those aspects it will not be possible to enhance the OC of SMs and consequently, their JP. Therefore, the OC must be enhanced through the enhancement of the existing QWL practices of the Railway; that is, it should be modernized for the satisfaction of both internal and external customers who now live in a dynamic environment. More specifically, SMs are not satisfied with their existing salaries, work conditions and work environment, archaic rules and regulations and insufficient career development opportunities. Therefore, the existing human resource management practices should be modified and enriched with current, dynamic practices.

Limitations and Directions for Further Research: This study was limited to the railway sector in Sri Lanka, specifically to SMs who are multi task handlers. The study sample was homogenous, being restricted to males. Hence, other studies are needed in relation to QWL and JP in different settings without gender bias, in a variety of industries, in different organizational settings in other countries, in alternative economic systems and in different time periods of an organizational life cycle. Further, Likert type scaling was included throughout the questionnaire, except in the demographic factors. The study respondents were contacted at only one time (cross sectional), and therefore the research was not conducted as a longitudinal study. Since the research was a behavioral study, a longitudinal research design would have been more appropriate. Therefore, the researcher suggests further studies to be done employing the qualitative method and the mixed method in sectors other than the one used in this study.

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Spiritual marketing and its influence on consumer purchase intentions of XYZ Company, UAE

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Abstract

Purpose - The purpose of this research was to identify and explore the concept of spiritual marketing and its influence on consumer purchase intentions of XYZ Company, UAE. In order to conduct the research a high end retail clothing store in UAE was selected. The clothing store has been experiencing significant losses in sales even though it has increasing investments in traditional brand management strategies. Traditional brand management practices focus on capturing the consumers' minds and hearts and not their spirits. Therefore, due to limited focus of spiritual marketing at the company, and the emerging importance of this discipline in marketing, this study explored the influence of spiritual marketing on consumer purchase intentions of XYZ Company.

Design/methodology/approach – The research was based on the quantitative research technique. The population of the study was customers of the selected retail outlet and the sample size was 266. The sampling method used by the researcher was convenience sampling. Primary data was collected by means of questionnaires and was analysed by the use of SPSS software.

Findings - Findings of the study revealed that there is a strong positive relationship between spiritual marketing and consumer purchase intentions. Further findings indicated that trust, creativity, social sustainability practices and environmental sustainability practices have a moderate positive relationship with consumer purchase intentions.

Research limitations/implications – There are more factors that influence spiritual marketing. These have to be explored. Furthermore, to investigate if national cultures have an influence on how spiritual marketing is perceived.

Practical implications – Marketing has evolved into a stage where capturing of the consumer's mind through brand positioning and capturing of a consumer's heart by emotional marketing are not sufficient. Marketers have to now capture the spirits of consumers through spiritual marketing. Therefore, organisations have to make changes to their marketing strategies to capture the spirits of consumers.

Originality/value Academic community: Less research have being conducted in spiritual marketing. Results of this thesis would help fill-in gaps in literature.

Article Type: Case Study

Key Words: Spiritual marketing, consumer purchase intentions, trust, creativity, social sustainability, environmental sustainability

INTRODUCTION

Organisations operating in today's business environment are affected by many forces due to the changes occurring in micro and macro environments. In the past, though organisations were affected by these changing environments, the impact these forces made were far less different compared to today's impacts. The extent of globalization is high in the recent years, and the influence of globalization on these micro and macro environmental forces cannot be underestimated. For survival and continuous growth, organisations have to monitor these changes in business environments and the effects they make on marketing operations as well as consumers.

Consumers in this era are heavily exposed to mass media and social media, which have also become a trend. Developments in social media tools such as Facebook, Twitter, LinkedIn and YouTube have changed the way in which consumers think and interpret marketing messages through the use of their emotions, moods, perceptions, wants and demands. According to Mirabi, Akbariyeh and Tahmasebifard (2015) companies spend billions of dollars to identify psychological bases and psychographics behind consumer purchase intentions. In other words, to gain a better insight of consumer buyer behaviour.

According to Hoffman et al. (2003, p. 139) the desire showed buy a customer to invest in a particular product or service is defined as the purchase intention. These purchase intentions depend on various factors. Perceived value is one of these variables. Perceived value depends on the benefits expected from the product and costs incurred in obtaining the product. In line with this definition, Gbadamosi (2016, p. 385) explains that purchase intention is a key pillar in the consumer buying process. It helps to determine actions of consumers in a particular situation such as purchase of luxury clothing products. In alignment with these definitions, Morwitz (2014) describes that marketing managers frequently analyze their consumers' purchase intentions in order to forecast future sales and in their marketing strategy building.

Consequently, among many factors that affect consumer purchase intentions, an organisation's approach to spiritual marketing can be one of the key factors that stimulate purchase intentions in the modern marketing environment. In the evolution of marketing, marketers initially focused on production orientation era where companies manufactured products that were convenient for them and focused on many selling efforts. They did not pay attention to customer needs and wants. Focus on consumer purchase intentions was minimal. Next, in the consumer oriented era, organisations exerted much effort in trying to understand consumer

purchase intentions via their motivations, emotions, lifestyles etc. As explained by Kotler, Kartajaya and Setiawan (2010) this era of marketing was appealing to the consumer's emotions or the heart.

However, modern marketers should now focus on an era where they are appealing to a consumer's spirit. Marketers should not see their efforts as just trying to sell products, however, they have to view their consumers as full persons with anxieties and concerns. Organisations have to reinforce to their consumers that they share the same anxieties and concerns and understand them. Consumers care about companies that care about these anxieties and concerns (Kotler, Kartajaya and Setiawan, 2010). This approach to marketing appeals to the human spirit or spiritual marketing (Kotler, Kartajaya and Setiawan, 2010, p.21).

Having minimal efforts towards spiritual marketing can significantly affect consumer's purchase intentions. These minimal efforts in spiritual marketing can have adverse effects on a company's or brand's image. If a marketer fails to communicate with a consumer's spirit, the manner in which a consumer interpret a brand or company image can be negative. In modern times, due to developments in social media, the way in which consumers think and interpret marketing messages through the use of their emotions, moods, perceptions, wants and demands are quite different. Organisations have to accept that these differences in consumer behaviour do have a great impact on consumer purchase intentions (Kotler, 2015).

Social media tools such as Facebook, Twitter, LinkedIn and YouTube had become main modes of communication for individuals. Consumers throughout the world are all interconnected with these social media tools. This trend had created a "*story telling*" culture among all these consumers connected via social media (Kotler, 2015). Consequently, this trend has greatly impacted on the way in which consumers make decisions on the products they wish to purchase. Today's companies are in a fishbowl; consumers are constantly monitoring actions of organisations and any positive or negative action of a company is appreciated or criticized respectively and social media tools make it easier to spread the word, thus creating a story telling culture (Kotler, 2015).

Building trust among consumers, tapping into the creative side of an individual and social and environmental sustainability help organisations to engage in spiritual marketing (Kotler, Kartajaya and Setiawan, 2010). When companies do not evolve into spiritual marketing and neglect to be a company that speaks to the human spirit (Kotler, Kartajaya and Setiawan, 2010, p. 34) maintaining a competitive edge can be difficult. As described above, due to the

story telling culture in social media as well as due to intense competitive rivalry, consumers are exposed to much information on brands and left with a lot of product/service options respectively. In a marketing environment such as this, competition is tedious and marketers should be able to outperform its competitors. Further, the ever changing life styles, motivations and perceptions of consumers have impacted their purchase intentions; consumers' expectations have changed.

Therefore, greater emphasis should be placed on understanding factors that result in spiritual marketing. By this, marketers would be able to better tap into consumer purchase intentions. Thus, the importance of spiritual marketing for an organization cannot be underestimated and this research is designed to understand the relationship between spiritual marketing and consumer purchase intentions of XYZ Company.

Justification of the Study

XYZ Company is a popular retail clothing store in Dubai, UAE that features premium branded toddler and children's clothing wear, shoes, gifts and accessories to a luxurious niche market. The company has been going through major financial setbacks in the recent past. The company's financial records show that the overall sales and profits are declining and the management finds it difficult to understand consumers purchase intentions due to trends in fluctuation of its sales and profits.

Based on Figure. 1 it can be observed that the sales and profits are fluctuating from time to time. For example, from May to June there is an increase in sales and profits, however, in July there is a sharp decline in both in sales and profits which are AED 160,596.75 (sales) and AED 81,759.36 (profits) respectively. Thereby, fluctuation in sales and profits can be observed. These losses in sales and profits, as well as, fluctuation in sales and profits, brings about questions relating to purchase intentions among consumers of XYZ Company.

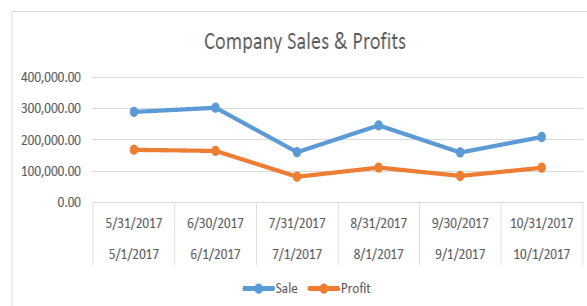


Figure 1: Company sales and profits

Source: Author developed (2017) based on XYZ Company (2017)

Problem Identification and Justification

The company's fluctuation in sales/profits reveal that it hasn't a clear understanding of consumer purchase intentions. Not knowing what factors trigger consumer purchases, it will be difficult for XYZ Company to gain a positive response from its consumers. This can reduce repurchase rates and customer loyalty. These negative effects will result in low sales and profits. Since, the company is catering to a high income niche customer base, it is important to understand their motivations, life styles, values etc. that trigger their purchase intentions.

After a preliminary investigation into the company's current situation, the researcher identified that the company's focus on brand management strategies were less intense. The company do practice various types of promotional methods as part of their branding. Newsletters, SMS marketing, sales festivals and digital marketing are among its promotional methods. These promotions are more focused on brand positioning (consumer's mind) and emotional marketing (consumer's heart) and less on spiritual marketing (consumer's spirit). Spiritual marketing is an emerging area in the field of brand management and brand building. According to Kotler, Kartajaya and Setiawan (2010) spiritual marketing is more of character building. Traditional brand management practices focuses on capturing the consumer's minds and hearts. However, according to Kotler, Kartajaya and Setiawan (2010) marketers should now focus more on the spirit of a consumer; this is the soul and philosophical center, of an individual.

Traditional brand management practices focus on the consumer's mind; which is capable of independent thought and analysis and the consumer's heart; capable of feeling emotions. Focus on traditional brand management practices is not sufficient to be competitive anymore (Kotler, Kartajaya and Setiawan, 2010). Therefore, companies should not only focus on the mind and heart of a consumer but also on the spirit of a consumer. This approach is known as spiritual marketing. As explained previously, XYZ Company's brand management strategies seem less intense and further, seems very traditional. Its focus on spiritual marketing appears to be less. Thereby, due to the emerging importance of spiritual marketing and less attention given by the company on the practice of spiritual marketing, the researcher is interested to explore if spiritual marketing practices of XYZ Company has an influence on its consumer purchase intentions.

Research Question

The main research question of this study is:

What is the influence of spiritual marketing on consumer purchase intentions of XYZ Company?

Objectives of the Study

General Objective:

To examine the influence of spiritual marketing on consumer purchase intentions of XYZ Company

Specific Objectives:

1. To examine and determine factors that contribute to spiritual marketing.
2. To investigate and understand the relationship between factors of spiritual marketing and consumer purchase intentions at XYZ Company.
3. To formulate conclusions and make recommendations to XYZ Company on spiritual marketing and its impact on consumer purchase intentions.

LITERATURE REVIEW

Spiritual Marketing

Changes in the business environment such as globalization, recession, consumer empowerment, climate concerns, new social media and new wave technologies have created a massive shift in marketing practices (Friedman, 2005). These changes have created a new value driven era in marketing called spiritual marketing. Spiritual marketing is defined as a value-driven marketing concept that focuses not only on a consumer's mind and heart, but also on the consumer's spirit (Kotler, Kartajaya and Setiawan, 2010). The intention is to address the whole human being, consisting of body, mind, heart and soul and thereby shift from the traditional marketing to an approach of value-driven marketing (Brecht et al, 2011, p.23). It is noteworthy to understand that Kotler, Kartajaya and Setiawan (2010) use the term human spirit marketing to refer to their concept of spiritual marketing.

A clear characterization may be needed to understand the distinction among the terms mind, heart and spirit. The human mind is capable of independent thought and analysis and the heart is capable of feeling emotions. However, the spirit of a person is one's soul and the philosophical center. This philosophical center seeks for true meaning or purpose of life as a whole, happiness and spiritual realization (Kotler, Kartajaya and Setiawan, 2010). Thereby,

satisfaction of spiritual needs takes precedence over material wants. Consumers seek for companies that can give more than what money can buy.

Increasingly, consumers are becoming more conscious about companies that offer solutions to their deepest anxieties about making the world a better place through a company's vision, mission and values; these anxieties reflect one's philosophical center. Cameron (1992) defines spirituality as the appreciation of non-material aspects of the human life and thereby understanding the true meaning or purpose of life as a whole. Further, spirituality looks for its significance in creative society and tries to pursue self-actualization and self-transcendence as described by Abraham Maslow (Kotler, Kartajaya and Setiawan, 2010, p. 19). Self-actualization is the need to make the best out of one's potential and self-transcendence is the need to focus on one another than one's self. Altruism or philanthropy and spiritual awakening are examples of self-transcendence.

Spiritual marketing has a direct contrast with product centric era and consumer oriented era. The product centric era, focused only on selling factory output products to consumers whoever wanted them. This marketing approach was a success for companies like Ford due to less globalization and less competition in the market (Friedman, 2005). Then, afterwards with advancements in technology and increasing competition, companies focused on consumer oriented marketing where they tried to segment and target the right customer base (Cundari, 2015). Marketers understood that all consumers did not prefer the same product, as in Ford's model T cars which were mass produced and sold only in the colour black, but wanted products that suited their own tastes. Due this change in consumer behaviour, marketers understood that markets are heterogeneous in nature and thereby had to be segmented and appropriately targeted. With developments in data bases, companies increasingly used them to store customer information so that purchase patterns can be understood and the right consumer category could be targeted. Further, in this era of marketing, products and promotional activities were created to tap into the consumer emotions as opposed to solely focusing only on product positioning as in product centric era (Kotler, Kartajaya and Setiawan, 2010).

As pointed out by Kotler, the main weakness of this consumer oriented era of marketing is that companies view consumers as mere targets of their promotional campaigns. Marketers assume that better the promotional campaigns the more the customers would be convinced to buy their products (Pralhad and Ramaswamy, 2004). These marketers fail to understand that consumers are human-beings with a mind, heart and spirit. Product positioning and emotional appeals only

would touch consumers' minds and hearts but not their spirits (Kotler, Kartajaya and Setiawan, 2010). Therefore, in order to touch the consumers' spirits and also in the attempt of viewing them as whole human beings, Kotler, Kartajaya and Setiawan (2010) introduced this new value driven and brand management practice called spiritual marketing or human spirit marketing.

Thereby, in view of literature suggested by Kotler, Kartajaya and Setiawan (2010), four key factors of spiritual marketing have been taken into consideration in this research. They are, building of trust in the consumer, focusing on creativity, being socially conscious and environmentally conscious in all practices of an organization.

Trust: Kotler, Kartajaya and Setiawan (2010, p.35-37) explain that in order to touch the spirits of consumers or to engage in spiritual marketing, trust should be built. The authors have proposed a model known as "the 3i model" (Figure.2) that can be used in building the trust. Due to the emergence in horizontal trust relationships a marketer's task should not be only to focus on product positioning. This model pays attention to brand identity, brand integrity and brand image. The intention is to address the whole human being, consisting of body, mind, heart and soul in which horizontal communication and values like honesty, originality and authenticity are important (Brecht et al, 2011, p.23).

Differentiation that is in line with positioning of a product will automatically create a good brand image (Figure. 2). However, for a product to achieve brand integrity, it should be able to fulfil whatever is claimed through positioning and differentiation. Thus, brand integrity will build credibility and fulfil marketer's promises made to customers and thereby establishing consumers' trust in the brand. Therefore, the objective of brand integrity is to capture the spirit of the consumer through 'trust' (Kotler, Kartajaya and Setiawan, 2010).



Figure 2: 3i model

Source: Kotler, Kartajaya and Setiawan (2010, p.36)

If organisations need to touch the hearts of the consumers, they have to aim at the minds and spirits of the consumers simultaneously. Positioning will capture the consumer's mind that will make him to consider purchasing the products. However, a brand requires authentic differentiation (Kotler, Kartajaya and Setiawan, 2010, p.36) for the human spirit to confirm the decision. This authentic differentiation can be accomplished by building trust in the spirits of consumers. Then only, the heart will make the consumer to go ahead and purchase the product. These perspectives proposed by Kotler, Kartajaya and Setiawan are important aspects in understanding consumer behavior.

Creativity: Kotler, Kartajaya and Setiawan (2010, p.20) suggest that creativity in marketing practices touches the spirit of an individual and should be the focus of spiritual marketing. An individual finds all these aspects of spirituality through creativity. Creativity expresses itself in humanity, morality and spirituality. The authors note that the need for spirituality is the greatest motivator of humanity. Such creativity help brands provide life transforming experiences. As illustrated in Figure. 3, the rise in creative society had created a high inclination towards creativity. This creativity has become part of spiritual marketing or targeting of the spirit (Kotler, Kartajaya and Setiawan, 2010).

Andrew and Smith (1996) define creative strategy as the extent to which a company executes and practices new and meaningful marketing practices in a product category. Moreover, Reinartz and Saffert (2013) define creativity as the capability of a company to offer uncommon and unique solutions to a problem. Cameron (1992) state that spirituality and creativity are related to one another like in the mind of an artist. Further, according to Zohar (1990) creativity is expressed through the spirit of an individual. Zukav (2002) observed that spirituality is becoming the prime motivator for people. Gross (2012, cited in Hurman, 2016) states that a creative message should be intrigue, decisive, exactitude and accordant. The authors define intrigue as the ability of an advertisement to capture the attention of the target consumers. Such advertisements should be able to push it-self through the advertisement clutter. Next, decisiveness is defined as the ability of an advertisement to create deeper levels of emotions and thoughts. Such advertisements would have an impact on an individual's memory. Thirdly, exactitude is interpreted by the authors as a message being convincing and being able to easily understand. Finally, accordant is defined as the advertisement being consistent with other marketing communications of the company. This feature is especially important in integrated marketing communications strategy (IMC).

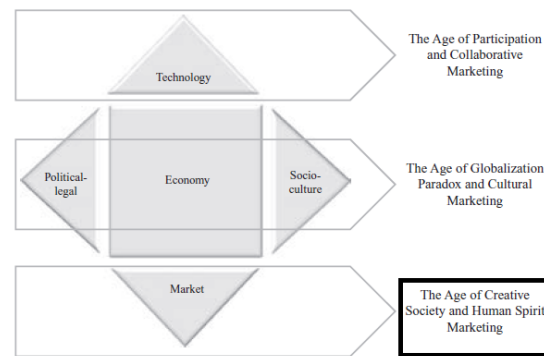


Figure 3: Collaborative, cultural, and spiritual marketing approaches

Source: Kotler, Kartajaya and Setiawan (2010, p.21)

Social Sustainability Practices: The Values Based Matrix model (VBM) in Figure 4 highlights the manner in which the spirit of an individual can be captured for spiritual marketing. Kotler, Kartajaya and Setiawan (2010) suggest that sustainability practices (social and environmental sustainability) of a company should be embedded into the mission, vision and values of it. These three components; mission, vision and values, that give special emphasis on sustainability should be regarded as the company's DNA. Therefore, all actions of such an organization would be an exact reflection of these three components.

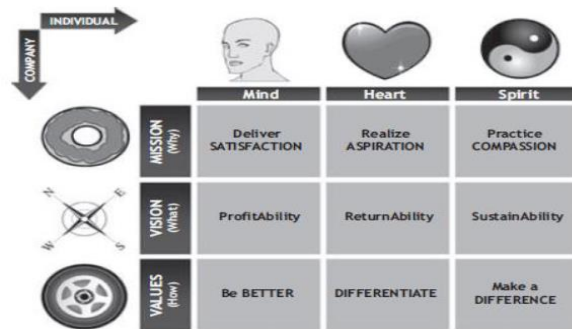


Figure 4: Values Based Matrix model (VBM)

Source: Kotler, Kartajaya and Setiawan (2010, p.42)

As explained by the authors, the mission of a company should practice compassion towards the consumers, community and environment and thereby, the vision or the long term aspirations of a company should focus on both social sustainability and environmental sustainability. The values or standards of behaviour adopted by a company should be able to make a difference in communities and planet. As stated by Brecht et al (2011) social sustainability can be achieved by cause related marketing (CRM). As defined by Nejati (2014) companies that practice CRM make donations to a specific cause. Varadarajan and Menon (1988) explain that CRM is a strategy where an organization addresses social issues by fund-raising programs. Further, Sirgy

and Lee (1996) explain that social sustainability can also be practiced using societal marketing and enlightened marketing. Enlightened marketing is a concept where marketing strategies of an organization are always consumer-oriented and beneficial to the society. This definition is further supported by the author by suggesting similarities between enlightened marketing and quality of life (QCL) in marketing.

The focus of both these marketing approaches are to enhance the wellbeing of customers and communities. Moreover, Kotler (1977, cited in Sirgy and Lee, 1996) state that societal marketing is a concept of social sustainability that tries to maintain a fit among consumer satisfaction, human wellbeing and profits. Thereby, it can be concluded that cause related marketing, societal marketing and enlightened marketing are essential practices of social sustainability.

A survey conducted by Varadarajan and Menon (1988) reveals that 78% of respondents were willing to buy products from organizations engaged in CRM and 54% showed their preference towards organizations that engaged in a CRM activities that they cared about. A CRM strategy needs to project effectiveness, importance, proximity and relevance between the cause and brand. The CRM practice implemented by an organization should be one with importance to the consumer; that adds value to human life (target market), and the consumers should see that the cause is something that they personally care about. Finally, it is important to understand that consumers are more sensitive to local causes that directly impact their community (Nejati, 2014).

Environmental Sustainability Practices: Kotler, Kartajaya and Setiawan (2010, p.153) suggest that environmental sustainability (green marketing) is another way in which an organization can capture the spirit of a consumer. The authors argue that through sustainability an organization can practice compassion and make a difference. However, the practice of environmental sustainability is not a mere implementation of a corporate philanthropic activity or a corporate social sustainability program. Sustainability should be a part of an organization's vision, mission and values. The main purpose of existence for a company should be to make a difference; to protect the environment. Thereby, financial results should come second (Kotler, Kartajaya and Setiawan, 2010, p. 58).

Peattie (1995, p. 28) defines green marketing as the managerial approach that identifies and satisfies consumers and society in both a profitable and sustainable way. Further, Coddington (1993, p.1) describes green marketing as an effort made by organizations to protect the environment while recognizing it as a responsibility as well as a growth opportunity. Consequently, both definitions converge to the concept of environmental sustainability, which is defined as a management approach that aims to protect the environment while making profits for the company (Maheshwari, 2014). However, it is important to understand that when organizations aim towards spiritual marketing, environmental sustainability should be embedded into the vision, mission and values of the organization and should not be a mere effort or practice towards sustainability (Kotler, Kartajaya and Setiawan, 2010). As illustrated in figure 5 the key focus of the organization, S.C Johnson is to deliver social and environmental sustainability through the mission, vision and values. These sustainability practices of doing what is right for the society as well as for the environment had helped the company to engage in spiritual marketing or capturing of a consumer’s spirit.

	Mind	Heart	Spirit
Mission <i>Contributing to the community well-being as well as sustaining and protecting the environment</i>	<i>Household and Consumer Product Lines</i>	<i>Promoting reusable shopping bags</i>	<i>Targeting Base of the Pyramid</i>
Vision <i>To be a world leader in delivering innovative solutions to meet human needs through sustainability principles</i>	<i>For SC Johnson, creating sustainable economic value means helping communities prosper while achieving profitable growth for the company.</i>	<i>The Ron Brown Award for Corporate Leadership</i>	<i>Sustaining Values: SC Johnson Public Report</i>
Values Sustainability <i>We create economic value We strive for environmental health We advance social progress</i>	<i>We believe our fundamental strength lies in our people.</i>	<i>One of the 100 best companies for working mothers</i>	<i>The chance to do what's right for the environment and social sustainability</i>

Figure5 : Values-Based Matrix of S.C. Johnson
Source: Kotler, Kartajaya and Setiawan (2010, p.43)

METHODOLOGY

The researcher has mainly used the quantitative research technique. Furthermore, is based on the deductive approach where it is concerned with developing a hypothesis based on existing theory and then research strategy will be designed by the researcher to test the hypothesis (Singh, 2007). Consequently, appropriate literature was gathered, and the conceptual framework (Figure 6) was developed by identifying the independent variable and its attributes and the dependent variable. Based on the conceptual framework, hypothesis (Table 1) were

developed to understand the relationship between independent variable (spiritual marketing) and dependent variable (consumer purchase intentions). Data collection was done by means of questionnaires (23 close-ended questions using a five point Likert scale with responses ranging from Strongly Agree (5) to Strongly Disagree (1)) of which collected data was analysed by the use of SPSS software.

The collective population considered by the researcher are consumers of XYZ Company. The sample size was determined with a confidence level of 95% and confidence interval of 5 (Figure. 6). Thereby, the calculated sample size of 266 customers was selected using convenience sampling technique.

H1	H ₀₁	There is no relationship between spiritual marketing and consumer purchase intentions.
	H _{a1}	There is a relationship between spiritual marketing and consumer purchase intentions.
H2	H ₀₂	There is no relationship between trust and consumer purchase intentions.
	H _{a2}	There is a relationship between trust and consumer purchase intentions.
H3	H ₀₃	There is no relationship between creativity and consumer purchase intentions.
	H _{a3}	There is a relationship between creativity and consumer purchase intentions.
H4	H ₀₄	There is no relationship between social sustainability practices and consumer purchase intentions.
	H _{a4}	There is a relationship between social sustainability practices and consumer purchase intentions.
H5	H ₀₅	There is no relationship between environmental sustainability practices and consumer purchase intentions.
	H _{a5}	There is a relationship between environmental sustainability practices and consumer purchase intentions.

Table 1: List of hypothesis

DATA ANALYSIS

The questionnaires were distributed to 266 sampled customers and out of which 214 were used for final analysis (the final figure 214 was the result of elimination of questionnaires that were partially completed and some respondents not returning the questionnaires). Thereby, a response rate of more than 80% was achieved.

Reliability and Consistency Analysis

The Cronbach’s Alpha value was 0.805; the reliability of the tested samples is good and acceptable. Also, this Alpha value implies that 80.5% of the variance in the scores is reliable and error variances are lower to 19.5%.

Pearson Correlations

Correlation between spiritual marketing and consumer purchase intentions

		Spiritual Marketing	Consumer Purchase Intentions
Spiritual Marketing	Pearson Correlation	1	.717**
	Sig. (2-tailed)		.000
	N	214	214
Consumer Purchase Intentions	Pearson Correlation	.717**	1
	Sig. (2-tailed)	.000	
	N	214	214

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation between trust and consumer purchase intentions

		Trust	Consumer Purchase Intentions
Trust	Pearson Correlation	1	.475**
	Sig. (2-tailed)		.000
	N	214	214
Consumer Purchase Intentions	Pearson Correlation	.475**	1
	Sig. (2-tailed)	.000	
	N	214	214

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation between creativity and consumer purchase intentions

		Creativity	Consumer Purchase Intentions
Creativity	Pearson Correlation	1	.578**
	Sig. (2-tailed)		.000
	N	214	214
Consumer Purchase Intentions	Pearson Correlation	.578**	1
	Sig. (2-tailed)	.000	
	N	214	214

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation between social sustainability practices and consumer purchase intentions

		Social Sustainability	Consumer Purchase Intentions
Social Sustainability	Pearson Correlation	1	.612**
	Sig. (2-tailed)		.000
	N	214	214
Consumer Purchase Intentions	Pearson Correlation	.612**	1
	Sig. (2-tailed)	.000	
	N	214	214

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation between environmental sustainability practices and consumer purchase intentions

		Environmental Sustainability	Consumer Purchase Intentions
Environmental Sustainability	Pearson Correlation	1	.459**
	Sig. (2-tailed)		.000
	N	214	214
Consumer Purchase Intentions	Pearson Correlation	.459**	1
	Sig. (2-tailed)	.000	
	N	214	214

** . Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Testing

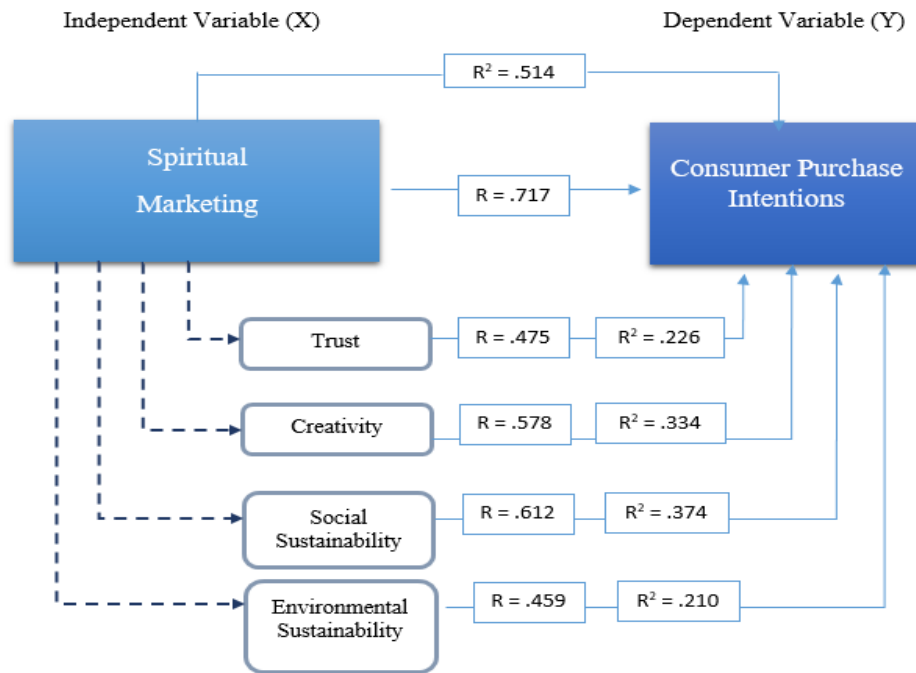


Figure6: R, R^2 Combination

Findings of the research concluded that there is a strong positive relationship between spiritual marketing and consumer purchase intentions. Calculations indicate that the Pearson Correlation is 0.717 and R^2 (linear regression) as 0.514. This assures that 51.4% of consumer purchase intentions is determined by spiritual marketing activities of the company. These findings confirm the importance of spiritual marketing activities for XYZ Company to induce consumer purchase intentions. Further findings of this research indicated that trust, creativity, social sustainability practices and environmental sustainability practices of the company have moderate positive relationship with consumer purchase intentions. Based on R^2 analysis it was revealed that 22.6% of consumer purchase intentions is determined by trust related activities of the company. Further, 33.4% of consumer purchase intentions is determined by creativity related activities at the company and 37.4% of consumer purchase intentions is determined by social sustainability practices. Consequently, 21% of consumer purchase intentions is determined by environmental sustainability practices at the company.

Demographic Factor Analysis

Analysis of demographic data showed that the sample consisted mainly of customers from the ages 20-34. More female participation was seen in the sample (77.1%). Gender and age cross tabulations revealed that majority of female consumers were from 20-24 age category and majority of male consumers were from the age category of 30-34 years. Age and marital status

cross tabulations revealed that married consumers are from the age category of 30-34 years. This figure is important when planning marketing activities as the primary target market of the company are parents. Moreover, it was observed that age distribution and gender distribution having a negative skewness of (-0.011) and (-1.299) respectively. Furthermore, marital status had a positive skewness of 0.227.

H: Numbers	Hypothesis	Acceptances	R	R2
H ₀₁	There is no relationship between spiritual marketing and consumer purchase intentions.	Rejected		
H _{a1}	There is a relationship between spiritual marketing and consumer purchase intentions.	Accepted	.717	51.4%
H ₀₂	There is no relationship between trust and consumer purchase intentions.	Rejected		
H _{a2}	There is a relationship between trust and consumer purchase intentions.	Accepted	.475	22.6%
H ₀₃	There is no relationship between creativity and consumer purchase intentions.	Rejected		
H _{a3}	There is a relationship between creativity and consumer purchase intentions.	Accepted	.578	33.4%
H ₀₄	There is no relationship between social sustainability practices and consumer purchase intentions.	Rejected		
H _{a4}	There is a relationship between social sustainability practices and consumer purchase intentions.	Accepted	.612	37.4%
H ₀₅	There is no relationship between environmental sustainability practices and consumer purchase intentions.	Rejected		
H _{a5}	There is a relationship between environmental sustainability practices and consumer purchase intentions.	Accepted	.459	21%

Figure7: Scientific combination of hypothesis

CONCLUSION AND RECOMMENDATIONS

The aim of this study was to investigate the influence of spiritual marketing on consumer purchase intentions of XYZ Company. Through literature review it was determined that trust, creativity, social sustainability and environmental sustainability practices of organisations are essential for capturing of a consumer's spirit or to engage in spiritual marketing (Kotler, Kartajaya and Setiawan, 2010). Primary research findings confirmed the importance of spiritual marketing activities for XYZ Company to induce consumer purchase intentions. Accordingly, the significance of spiritual marketing for organizations is further evidenced by Kotler, Kartajaya and Setiawan (2010). Further findings of this research indicated that trust, creativity, social sustainability practices and environmental sustainability practices of the company have a moderate positive relationship with consumer purchase intentions at the company.

Conclusion on Trust

Findings concluded that there is a moderate positive relationship between trust and consumer purchase intentions. Few respondents strongly agreed with the company's credibility and fulfilment of its promises. Kotler, Kartajaya and Setiawan (2010) state that brand integrity will build credibility and thereby will establish trust in the brand. Therefore, the objective of brand integrity is to capture the spirit of the consumer. Moorman et al. (1993) suggested that in order to build trust, confidence in another party is important. Accordingly, few respondents strongly agreed of having full confidence in the company. Studies have shown that trust and satisfaction are positively correlated (Crosby et al., 1990; Yoon, 2002). Kennedy et al. (2001) in his research revealed that customer satisfaction and thereby customer loyalty is a result of trust in the marketer. 51.4% of respondents had a neutral opinion on intentions to stay with the company. This category of consumers are the prospective consumers of the company. Strategies that build trust should be aimed at these consumers, so that the perception they have about the company can be changed to a positive one. Consequently, it can be concluded that the company's trust building activities have not been much effective to result in spiritual marketing and thereby to induce consumer purchase intentions.

Conclusion on Creativity

Survey results concluded that there is a moderate positive relationship between creativity and consumer purchase intentions. Questions that measured excitement in marketing activities, ability of products to offer life transforming experiences and ability of advertisements to generate deeper thoughts that create strong emotions towards the company, received responses ranging from disagree to neutral. Verganti (2008) explains that brands can use creativity through product colour, design, logo and brand name properties. Reinartz and Saffert (2013) define creativity as the capability of a company to offer uncommon and unique solutions to a problem. Further, Hurman (2016, cited in Gross, 2017) states that a creative message should be intrigue, decisive, exactitude and accordant. Thereby, findings have evidenced that the company's current marketing practices are not adequate enough to touch the spirits of consumers and thereby affecting their purchase intentions.

Conclusion on Social Sustainability Practices

Findings revealed that there is a moderate positive relationship between social sustainability practices and consumer purchase intentions. Most of the responses received to evaluate consumers' perceptions on social sustainability practices indicated disagree and neutral opinions. These questions measured if the company's marketing strategies are always beneficial to the society, add value to human-life and if the company's main purpose for

existence (mission) is to uplift the living standards of consumers and society. Drucker (2006) suggests that in order to be a successful organization, one has to start from not being profit oriented but rather, by practicing compassion towards the base of the market pyramid. The mission of a company should practice compassion towards the consumers, community and environment and thereby, the vision or the long term aspirations of a company should focus on both social sustainability and environmental sustainability (Kotler, Kartajaya and Setiawan, 2010). Thus, it can be concluded that the company's social sustainability practices are not sufficient enough to capture consumers' attention and therefore do not appeal much towards the consumers' spirits.

Conclusion on Environmental Sustainability

Based on survey results, there is a moderate positive relationship between environmental sustainability practices and consumer purchase intentions. Many respondents neither agreed/disagreed about the company's attempts towards green innovation and saving of the environment. Therefore, the company has to build environmental sustainable strategies to capture the spirits of this prospective consumer category. Consequently, Kotler, Kartajaya and Setiawan, 2010) explains that environmental sustainability should be woven into an organization's vision, mission and values, if to capture the spirits of consumers or to engage in spiritual marketing.

Recommendations

Trust: A survey done by Beinhocker, Davis and Mendonca (2009) reveals that modern consumers do not believe what companies claim to be but rather believe one another. The rise of social media tools such YouTube, Twitter and Facebook had caused a shift in consumer trust from companies to one another (Kotler, Kartajaya and Setiawan, 2010,p.30). Consumers tend to trust in what others have to say about a product/service and thereby expressed through social media/digital marketing platforms. Therefore, it is recommended that the company encourages consumer opinions and conversations through their website and by the development of a blog. Further, the company has to increase its presence in YouTube, Twitter and Facebook. This too, would encourage consumer opinions and suggestions. As explained by Kotler, Kartajaya and Setiawan (2010) brand integrity is essential for trust building. Therefore, the company should be able to deliver its promises in terms of product performance to post purchase experiences. As explained above, due to increasing customer presence in social media sites, even one failure of the company, can quickly spread across a wider audience.

Creativity: Creativity should be able to generate life transforming experiences to consumers (Kotler, Kartajaya and Setiawan, 2010). This can be achieved not only by promotional elements

of the company, but also through product offerings. Therefore, the company has to make sure that it provides products that make a real difference in the lives of its consumers; products that add superior value to their lives.

Social sustainability: The company has to focus on cause related marketing. Currently, the company donates its depreciated stocks to the charity. However, this practice has very limited emphasis on cause related marketing. The company should select a specific cause (social problems) and make donations to it or try to bring quality solutions to these social problems.

Environmental sustainability: According to Kotler, Kartajaya and Setiawan (2010) the practice of green marketing has to be consistent over the years, even during times of financial loss. Practice of eco-labelling, green packaging strategies, green product innovation etc. are encouraged.

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The Impact of Organizational factors on Sales Force Unethical Behavior in Sri Lankan Life Insurance Industry

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Abstract

As a service providing company image and success of the insurance industry vastly depend on the ethical behavior of their salespersons. Because they are the persons who have direct relationship with customers which in turn builds up the customer's satisfaction and trust towards the organization. Therefore managers must have the knowledge of the key determinants of unethical behavior of their salespersons if they want to ensure the ethical behavior among salespersons. Different factors contribute to this behavior and organizational factors were more important among them. The purpose of this research was to identify the organizational factors affecting the unethical behavior of salespersons in Sri Lankan life insurance industry. An extensive literature review was conducted and five organizational factors were identified as impacting on unethical behaviour of salespersons in Sri Lankan life insurance industry. Namely, they were manager behavior, sales targets, organizational culture, code of ethics and a rewarding system. Data were collected from 200 individual salespersons from 10 life insurance companies through the structured questionnaire. The stratified random sampling method was used for the selection of the respondents to the sample and data were analyzed using multiple regression. The findings of the research indicated that manager behavior, sales targets and rewarding system significantly predict the unethical behavior of salespersons. Further, it revealed that sales targets predict unethical behavior strongly, compared to the rewarding system and manager behavior. Findings of this research also gave some implication on the code of ethics where there is no code of ethics in the companies or if exists, not practiced or enforced. Accordingly, research provides recommendations that can be used to minimize the unethical behavior of salespersons. To improve the generalization of the findings, future research should broaden the sample by including general insurance companies and finance companies. Continuing research is needed to analyze the other factors in addition to organizational factors and future research could also look at customer perspective rather than the salesperson perspective.

Key Words: Business Ethics, Life Insurance Industry, Organizational Factors, Sales Persons, Unethical Behavior

INTRODUCTION

Sales profession is not being considered as a profession by many people due to bad experience while performing certain transactions with an unethical salesperson. It indicates that the issue of ethics is also related to the sales profession (Adnan *et al.*, 2013).

According to Talwar and Ali (2016) the biggest problem for any life insurance company is mis-selling of policies to the customers resulting in high lapsation of policies and high agent turnover. Looking at the Sri Lankan life insurance industry, having high policy lapse rate due to the over-selling and it indicates the industry's sales pitch is overenthusiastic because salespersons not acting honestly when they selling life insurance product to the client. Insurance salespersons should explain clearly to a client what the policy is, its benefits and what the policy holder's obligations are, an international expert Rudy Verrilli said in National Forum for Life Insurance Advisors in Colombo 2007. Further, he said that some salespersons do not do so and instead focus on merely selling the insurance policy to make gain through the sales commission. By confirming it Insurance Ombudsman Mr. Wickrama Weerasooria said that some salespersons were not explaining the policy before getting a client signature to it. Further, he said that he himself had brought the practice to the notice of the insurance companies but they responded that they were unable to do anything about it as once the policy has been signed by the client there was no proof how the signature was obtained (Lanka Business Online, 2007).

These unethical and misleading sales practices of some of the salespersons have earned insurance professionals and industry a bad name among the people (Sandi Kruse Insurance, 2005-2015). Due to that more effort was required to increase the insurance penetration rate. So, it was important to protect the individual salesperson's reputation as well as industry reputation. In addition unethical behaviors by salespeople cause problems within sales organizations and with other business functions, damage customer relationships, decrease customer retention, and reduce sales. In contrast, ethical behavior is a key ingredient to the success of every insurance producer and to the insurance industry as a whole. Therefore increasing the ethical behavior of salespeople is especially important in today's sales environment (Jones *et al.*, 2005).

Despite the importance of understanding salespeople's unethical behaviour, only a few studies have been empirically tested the determinants of unethical behavior of insurance salespersons. According to our knowledge, none of them has analyzed the unethical behavior of insurance salespersons in Sri Lanka. Therefore the main focus of this research study relates to the unethical behavior of salespersons in the Sri Lankan life insurance companies. According

to Askew *et al.* (2015) organizational factors are the most important category in understanding unethical behavior because organizational factors can be changed in order to influence the behavior of employees. Accordingly, this research does not intend to examine all the factors affect to unethical behavior of salespersons and only look at the impact of organizational factors on unethical behavior of salespersons.

Accordingly, the objectives of this paper are (1) to find the organizational factors which affect the unethical behavior of salespersons in Sri Lankan life insurance industry, (2) to identify most influential organizational factor relating to the unethical behavior of salespersons, (3) To recommend measures to minimize unethical behavior.

The following sections develop the hypotheses, test them empirically and delineate the discussion, conclusion, and direction for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Unethical Sales Behavior

Among the unethical behavior of the employees, unethical selling behavior is considered as the important unethical behavior (Bellizzi & Hasty, 2003; Roman and Munuera, 2005). The salesperson may behave unethically when interacting with different stakeholders such as customers, competitors, and employers. In the hierarchy of stakeholder importance, it appears that salespeople regard ethical transgressions against customers as being less ethical than any controversial actions against competitors or their employer (Chonko & Burnett, 1983; Chonko & Hunt, 1985). Mostly the sales people mislead the customers or show the inappropriate conduct in order to make greater sales revenue.

According to Roman and Munuera (2005) ethical sales behavior is fair and honest actions that enable the salesperson to foster long-term relationships with customers based on customer satisfaction and trust. If sales person's actions fall outside of fair and honest it indicates the unethical sales behavior. Examples of such activities include: lying on a sales call, selling products the customer does not need, losing focus on customer needs, lying about product availability and the competition, providing false answers, applying an inordinate amount of sales pressure, and portraying products as better than they actually are, making false promises and withholding information and so on.

Life insurance business is based on trust and honesty (Haron *et al.*, 2011). Therefore requires a high degree of responsibility and professionalism from the insurance sales persons. But mostly the sales persons show unethical behavior (Adnan *et al.*, 2013) and it leads to image problem of the insurance industry. Hence, it is important for life insurers to understand the fact that

ethics in marketing of insurance products is not only a moral obligation but also important for long-term business sense. Being ethical might lead to a loss for the insurers in the short run, but ultimately helps them to win over customers, resulting in new business because ethical behavior is the number one characteristic customer want in their insurance producer. And strong ethical behavior is an invaluable characteristic to an insurance producer's success.

The conceptual model we propose is shown in Figure 1, namely managers behavior, sales targets, organizational climate, organizational culture, code of ethics and rewarding system affect the salesperson's unethical behavior. The logic for the choice of such variables and their hypothesized relationship with unethical sales behavior is explained below.

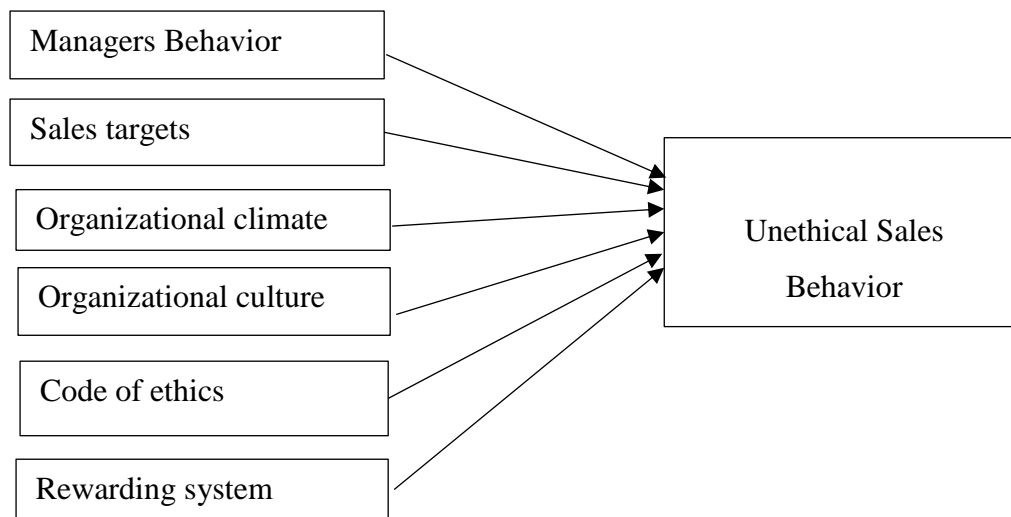


Figure 1: Conceptual Model

Determinants of Unethical Sales Behavior

Managers Behavior

Leadership is considered an important factor to have an impact on effectiveness and efficiency of the organization. Effective leadership helps to develop the morale of the employees, builds the effective work environment, motivates and guides the employees towards goal achievement, and helps to create the confidence in employees (Adnan *et al.*, 2013).

Northouse (2010) defines leadership as a process whereby an individual influence a group of individuals to achieve a common goal. Accordingly, leaders influence the employees working under him (Ingram *et al.*, 2005). According to Abratt *et al.*(1999) manager's practices are followed by the employees. It means the way the manager will act will be followed by the employees. If managers want to incorporate ethical standards into the employee, they need to

act accordingly. Manna and Smith (2004) highlight in their research many winning managerial skills like self-awareness, self-regulation, self-motivation, and effective communication, these skills help out the employees to work effectively and to achieve the targeted goals of the organization.

The Relationship between Manager Behavior and Ethical Behavior

Adnan *et al.* (2013) conducted a research and found that there is a highly significant relationship between leader's characteristics and sales ethical behavior. However, according to them authentic leadership style negatively related to ethical behavior development.

Zhang and Zhang (2016) conducted a research on the relationship between ethical leadership, ethical climate and business ethical sensitivity of Chinese insurance agents. The findings indicated a significant positive relationship between ethical leadership and ethical sensitivity. Furthermore, ethical leadership positively related to the ethical climate and ethical climate mediated the relationship between ethical leadership and ethical sensitivity.

In a study titled "Salesperson Ethical Decision Making: The Impact of Sales Leadership and Sales Management Control Strategy", Ingram *et al.* (2007) conclude that sales leadership has a significant relationship with ethical behavior of salespeople.

As for the factors influencing employees to behave unethically, Zabid and Alsagoff (1993) found that the behavior of one's immediate superior is more important in contributing towards such a conduct.

In a study titled "Ethical leadership and moral behavior of employees" Hendriks (2011) conclude that ethical leadership has a significantly negative relationship with moral behavior. Further, she mentions that when the leader is perceived as ethical, the employee will show less moral behavior.

On the basis of the above discussion about manager behavior we set the following hypothesis:

H₁: Managers behavior significantly effect on the unethical behavior of salespersons

Sales Target

A sales target is the portion of the sales forecast that allocated to a particular salesperson or sales group during a specified time period (Okwandu, 2002) and it is one of the most used managerial tools in sales management in order to motivate and direct the effort of salespersons (Good & Stone, 1991). It is also frequently used as performance evaluation to assess the productivity of salespeople and captured in the broader concept of the control system (Ouchi,

1979; Anderson & Oliver, 1987; Schwepker Jr & Good, 1999). When marketing executives achieve their quota, they often receive some sort of reward for their performance. Sales quotas and performance targets are different names used for sales targets (Schwepker Jr & Good, 1999; Ojikutu *et al.*, 2013; Nebo & Chinwuba, 2017; Franco-Santos & Bourne, 2008).

The Relationship between Sales Targets and Ethical Behavior

Haron *et al.* (2011) investigate the relationship between sales target and intention to perform unethical behavior. They indicate that sales target significantly influence on the insurance agents' intention to the unethical behavior. Further, they mention that attitudes partially mediates the relationship between sales target and intention to perform unethical behavior.

Nebo and Chinwuba (2017) conducted a research entitled “Salesforce – customer relationship and ethical behaviors in the Nigerian banking industry. They state that sales quotas have a significant effect on salespeople's ethical behaviors.

Ojikutu *et al.* (2013) assessed the Relationship Between Sales Quotas and Moral Judgment of Insurance Salespersons: the Moderating Effects of Personal Moral Values, Quota Failure Consequences, and Corporate Ethical Climate, using survey research design method. Findings revealed that perceived difficulty in sales quota attainment has a significant effect on salespeople's ethical behaviours.

In their study titled “Issues and problems in ethical practices amongst takaful agents” Aziz *et al.* (2016) mention that agents act out of control, either consciously or unconsciously to achieve the sales target set by the company. According to them, it leads towards unethical behavior.

Salespeople behave against the firm's ethical norms in order to achieve sales quotas when they appraised by their short-term sales performance. This unethical behavior destroys the long-term buyer-seller relationships and thus losing customers or even more serious consequences (Lin, 2012).

On the basis of the above discussion about sales targets we set the following hypothesis:

H₂: Sales Targets significantly effect on the unethical behavior of salespersons

Organizational Culture

Organizational culture can be defined as the shared set of assumptions, values, norms, beliefs and behavior patterns that are practiced in the certain organization to cope with the external and internal environment (Adler, 1986; Odom *et al.*, 1990; Scholz, 1987).

According to Hunt *et al.* (1989) organizations may have different cultures such as cultures that guide service and product quality, selection of distribution channels, advertising content, treatment of customers and etc. However foundation of all these cultures is ethical culture (Chadegani & Jari, 2016) which establishes and maintains the standards that explain the right behaviour and the right conducts which worth doing. Therefore it can be a good predictor of employee behavior (Key, 1999).

The Relationship between Organizational Culture and Ethical Behavior

Shafer and Wang (2010) study the impact of organizational ethical context and Machiavellianism on organizational-professional conflict and affective organizational commitment among Chinese accountants. They highlight that the employees perceive that the ethical culture of the organization has the deep impact on the organizational commitment and ethical decisions done by the employees.

By investigating US and Chinese business executives Baglione and Zimmener (2007) contend that the culture has a deep impact on the ethical practices. Further, they said that People from different cultures show different ethical behaviors.

Douglas *et al.* (2001) examine the relationship between organizational ethical culture in two large international CPA firms, auditors' personal values and the ethical orientation that those values dictate, and judgments in ethical dilemmas typical of those that accountants face. The findings highlight the impact of organizational culture on the ethical behavior of the employees. Cooper and Frank (1991) in a survey of 1,170 Chartered Life Underwriters (CLUs) and Chartered Financial Consultants (ChFCs) with a response rate of 31 percent or 361 CLUs and ChFCs identified that organizational culture does not encourage agents to compromise their ethical values.

Kuyeet *al.* (2013) conducted an empirical study on organizational culture and ethical behaviour from a strategic standpoint. The result of the findings indicated that organizational culture has a significant relationship with ethical behavior and good employees' values. Thus, they conclude that behavior of employees in an organization is largely determined by the acceptable organizational norms, values, attitudes, rules, and rituals.

On the basis of the above discussion about an organizational culture we set the following hypothesis:

H₃: The organizational ethical culture significantly effect on the unethical behavior of salespersons

Code of Ethics

The Code of Ethics states the rights, duties, and responsibilities of the company towards all its stakeholders. Likewise, it contains behavior principles and rules of conduct need to use in decision-making processes and therefore it is a source of behavioral rules for the company's employees (Sacconiet *al.*, 2002). Codes of ethics are formally written and explicit policies intended to guide employee and corporate behavior by establishing the boundaries of ethical behavior (Nebo & Chinwuba, 2017). According to Withanage (2010) a code of ethics or conduct is a statement of central company values supporting best practices, behaviors, and standards. Therefore the code of ethics can be defined as a document or agreement that specifies morally acceptable behavior inside an organization.

The Relationship between Code of Ethics and Ethical Behavior

Nebo and Chinwuba (2017) conducted a research entitled “sales force – customer relationship and ethical behaviors in the Nigerian banking industry”. They found that there is a negative impact on the banks' code of ethics and salespeople's ethical behaviors.

Cleek and Leonard (1998) done the survey to found the effectiveness of the codes of ethics in promoting ethical decision-making behavior and the results of the survey indicated that codes of ethics are not influential in determining a person's ethical decision-making behavior.

According to Trevino (1986) organizations attempt to guide member's behavior by developing formal codes of ethical conduct. Further, he mentions that codes must be consistent with the organizational culture and must be enforced. Thus codes of ethics have the potential of impacting on ethical behavior in organizations.

Schwartz (2001) conducted a study in order to examine the relationship between corporate codes of ethics and behavior. The study found that codes of ethics are a potential factor influencing the behavior of corporate agents.

Weeks and Nantel (1992) also did a research to investigate the relationship between a code of ethics and sales force behavior. The findings revealed that a well-communicated code of ethics can be related to ethical sales force behavior. Furthermore, it appears that a sales force that is employed in such an environment can be profiled as being relatively high in job performance and receiving equally high satisfaction from their positions.

On the basis of the above discussion about the code of ethics we set the following hypothesis:

H₄: The code of ethics significantly effect on the unethical behavior of salespersons

Rewarding System

The organizational rewarding system refers to the monetary and non-monetary mechanisms by which workers are rewarded within the firm. Monetary rewards include wages and salaries, cash bonuses and prizes, fringe benefits, stock options and employee profit-sharing plans. However among these lot of monetary rewards salary and bonus are the mostly used monetary rewards. Non-monetary rewards are benefited that the employees receive which do not include money. It can be consist of promotions, trips, public recognition such as ‘Employee of the month’, non-monetary prizes such as theater tickets or tickets to the sporting events, opportunities to develop in the organization and health benefit (Harvey, 2000; Caballero, 1988). Several scholars use the word compensation system instead of the rewarding system because compensation is reward individual received in exchange for performance (John *et al.*, 2013).

The Relationship between Rewarding System and Ethical Behavior

Kurland (1996) examined the influence of commission, along with experience, income, professional accreditation, and a modified theory of planned behavior on sales agents' ethical intentions toward clients. He indicates that compensation system did not significantly influence on sales agents' ethical intentions toward clients. Rather, results suggest that agents are driven primarily by their moral obligations, perceived behavioral control, and attitudes.

Honeycutt *et al.* (2001) propose a model that explains the ethical behavior of automobile salespeople. The findings suggest that ethical perception is the most important determinant of ethical behavior. Also, the method of compensation is a major determinant of ethical behavior. In their study titled “A Typology of Situational Factors: Impact on Salesperson Decision-Making about Ethical Issues” Ross and Robertson (2003) found that both demographic factors and personality factors have main effect on ethical decision making. Furthermore larger commission affects to choose an unethical alternative in decision making.

Robertson and Anderson (1993) conducted a research on Control System and Task Environment Effects on Ethical Judgment. Findings indicate that the proportion of salary versus commission in the salesperson's compensation system does not have an effect on ethical judgment.

The results of the study by Roman and Munuera (2005) titled “determinants and consequences of ethical behavior: an empirical study of salespeople” indicate that method of compensation and control system are important determinants of ethical behavior.

On the basis of the above discussion about the rewarding system we set the following hypothesis:

H₅: Rewarding system significantly effect on the unethical behavior of salespersons

METHODOLOGY

Sampling and Data Collection

This research involved a sample of 200 insurance salespersons from 10 Sri Lankan life insurance companies. These 200 salespersons for the sample and 10 companies are selected based on the percentages of individual insurance salespersons registered with insurers. The questionnaire was distributed to the salespersons both by hand and online. Among 221 questionnaires, 200 useable questionnaires were selected.

Method of analysis

This study used the descriptive statistics as well as inferential statistical techniques to analyze information gathered. First of all present the demographic analysis about respondents. Rest in this research Cronbach's Alpha coefficient was used for ascertaining the reliability, normality of the distribution of variables, multicollinearity and descriptive statistics are used to describe characteristics of single variables and multiple regression analysis used to measure the impact of independent variables on dependent variable.

Measures

Cheng *et al.* (2014) explained five types of unethical behavior among life insurance salesperson. These five items were used to measure the unethical behaviour of the insurance salespersons. Ethical leadership has been measured by using three items from the Ethical Leadership Questionnaire developed by Yukl *et al.* (2013). According to Locke and Latham (1990) behavioral effects of the use of sales targets in the sales environment is normally attributed to three factors. They are; target difficulty, target specificity, and target participation. Using these three factors sales target was measured. The organizational ethical culture was measured using three items from CEV (Corporate Ethical Virtues) questionnaire developed by Kaptein (2008). According to Somers (2001) existence of the code of ethics not enough for ethical behavior, it must be communicated to all employees and need to adjusted according to the current ethical situation. Therefore these three factors were used to measure the code of

ethics. Reward system was measured by three items getting from the questionnaire developed by Nel (2008).

DATA ANALYSIS AND RESULTS

The demographic factors of the respondents showed that the highest number of respondents came from male salespersons; ages from 18 to 25 years; married; job experience from 1 to 5 years; education was G.C.E. (A/L) and monthly income was below 50,000.

In this study, coefficient alpha was 0.865 for unethical behavior, 0.708 for manager behavior, 0.749 for sales targets, 0.730 for organizational culture, 0.865 for the code of ethics and 0.945 for the rewarding system. These results reveal that the reliability for each variable exceeds the suggested cut-off point of 0.7 and indicating scale reliability.

Before any formal statistical analysis, it is essential to test the data for multivariate assumptions such as normality, multicollinearity, homoscedasticity and linearity and all variables satisfied the multivariate assumptions.

In order to identify the variables Managers behavior, Sales targets, Organizational culture, Code of ethics and Rewarding system descriptive statistics are used. The mean value (2.43) of the unethical behavior indicates that there is an unethical behavior among salespersons in Sri Lankan life insurance industry. Reviewing the mean values of independent variables, overall manager behavior is ethical; sales targets set by the managers not fair; organizational cultures of the respondents fairly ethical; code of ethics are not implemented and communicated in the organizations and finally, ethical behavior is not considered when rewarding salespersons.

Multiple regression analysis was used to predict the dependent variable unethical behavior based on Manager Behavior, Sales targets, Organizational culture, Code of ethics and Rewarding system.

R-value of 0.675 indicates that the linear combination of the five independent variables moderately predicts the dependent variable. R^2 is 0.455 and it indicates 45.5% of the variance in the dependent variable is explained by the independent variables in the model.

Table 1: Multiple Regression Analysis Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.053	.393		5.229	.000
Manager behavior	-.279	.064	-0.237	-4.365	.000
Sales targets	.399	.050	0.447	7.975	.000
Organizational culture	-.002	.075	-0.002	-.030	.976
Code of ethics	-.081	.076	-0.061	-1.058	.292
Rewarding system	.311	.056	0.349	5.536	.000
R = 0.675					
R ² = 0.455					
F = 32.432					

Testing Hypotheses

The results of hypothesis 1 showed that manager behavior significantly effects on the unethical behavior of salespersons ($\beta = -0.237$, $p < 0.05$). The results of hypothesis 2 showed that sales targets significantly effect on unethical behavior of salespersons ($\beta = 0.447$, $p < 0.05$) and results of hypothesis 5 showed that rewarding system significantly effect on unethical behavior of salespersons ($\beta = 0.349$, $p < 0.05$). p-value of organizational ethical culture (0.976) and code of ethics (0.292) is not at an acceptable level. Accordingly alternative hypothesis H_3 and H_4 are rejected.

DISCUSSION

This study investigates the organizational factors effect on salespersons unethical behavior. In our study, H_1 accepted showing that manager behavior as significant determinants of salespersons behavior. Accordingly results support the notation of manager behavior has significant negative relationship with unethical behavior of salespersons. It indicates that when managers having ethical behavior or leadership it helps to reduce the unethical behavior of salespersons.

As it was expected, results show that sales targets have a significant positive effect on unethical behavior. Accordingly second finding (hypothesis 2) provide additional support for previous theoretical arguments and empirical evidence favoring the positive effect of sales targets on

unethical behavior (Ojikutu et al., 2013; Nebo & Chinwuba, 2017; Haron *et al.*, 2011; Aziz *et al.*, 2016; Lin, 2012)

Contrary to our expectation, the result shows that an innovative culture does not have a significant effect on sales people's unethical behavior. The result is somehow consistent with the findings by Cooper and Frank (1991) that organizational culture does not encourage agents to compromise their ethical values. Therefore warrants further research.

Previous research analyzing the relationship between ethical behavior and code of ethics has led to mixed findings. Cleek and Leonard, 1998; Nebo and Chinwuba, 2017 did not find significant relationship whereas findings from Trevino, 1986; Adams et al., 2001; Schwartz, 2001 indicate that the code of ethics significantly influences the ethical behavior. The use of a disaggregated conceptualization of code of ethics has yielded clearer results, as our test results of hypothesis indicate that the code of ethics does not have a significant impact on salespersons unethical behavior.

Geeta et al. (2016) highlighted the importance of studying the rewarding system as an organizational factor affects to behavior. We have responded to their challenge by analyzing how the rewarding system affects sales people's unethical behavior. Our results provide evidence that rewarding system has a significant impact on unethical behavior. Accordingly our finding contributes to the literature by providing further empirical evidence for the significant result obtained by Honeycutt *et al.*, 2001; Ross & Robertson, 2003; Roman & Munuera, 2005.

CONCLUSION

According to the result of the study three hypotheses (H1, H2 and H5) were accepted in 95% level of confidence. Therefore it can be concluded that three factors namely, manager behavior, sales targets and rewarding system significantly predict the unethical behavior of salespersons. Further, the analysis reveals that sales targets predict unethical behavior strongly, compared to rewarding system and manager behavior.

Accordingly following recommendations were made to address the significant factors identified by the study. To address a manager's behavior, need to incorporate stricter recruitment practices where potential employees are assessed in terms of their integrity and ethics. In terms of addressing the behaviour of existing managers, the organization could provide ethics training to all its managers and supervisors to make aware them towards behaving more ethically. As well as organization could include a reward or incentive into managers' annual increases and performance bonuses for displaying ethical behaviour.

To address sales targets as a factor impacting on unethical behavior should assign a reasonable quota to the salespersons, make salespeople comfortable with their assigned quotas, established proper monitoring system to guide salespersons and do not put too much pressure on salespersons to meet challenging, short-term financial goals.

It is must to design a rewarding system that rewards the salespersons for behaving ethically, to address the rewarding system as a factor impacting on unethical behavior.

Other than those findings of this study also gave some implication on code of ethics. According to the findings of the study, majority (44.5%) of the respondents not giving favorable answers on code of ethics and it indicates that there is no code of ethics in the companies or if exists, not practiced or enforced. But organizations must have a code of conduct as well as implement, communicate and reinforce it to raise the level of the ethical behavior of employees.

SUGGESTIONS FOR FUTURE RESEARCH

Organizational factors were not able to account for more than 46% of the variance in unethical behavior of salespersons. It means some important variables may left out of the model, behavior models in future researches can be extended to include other factors in addition to organizational factors. Future research can also be done in considering general insurance companies, banks and finance companies. In banks financial executives are fixed salary employed and in other finance companies marketing officers are getting fixed salary with commission. Future research could also look at customer perspective rather than the salesperson perspective.

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The role of discrete negative emotions in predicting the behavior of misusing time and resources in business organization

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Abstract

Counterproductive work behaviors (CWB) are the deviant behaviors of employees that violate the organizational norms, and in turn harm the organization or its members. Misuse of time and resources, a form of CWB is of increasing concern to business organisations worldwide. Such behaviors are mainly aimed at organizations than the individuals, restricting productive time on the job and inappropriate or unauthorized use of organisational resources. Extant literature informs that these behaviors are caused by stressful work conditions mediated by negative emotions. However, the extant literature does not adequately consider multiple discrete emotions to study CWB. This study examines the influence of discrete negative emotions on CWB in the context of manufacturing and IT firms in India. It contributes to theory by linking individual emotions to the deviant behaviors relevant to misuse of time and resources. Finally, the managerial implications derived from the study helps to understand employees' emotional states and their possible consequences.

Key words: misuse of time and resources, counterproductive work behavior, time theft, time banditry, withdrawal

INTRODUCTION

If employees of an organisation are asked if they are 100% productive throughout the scheduled work hour, not many would affirm (Brock et al., 2013). This leads one to ponder how employees are using the organisation time and resources to contribute to the organisation during work hours. Time and resources of an organisation are its assets which have to be used by the employees to contribute to the organisation's productivity. Misuse of these prove to be costly for any organisation. An employee can exhibit these behaviors in many different ways. A few ways among them are coming late, leaving early, using internet for non-work related activities, taking longer lunch or coffee breaks, abandoning some task responsibilities to pursue self-interest. Many studies propose that employees require some off-task time to be motivated and productive. But in case if this off-task time is claimed beyond what is sanctioned by the organisations, it is misuse (Martin et al., 2010). Though these behaviors are very common and

has significant negative effects on organisations, they have been understudied (Henle et al., 2010; Brock et al., 2013). As these behaviors undermine the organisation's mission, morale, effectiveness and productivity, it is important to study these behaviors in today's organisational context. By strengthening the conceptualization and theoretical understanding of these behaviors in terms of their causes and consequences, attempts to identify, predict, intervene and ultimately minimize the occurrence of such acts could be more effective.

Over the last few decades, researchers have studied misuse of time and resources as one of the dimensions of counterproductive work behaviors (CWB). It has been recently introduced as a distinct construct of CWB (Baskin, et al., 2017). It has been termed differently by different authors like withdrawal (Spector et al., 2006), time theft (Henle et al., 2010), time banditry (Baskin et al., 2017).

In general, studies in the literature portray CWB which consists misuse of time and resources as one of its dimensions, as employee response to frustrating organisational situations (Royet et al., 2012; Matta et al., 2014). These frustrating organisational situations lead to negative emotions and these negative emotions leads to misuse of time and resources in organisations. Majority of the studies limits the conceptualization of negative emotions as a function of single variable. However, it consists of different individual emotions like anger, anxiety and depression, among others. Studies on individual emotions would yield more useful insights on how these discrete emotions influence employee behavior. In this study we intend to examine the effect of discrete individual emotions on misuse of time and resources.

Furthermore, CWB literature has identified the influence of individual's perception of organisation control environment on their behavior (Fox and Spector, 1999; Spector and Fox, 2002). However, no substantial work has been carried out considering all possible factors that defines the perception of organisation control environment. The influence of these factors on misuse of time and resources has not been explicitly examined. This opens a gap for further research to empirically examine the influence of perception of organisation control environment on misuse of time and resources. With this back drop, the following are the two research objectives for the study.

1. To discern the influence of discrete negative emotions on misuse of time and resources.
2. To investigate the effects of perceived organisation control environment on misuse of time and resources.

For this study, data from employees in manufacturing and IT organisations in Bangalore was collected using a structured questionnaire. This study examines the influence of discrete negative emotions and perception of organisation control environment on misuse of time and resources. In that direction this study would further provide a deeper understanding as to when and why employees engage in these behaviors. This paper consists of six sections. Second section consists of literature review and development of hypothesis for the study. Section three describes the sample and methodology adopted in the study. Section four presents the data analysis and results of the study. Section five consists of the discussion followed by conclusion of the study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Misuse of Time

Several deviant behaviors have been identified in the literature as being harmful. These behaviors harm the organisations or its members or both. Misuse of time fall into the category of behaviors that harm the organisation. It has been recently identified as a distinct dimension of negatively deviant behavior or counterproductive behavior (Baskin et al., 2017). By definition, misuse of time resembles several other constructs like withdrawal, time theft, time banditry and the like. Spector et al. (2006) defined withdrawal as behaviors that restrict the amount of productive time in the organization. Henle et al., (2010) defined employee's behaviors of wasting or spending time during work hours without contributing to the organisation as time theft. On the similar lines, time banditry constitutes employee behaviors of engaging in non-task activities during their scheduled work hours (Baskin et al., 2017). Further, these behaviors are exhibited during work hours for which the employees are compensated for, even though they are not contributing to the productivity of the organisation. Hence, these behaviors are unethical as it imply theft of time which rightfully belongs to the organisation. In short, employees will be working part time in exchange for full-time pay (Ketchen et al., 2008; Henle et al., 2010).

An online survey by AOL and salary.com collected response from 10,044 individuals and estimated that on an average each individual wastes around 2 hours per day that contribute to a loss of \$759 billion annually (Malachowski, 2005).. A study in construction industry reports that 53 minutes per employee is wasted on a daily basis. Another study in retail setting found

that more than 60% of employees reported their misuse of time in working hours (Malachowski, 2005; Henle et al., 2010). In a study by Henle et al. (2010), over 84% respondents admitted their involvement in misuse of time at least once over a period of two months. In survey of HR professionals (Burke and Esen, 2005) 50% of respondents admitted that they stayed back late at least sometimes with not much work to do and 44% of respondents reported that they stayed late and were not productive.

In the next section we explain why misuse of time and misuse of resources is considered together as one construct in this study.

Misuse of Time and Resources

The behavior of using internet for personal reasons, organizations phone for personal calls not only represents misuse of time but also indicates misuse of resources. Here the phones, computers and internet facility are provided by an organization to carry out the organization tasks. Using these during scheduled work hours for personal use represents misuse of resources along with misuse of time. On the similar lines, excessive socialization with coworkers also represents misuse of both time and resources considering coworkers who are unnecessarily dragged into conversations, who would have otherwise been productive during that time as organization resources. Thus misuse of time and misuse of resources go hand in hand and thus can be studied as a single construct. Therefore, in this study these concepts are considered to be one and used across the study as “misuse of time and resources”.

Organizations have certain strategic objectives that need to be accomplished and some resources at their disposal to accomplish the set objectives. Any organization striving to be productive with minimum or optimum resources will be greatly affected by these kinds of behaviors. It is considered to be a major problem in any organization because of its frequency of occurrence and its associated financial cost. Apart from economic costs from these behaviors, organization will also have certain negative implications. For example, managers or supervisors may have to spend more time monitoring and disciplining their employees and rescheduling other employees to manage the lagging tasks of those employees who engage in such behaviors (Henle et al., 2010). And employees who has to work more to cover up these temporary production loss would be demotivated (Jamal, 1984). Hence employees who misuse time and resources might end up having a strained relationship with their supervisors and coworkers. This condition can be even more worst for organizations that work in teams as this

kind of behavior of one employee can affect the entire team (Robinson and O'Leary-Kelly, 1998; Henle et al., 2010).

In the following section we will look at the predictors that cause or influence these kind of behaviors.

Predictors of Misuse of Time and Resources

Prior literature provides conflicting views regarding the intent of these behaviors. Some studies state that these behaviors are neither exhibited to harm the organization or its members nor they are intentional (Spector et al., 2006; Brock et al., 2013). However, Henle et al. (2010) called misuse of time and resources as unethical and intentional, as employees are stealing time that rightfully belongs to the organization and for which they are compensated. Regardless of the underlying intentions, these behaviors are costly to the organizations (Kethchen et al., 2008).

In many cases, misuse of time and resources is driven by laziness or self-interest (Kethchen et al., 2008; Martin et al., 2010). This shows that these behaviors are not necessarily exhibited with an intention to harm the organization or its members. However, literature also provides evidence to show that these behaviors are intentional. In an organizational setting, an employee is not expected to demonstrate his frustration or any other negative emotions against the organization or his supervisor. In such cases he would not prefer to exhibit overt behaviors like aggression, abuse and sabotage, but rather respond covertly through behaviors like withdrawal, shrinking, production deviance which are kinds of misuse of time and resources. Hence these behaviors are used as a form of passive-aggressive retaliation in response to disappointment, frustration or underappreciation (Storm and Spector, 1987; Bennett and Robinson, 2000)

Studies in the literature shows that misuse of time and resources could be driven by certain situations: perception of injustice, lack of direction, boredom, lack of interest, lack of support, poorly defined tasks, job complexity, laziness, inappropriate allocation of personal time during work hours, frustration with work environment (Kethchen et al., 2008; Baskin et al., 2017). These situations lead to negative emotions that further influence employee behavior (Fox and Spector, 1999; Fida et al., 2015). Greater the extent to which an individual is frustrated in an organization setting, the more he/she will find ways to withdraw from that psychologically or deviate his/her attention to activities like cyber loafing, talking to coworkers or over phone. In other words, employees logically seek to avoid frustrating situations and

replace these with other rewarding tasks though it is a temporary reward (Ketchen et al.,2008; Martin et al., 2010).

In a study by Taylor and Walton (1971), organizational frustration was found to positively relate to withdrawal. Spector (1978) suggested, withdrawing psychologically from the situation as one among several responses to the perception of frustration. This psychological withdrawal would lead to detachment, absence, reduced effort or turnover. A field study by Storms and Spector (1987) exhibited an association between frustration and behaviors like demonstrating apathy towards the job, wasting time and materials, taking undeserved breaks that represents misuse of time and resources. Here frustrations can be considered as emotional reactions to frustrating situations (Storm and Spector, 1987). These frustrating situations induce negative emotions in employees and these emotions influence employee behavior (Spector and Fox, 2002). Further, studies linking job stressors to CWB have considered negative emotions as a single composite variable or just limited to a few emotional reactions (Fox et al., 2001; Miles et al., 2002; Bruk-Lee and Spector 2006; Dalal et al., 2009). But it consists of a wide range of different individual emotions namely, anger, anxiety, boredom, frustration, depression among others (Katwyk et al., 2000). Spector et al., (2006) studied the discrete emotion item within upset subscale and found withdrawal to be related to the emotions like anger and fury. Further, emotions such as fatigue, gloom and fury were related to production deviance. This explains that each emotion can be an underlying motivation for different behaviors.

Hence to understand how different emotions influence misuse of time and resources, there is a need to look more microscopically at these behaviors in relation to different discrete negative emotions.

Hypothesis 1: Discrete negative emotion influence the behavior of “misuse of time and resources”.

Hypothesis 1a: Anger will be positively related to misuse of time and resources

Hypothesis 1b: Anxiety will be positively related to misuse of time and resources

Hypothesis 1c: Boredom will be positively related to misuse of time and resource

Hypothesis 1d: Depression will be positively related to misuse of time and resource

Hypothesis 1e: Discouragement will be positively related to misuse of time and resource

Hypothesis1f: Disgust will be positively related to misuse of time and resource

Hypothesis1g: Fatigue will be positively related to misuse of time and resource

Hypothesis1h: Fright will be positively related to misuse of time and resource

Hypothesis1i: Fury will be positively related to misuse of time and resource

Hypothesis1j: Gloom will be positively related to misuse of time and resource

Effect of perceived organizationcontrol

The felt negative emotions trigger certain negative behaviors. But this does not happen in a reflexive manner with humans. At times, in case of strong emotions, individuals might act quite impulsively but typically emotions prepare a person to act depending upon certain other factors (Spector and Fox, 2002). These behaviors are strongly influenced by the individual's perception of the likelihood of being caught and punished. According to Dollard et al. (1939) 'the inhibition of any act of aggression varies directly with the strength of the punishment anticipated for the expression of that act' (p. 37). Thus the overt expression of CWB would be anticipated to be linked to the perception that one could slip away without being caught and punished (Fox and Spector, 1999; Spector and Fox, 2002).

The CWB literature identifies variables like perceived certainty of detection and perceived severity of punishment to have an influence on the behavior of theft (Hollinger and Clark, 1983). Perceived certainty of detection refers to employee's perceived risk of being discovered after committing an act of CWB (Hollinger and Clark, 1983). This explains the general perception of detection risk –whether by management, co-workers or any other source. Perceived severity of punishment refers to a range of formal and informal sanctions imposed by management or coworkers (Hollinger and Clark, 1983). Formal sanctions operate via the regularized bureaucratic rules and corresponding sanctions established by those in power within the work organization. Verbal and written warnings, dismissal, demotion, and suspension are few examples for formally instituted sanctions. Informal sanctions deter the pervasiveness of CWBs in the organizations by creating a normative behavior in terms of rule breaking and other offenses (Fine et al., 2010). While the formal social controls are no doubt important in shaping employee work behaviors, research has shown that this phenomenon would be more effective along with the informal social controls or work group sanctions (Hollinger and Clark, 1982; Parilla et al., 1988). According to Fine et al., (2010), the type and the level of CWB in organizations show the normative behavior of fellow employees such that

the level of a particular CWB (e.g. theft, sabotage) will be high when that behavior is tolerated by their coworkers. Thus we propose perceived certainty of detection, perceived severity of punishment, and perceived informal work group sanctions to be negatively associated with misuse of time and resource.

Hypothesis 2a: Perceived certainty of detection will be negatively related to misuse of time and resource

Hypothesis 2b: Perceived severity of punishment will be negatively related to misuse of time and resource

Hypothesis 2c: Perceived Informal work group sanctions will be negatively related to misuse of time and resource

METHOD

Participants

The respondents for the study were 719 employees working in Bangalore, among whom 621 were from manufacturing industry and the remaining 98 respondents were from IT industry. Out of 719, 301 respondents were shop floor employees and the remaining 418 respondents work in office. The sample comprised respondents whose age ranged from 18 to 58 years. The average age of the group is 31 years. Majority of the sample comprised male respondents (610=84%) than female respondents (109=15%). The distribution of respondents based on marital status was uniform with 365 married respondents (51 %) and 354 unmarried respondents (49%). The educational qualification of the respondents varies from 10th standard, Diploma, 12th standard, ITI, Graduation to Post Graduation. Work experience in current organization varied from 3 months to 35 years.

Measures

Misuse of time and resources: The measure consisted of 12 items relating to misuse of time and resources with a Cronbach alpha of 0.9. The items were drawn from the Spector et al. (2006) CWB scale's withdrawal dimensions and Gruys and Sackett's (2003) CWB dimension of misuse of time and resources.

Negative emotions: The negative emotion subscale of the Job-related affective well-being scale was used (JAWS; Katwiyket al., 2000) to measure negative emotions. Respondents were

asked to rate how often their present jobs made them feel each of 10 negative emotions. Each item was rated on a five-point scale ranging from 1=Never to 5 = very often.

Perceived organization control: This measure included three subscales to capture Perceived certainty of detection ($\alpha = 0.928$), Perceived severity of formal punishment ($\alpha = 0.894$), Perceived informal work group sanctions ($\alpha = 0.934$). Perceived certainty of detection measures how certainly these behaviors will be detected if exhibited. Each item of all dimensions of CWB scale was rated on a five-point scale ranging from 1=never detected to 5 = always detected. Perceived severity of formal punishment is measured by capturing the most common reaction of the person in authority to the participation in each of these behaviors. The possible response choice for each item of all dimensions of CWB scale included 1-ignore/ do nothing, 2-consult/ discuss, 3-warn/ reprimand, 4-minor punishment, 5-decision to discharge/ dismiss. Perceived informal work group sanction was measured by capturing the most common reaction of coworkers to their participation in each of these behaviors. Each item of all dimensions of CWB scale was rated on a five-point scale ranging from 1-encourage, 2-do nothing, 3-discourage, 4-avoid the person, 5-inform the person in authority.

Demographics: The survey measure was designed to capture only basic demographic details like age, gender, marital status, education, tenure which would further help our analysis and interpretation of data. These are used as control variables.

Procedure

Data was collected via questionnaires that were administered and completed during company time and returned in sealed envelopes. The respondents were explained about the procedure to complete the questionnaire and also they were made aware that there is no right or wrong answers and they should only choose among the given options according to their perception. The respondents were assured of confidentiality and informed that the information would be used for research purpose only. In order to maintain anonymity and due to the sensitive nature of questions relating to CWB, we followed the recommendations of Spector et al., (2006) and limited our collection of demographic data. On an average the respondents took 20-25 minutes to complete the questionnaire.

DATA ANALYSIS AND RESULTS

To begin with, as a part of preliminary data analysis, independent sample t test is carried out to determine whether the behaviors of misusing time and resources vary with respect to demographic variables (which are the control variables in further statistical analysis). Further,

the respondents are grouped into 3 categories based on tenure and one-way ANOVA is used to check the significant differences in these behaviors across tenure. This is followed by multiple regression analysis that focuses on the stated objectives of the study. The results of these analysis are discussed below.

There is no significant statistical differences in the groups in the context of misuse of time and resource across age, gender and marital status. A significant difference is observed between respondents who are below graduation and respondents with graduation and above at 1% significance level. Further, it implies that respondents with graduation and above, misuse time and resources more than the respondents who are below graduation.

Table 1: Independent sample t test of misuse of time and resources with respect to demographic variables.

Demographic variables	Categories	N	Mean	SD	P-Value
Age	18-30	437	1.88	0.70	0.366
	Above 30	280	1.84	0.69	
Gender	Male	610	1.87	0.70	0.536
	Female	109	1.83	0.68	
Marital Status	Single	354	1.89	0.73	0.387
	Married	365	1.84	0.67	
Education	Below Graduation	321	1.69	0.64	0.000**
	Graduation and Above	398	2.00	0.71	
Industry	Manufacturing	621	1.77	0.65	0.000**
	IT	98	2.43	0.71	
Domain	Shop-floor	301	1.67	0.64	0.000**
	Office	418	2.01	0.70	

Misuse of time and resources shows a significant difference between manufacturing and IT industry at 1% significance level. The mean values indicate that respondents from IT industry misuse time and resources more than the respondents from manufacturing industry. These behaviors varies with the domain of work. The mean values for respondents who work in office are significantly higher than that of those who work on shop floor. Thus it can be inferred that the respondents who work in office misuse time and resources more than those who work on shop floor.

ANOVA of different dimensions of CWB with respect to Tenure

ANOVA is used to verify if misuse of time and resources varies with tenure of the respondent. In this study, the respondents are grouped under 3 categories based on tenure. First category consists of respondents with less than one year of experience in the current organization and this category represents new hires of the organizations. Second category consists of respondents with experience between 1 to 5 years in the current organization and represents employees with moderate experience. The last category consists of respondents with more than 5 years of experience in the current organization and represents employees with a longer tenure in the current organization. The results of ANOVA are shown below.

Table 2 Results of ANOVA – Misuse of time and resources and Tenure

Dimensions of CWB	Source of Variation	Sum of Squares	df	Mean Sum of Square	Observed F	P-Value
Misuse of Time and Resources	Between Groups	4.638	2	2.319	4.754	.009
	Within Groups	349.221	716	.488		
	Total	353.858	718			

Table2 shows that misuse of time and resources significantly varies with tenure. To further understand the pair wise difference in means, the Tukey's multiple comparison test is used. The results are as follows.

Table 3 Tukey's results – Tenure and CWB dimensions

Dimensions of CWB	(I) Tenure	(J) Tenure	Mean Difference (I-J)	Std. Error	Sig.	Observed F	P-Value
						Lower Bound	Upper Bound
Misuse of Time and Resources	<1Year	1-5 years	-.10204	.07150	.327	-.2700	.0659
		Above 5 years	.07759	.07083	.517	-.0888	.2439
	1-5 years	<1Year	.10204	.07150	.327	-.0659	.2700
		Above 5 years	.17963	.05832	.006**	.0427	.3166
	Above 5 years	<1Year	-.07759	.07083	.517	-.2439	.0888
		1-5 years	-.17963	.05832	.006**	-.3166	-.0427

The Tukey's post-hoc comparison (Table 3) of the dimension misuse of time and resources across different categories based on tenure revealed that the respondents with moderate tenure (1-5 years) significantly differ from the respondents with longer tenure (>5 years). The mean difference indicates that respondents with moderate tenure misuse time and resources than compared to longer tenure respondents. However, there is no significant difference in this CWB dimension between new hires (<1 year) and respondents with moderate tenure (1-5 years) and also between new hires and respondents with longer tenure (above 5 years).

Multiple Linear Regression Analysis**Table 4: Influence of negative emotions and perceived organizational control environment on Misuse of time and resources: Multiple Linear Regression Analysis****Results**

	Stardardized Model Coefficients	P-Value	VIF
(Constant)		.000***	
Industry	.189	.000***	1.338
Domain	.113	.032**	2.586
Age	.060	.303	3.114
Gender	-.047	.180	1.130
Marital status	-.083	.062*	1.845
Edu2	.019	.720	2.614
OrgExp	-.020	.699	2.376
Angry	-.005	.901	1.329
Anxiety	.006	.882	1.449
Boredom	.009	.820	1.467
Depression	-.027	.507	1.519
Discouragement	.165	.000***	1.570
Disgust	.011	.773	1.435
Fatigue	.072	.043**	1.190
Fright	-.036	.337	1.330
Fury	.086	.027**	1.412
Gloom	.022	.563	1.384
Certainty of detection	.021	.539	1.075
Perceived severity of punishment	-.038	.330	1.404
Perceived work group sanction	-.227	.000***	1.440
Model Statistics			
Number of observations	719		
R Square	0.253		
Adjusted R Square	0.231		
F Statistics	11.763		
P- Value	0.000***		

*: Significance at 0.1 (90 %), **: significance at 0.05(95%), ***: significance at 0.01(99%)
It can be observed (Table 4) that the obtained F value of 11.763 is significant (pvalue=0.000). This shows that the model is useful in explaining misuse of time and resources using negative emotions and perceived organizational control environment as predictor variables. The obtained R square value of 0.253 shows the goodness of fit. The model explains 25.3% of variance of the dimension “misuse of time and resources” being explained by all the factors. This model yields seven significant beta coefficients. Significant negative emotions in the model are discouragement, fatigue and fury. These emotions show a positive correlation with misuse of time and resources. The beta coefficients of these three negative emotions indicate that the emotion discouragement has more influence on these behaviors than compared to fatigue and fury. Discouragement has got standardized beta value of 0.165 and p value of 0.000 which is significant at a significance level of 1%. The standardized beta coefficient of fatigue is 0.072 and p value of 0.043 which is significant at a significance level of 5%. Fury has a beta value of 0.086 and p value of 0.027 which is significant at a significance level of 5%. This indicates that emotions like discouragement, fatigue and fury encourage misuse of time and resources in an organization. In this model perceived informal workgroup sanctions has a highest beta coefficient of 0.227 among all the significant coefficients. It shows a significant negative correlation with misuse of time and resources at 0.01 degrees of significance. It demonstrates that behaviors pertaining to misuse of time and resources at work reduces to the extent it is disapproved by the fellow employees.

DISCUSSION

This study was intended to investigate the extent to which negative emotions influences the behavior of misusing time and resources in organizations. Prior studies have termed all the negative emotions collectively as frustration. In this study we have made an attempt to look microscopically at the effects of discrete negative emotions and perception of the organization control environment on these behaviors. The results of the study present several interesting insights.

First, the t-test results reveal that shop floor employees demonstrate less of misuse of time and resources than compared to employees who work in office environment. Shop floor is an area of an organization where people work on machines. Due to the nature of work and the visibility of the work progress, shop floor employees may not get much opportunity to exhibit these

behaviors. Education level of majority of the shop floor employees will be below graduation and almost 50% of respondents from manufacturing industry work on shop floor. Hence the category of respondents whose education level is below graduation and the category of respondents who work in manufacturing industry also show less of these behaviors than their counterparts.

Further, it was found that not all negative emotions have an effect on misuse of time and resources. Discouragement, fatigue and fury were the emotions that were positively relating to these behaviors. It shows that the organizational events that reduce the employee's confidence with the organization and discourage them might motivate them to misuse organization time and resource. These kinds of events may trigger employee to psychologically withdraw from the organizational situation. A study conducted by Spector (1978) also suggests that psychological withdrawal results in detachment, absence or reduced effort. Further, the results show fatigue to be influencing misuse of time and resources. Fatigue which is a subjective feeling of tiredness which can have both physical and mental causes for it can encourage these behaviors. Some organizational situations like lack of proper direction to perform the task or lack of required support systems to execute the job which makes an employee feel he needs to overexert to complete a job can induce a feeling of fatigue. In addition, some characteristics of the task/job like being monotonous, leading to physical strain (e.g. Work by standing for too long) may also encourage the employees to exhibit these behaviors quite often than required. Furthermore, the study results also show that the emotion fury influences misuse of time and resources. Prior literature relates frustration with acts of aggression, abuse and sabotage (Fox & Spector, 1999). These studies further insist that employees rarely exhibit these acts directly or overtly. Instead they display their frustration through covert acts like wasting of time and materials, the dirtying or defacing of the work environment, and the withholding of output. The relationship between fury and misuse of time and resources can be thus justified as passive-aggressive retaliation towards the organization.

The results show that perceived informal workgroup sanctions to be significantly correlating with misuse of time and resources. Whereas, both certainty of detection and perceived severity of punishment were not found to be significant in relation with these behaviors. This ascertains the importance of informal sanctions in an organization. Though the formal sanctions like verbal and written warnings, dismissal, and demotion are important in defining employee behavior at work, informal social sanctions are much more important as they shape the normative behavior of employees in an organization. This result is in line with prior studies

that emphasizes the importance of informal social sanctions by claiming that formal sanctions work more effectively along with informal social sanctions (Parilla et al., 1988; Fine et al., 2010). This finding presents an interesting practical implication of creating a pro-organizational social environment where in any behavior that harms the organization or its members by an employee is not tolerated by the fellow workers. This would be an effective way in which any deviant behavior can be reduced in organizations.

CONCLUSION

This study identified 3 discrete negative emotions namely discouragement, fury and fatigue as major influencing factors of the behavior of misusing time and resources in any organization. Further the study has also ascertained the importance of perceived informal workgroup sanctions in shaping normative behavior of employees in an organization.

The extant literature demonstrates the influence of negative emotions on misuse of time and resources. However, majority of the studies show them as mediating factor between organizational situation and behavior. Further the conceptualization of these negative emotions are limited as a function of single variable though it consists of different individual emotions like anger, anxiety and depression and the like.

In addition, literature has identified the influence of individual's perception of organization control environment on their behavior (Fox and Spector, 1999; Spector and Fox, 2002). However, no substantial work has been carried out considering all possible factors that defines the perception of organization control environment. At most studies have considered the influence of the perception of likelihood of being caught and punished. In this study we have considered certainty of detection, perceived severity of formal punishment, and perceived workgroup sanctions to define perceived organizational control environment.

The results of this study highlight emotions such as discouragement, fury and fatigue, and perceived work group sanction as vital influencing factors that affects the behavior of misusing organizational time and resources. This understanding further helps the practitioners to develop effective interventions to reduce these behaviors in organizations.

The study uses job-related affective well-being scale to measure negative emotions that may not represent the entire range of negative emotions at work. This study was based on the self-report survey method. Though much care was taken during the survey, the response could suffer little effects of social desirability factor.

This study can be further extended to trace back these discrete emotions to their causal factors in organizational context. Thus identifying what causes these emotions in the organization can further help to develop suitable interventions to reduce these behaviors.

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Technology & Operations and Service Management

A Conceptual Model of Factors Affecting the Satisfaction of Online Customers

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Abstract

Customer satisfaction has been identified as an important phenomenon in relation to online shopping. Therefore, the investigation of what cause customer satisfaction is becoming paramount for online businesses. Although prior studies have examined this area, there is no agreement among them as to what really affects online customer satisfaction. Further, there are contradictory findings. Thus, previous studies remain broad and appear relatively fragmented. Therefore, the purpose of this study is to develop a conceptual model to identify the determinants which would better reflect online customer satisfaction. A comprehensive literature review was conducted to identify the determinants of customer satisfaction in an online context. The literature review revealed that there are forty-five determinants which have been tested by different researchers. Amongst them, the researchers selected the most cited five determinants to develop the conceptual model. Those determinants included: Website design, Security perception, Customer service, Product information quality, and Purchasing process convenience. A conceptual model was developed illustrating the relationship between aforementioned determinants and online customer satisfaction. The validity of the model will be tested statistically in future research.

Keywords: Customer satisfaction, E- satisfaction, Online shopping

INTRODUCTION

The technological advancements and the Internet have resulted in proliferation of online shopping activities. This provides many opportunities for businesses to create and retain the relationships and interactions with the customers (Pappas et al., 2014). Online shopping or electronic retailing has captured the attention of many retailers since it has been established as an alternative channel in combination with traditional offline retail channels (Rowley, cited in

Harn et al., 2006). Thus, online shopping has posed challenges for traditional offline channels and it has reshaped the customers' purchasing habits.

The elimination of the time and location constraints is considered to be the main feature that distinguishes between online shopping and the traditional shopping format (Sheth and Sisodia, as cited in Chiang and Dholakia, 2003). According to Pentina et al. (2011), online shopping is playing a prominent role in global marketplace since it empowers the customers by providing them with more rich information.

The Internet offers many benefits to customers as it makes online shopping activities more efficient and effective (McGaughey and Mason, as cited in Momtaz et al., 2011). Customers have the opportunity to purchase products at anytime and anywhere. Online shopping is considered as a user friendly method compared to in store purchasing since they can fulfill their requirement just with a click of a mouse without leaving their home.

Even though the online mechanisms may provide easy to use and efficient methods of shopping (Momtaz et al., 2011), the customers may not opt for them if those mechanisms do not meet their expectations. Customers usually have a particular level of expectation in relation to a product or service. When expectations match with the performance, it is said that customers are satisfied, whereas the customers are dissatisfied when expectations are lower than the performance (Swan and Combs, 1976). In general, a highly satisfied customer stays loyal to the company for a longer period of time (Williams and Naumann, 2011). They tend to purchase more when company introduce new products, spread positive word of mouth about the company and its products, offer new ideas to the company, provide less attention towards competing brands and less sensitive to the price (Kotler and Keller, 2012). When the customer is satisfied with a particular online or offline store, there is a high tendency that he or she will shop again from that store.

Alternatively, customer dissatisfaction signals about the fact that service encountered was not matched with the expectations (Churchill et al., 1982). Customer dissatisfaction will lead to loss of customer loyalty, which in turn results in discontinuity of subsequent transactions and repeat purchases by that customer (Moriuchi and Takahashi, 2016). Further, it has been identified that customer dissatisfaction arise as a result of service failure or feeling of service

unfulfillment. Customer dissatisfaction has been identified as a significant predictor of customers' switching behavior (Bougie et al., 2003)

When considering the above scenario, it is apparent that customer satisfaction is a very important factor which would determine the attraction of customers to an organization and its products and services. Further, it is apparent that customer satisfaction is important for retention of those customers with the organization in the long run. The concept of customer satisfaction and the resultant customer retention are critical for both online and offline businesses. Accordingly, the organizations would be interested in knowing the factors which can enhance the customer satisfaction.

Even in the Sri Lankan context, the Internet penetration is growing rapidly. According to statistics, during 2016, the Internet penetration of Sri Lanka has increased by 30% and the number of Internet users has increased up to 6.1 million due to the widespread subscriptions of cellular mobile connections, broadband and dial up Internet connections (Digitalmarketer.lk, 2018). Further it was found out that there is a significant growth in domestic e-commerce sites during last few years which provide the opportunity for consumers to purchase a large variety of consumer products including groceries, apparel and electronics (export.gov, 2018).

Previous research examined customer satisfaction from different perspectives and in different contexts. While "price" of a product or service has been found as an influencing factor for customer satisfaction (Khan et al. 2015), "price on the Internet" has a different effect for organizations (Pham and Ahammad, 2017). Price transparency on the Internet facilitates customers to compare prices among different vendors much easily. Comparison of prices has become much easier due to the availability of "price comparison sites" (Bodur et al., 2015). Customers can easily switch between different vendors with a few mouse clicks with minimum time and effort. Consequently, the price transparency has increased the competition between online vendors to new heights and naturally led to a price war between vendors to attract more customers for them (Grewal et al., 2004). When there is a price war between online vendors, there is no doubt that it is going to affect their profits and also very survival in the business.

Therefore, businesses are turning to other options and factors to increase customer satisfaction, and customer loyalty, which would help an organization to retain those customers in the long run. Customer retention helps a business to attract repeat purchases from existing customers

and consequently increase their revenue as well as profits. Thus, past researchers have looked at a variety of factors, other than price, which would increase customer satisfaction. Accordingly, a research study conducted in Greek online shopping context have identified product information quality, user interface quality, service information quality, purchasing process convenience, security perception and product attractiveness as the significant determinants of customer satisfaction (Madininos and Theodoridis, 2010). Another study done by Trong et al. (2014) have found website design, merchandise attributes, transaction capability, security/privacy, payment, delivery, customer service as the significant predictors of online customer satisfaction. Additionally, a recent study conducted by (Tandon et al., 2017) have revealed website functionality and perceived usefulness as factors leading to customer satisfaction in an online shopping environment.

However, analysis of previous research indicated that the findings are inconsistent. For instance, Chen et al. (2012) found that website design is the most powerful independent variable which influence customer satisfaction in online shopping environment. In contrary to this study, Ranjbarian et al. (2012) have identified that there is no significant association between website design and customer satisfaction. Further, Maditinos and Theodoridis (2010) identified that product information quality is highly related to the overall customer satisfaction. As oppose to this result, Evanschitzky et al. (2004) found that product information quality is not a significant determinant of online customer satisfaction.

The above discussion indicated that there is no agreement about the specific factors influencing customer satisfaction. Therefore, the purpose of this study is to identify the factors that affect customer satisfaction and to develop a conceptual model depicting the relationships between identified factors and customer satisfaction.

Although there were studies to identify the factors affecting the customer satisfaction in an online shopping context, the researchers were unable to find a single research in the Sri Lankan context. Therefore, it is worthwhile examining the situation in Sri Lanka as it would contribute to the theory as well as provide practical implications to business, especially for Sri Lankan online vendors, to better address the area of customer satisfaction.

LITERATURE REVIEW

Customer Satisfaction

Customer satisfaction is identified as one of the most examined constructs in marketing literature. This plays a major role in competitive environment because of its ability to retain the existing customers and introduce new customers. (Tandon et al., 2017). Kotler and Keller (2012, p.128) identified satisfaction as “a person’s feeling of pleasure or disappointment which occurs as a result of the comparison between product or service performance and expectation”. Another view point was provided by Oliver (2015, p.8), where he defined customer satisfaction as the “consumer’s fulfillment response. It is a judgment related to a product/service feature, or the product or service has actually provided (or is providing) a pleasurable level of consumption-related fulfillment”. Giese and Cote (2000) stated that customer satisfaction encompasses three basic components: *a response* (emotional or cognitive) pertaining to a particular *focus* (expectations, product, consumption experience, etc.) determined at a particular *time* (after consumption, after choice, based on accumulated experience, etc.).

According to expectation-disconfirmation paradigm (Oliver, 1980), satisfaction judgments are derived as a result of consumers’ perception on the difference between product performance and their predictions of performance. Further, it has identified that positive disconfirmation leads to high satisfaction whereas negative disconfirmation reflects the opposite effect (Parker and Mathews, 2001). In fact, the satisfaction depends on the offer’s performance in relation to customer expectation and in turn, customer expectation is derived through their past buying experience, advice of friends and associates and information and promises given by marketers and competitors (Kotler, as cited in Lin, 2003).

However, in this research, customer satisfaction construct is mainly identified as the satisfaction of the customer in relation to his/her previous purchasing experience on online shopping. According to Flavián, et al. (2006) user satisfaction depends on the fulfillment of customer expectations. Therefore, it is important to undertake detailed analysis on the requirements of web site user. Also the attention need to be given on providing customers with adequate amount of information, which facilitates the acquisition of required knowledge, more personalization, and closer customer attention. Such facilitations lead to an increase in the level of customer satisfaction.

Benefits of Customer Satisfaction

Customer satisfaction is one of the essential factors in an online environment due to several reasons. Satisfaction has been identified as a good predictor of future purchasing behavior (McQuitty et al., 2000). Similarly, Sanchez-Gracial et al. (ascited in Lin and Lekhawipat, 2014) stated that satisfied customers are expected to repurchase more in the future than dissatisfied customers. Therefore, in an online environment, customer satisfaction plays a significant role by assisting decision making of customers, which in return leads to repurchase behaviors and repeat purchases (Gupta and Kim, ascited in Lin and Lekhawipat, 2014)

According to Bhattacharjee (2001), greater believability is associated with the personal experience. He also stated that satisfied customers are considered to be less costly and they become more effective communication channels in spreading positive word of mouth about the organization. Further, Howat & Crilley (ascited in Biscaia et al., 2017) found that when customers are satisfied they tend to increase the usage of service and recommend the business and its services to others enabling customer retention. In addition, it has identified that the satisfaction on quality of online service offered, determines the success or failure of the online business (Reichheld & Schefer, as cited in Hsu, 2008). When customers are dissatisfied with the service offered by an online retailer, they tend to discontinue their purchases with the company and disseminate negative information to the potential customers (Hsu, 2008). He further stated that the negative experience a customer had with a particular retailer can easily be shared among potential customers in the online context, since customers have different platforms to post their reviews or feedbacks about the online retailers.

Also, Anderson et al. (1994) stated that customer loyalty depends on customer satisfaction and when loyalty of the current customers increases, it results in more repurchases in the future. This will increase the profitability of the firm by ensuring steady stream of future cash flows. Therefore, it can be stated that customer satisfaction through loyalty leads to higher level of revenue and better financial performance for businesses (Eklof et al. 2018).

Factors influencing Online Customer Satisfaction

The above discussion revealed that customer satisfaction provides various benefits to businesses, making it an extremely important factor to be considered by any organization. Consequently, various researchers have attempted to identify the determinants of customer satisfaction. As the usage and demand for online transactions have increased recently, more attention has been focused on factors leading to satisfaction of online customers. In this section research done by different researchers in relation to online customer satisfaction is discussed.

Cho and Park (2001) have developed an Electronic Commerce User-Consumer Satisfaction Index (ECUSI) by incorporating the instruments relevant to consumer satisfaction, user information satisfaction and electronic commerce literature. Further, Kim (2004) in his study developed an Electronic Commerce Customer Satisfaction Index (ECCSI) using weighted sum model. This analysis suggested an acceptable model providing generalizable set of measures which can be used to evaluate online satisfaction.

Szymanski and Hise (2000) examined the possible antecedents to e-satisfaction. They developed the conceptual model based on the data collected using focus group interviews and it was empirically tested with online shoppers. The effect of convenience, product offering, product information, site design and financial security on e-satisfaction level was estimated using correlation matrix and regression coefficients. Convenience, product information, site design and financial security had statistically significant effect on online customer satisfaction.

Evanschitzky et al. (2004) replicated the study done by Szymanski and Hise (2000) to examine the consumer satisfaction with Internet retail shopping and Internet financial services sites by using a sample of German consumers. The study found that, amongst the variables tested convenience, product offering, site design and financial security had significant effect on e-satisfaction.

Schaupp and Bélanger (2005) examined the role of technology, product and shopping factors on online customer satisfaction. The study examined three categories of factors: Technological factors (security, usability and site design, privacy); Shopping factors (convenience, trust and trustworthiness, delivery); and Product factors (merchandising, product value, product

customization). Results of this study indicated that privacy, merchandizing and convenience as the significant factors that affect online customer satisfaction.

Lin (2007) examined the effect of system quality, information quality and service quality on customer satisfaction. In order to measure this effect, a total of seven variables were used. System quality included website design, interactivity variables; Information quality included informativeness, security variables and Service quality included responsiveness, trust and empathy variables. Website design, interactivity, informativeness, security, responsiveness and trust had significant influence on customer satisfaction.

Yang and Tsai (2007) examined the effectiveness of e-service quality in explaining the variance in the e-shoppers' satisfaction and loyalty. Seven independent variables; efficiency, systems availability, fulfillment, privacy, responsiveness, compensation and contact, were tested in this study. Study revealed that all the independent variables tested had strong and significant effect on customer satisfaction.

Kim and Stoel (2004) have developed a model to determine the significance of website quality dimensions on shoppers' satisfaction. They examined the effect of Web appearance, entertainment, information fit-to-task, transaction capability, response time and trust on online customer satisfaction. The results revealed that information fit-to-task, transaction capability and response time as having significant effect on overall customer satisfaction.

Liu et al. (2008) have proposed a model to identify the factors influencing Chinese customers' online shopping satisfaction. They examined the variables information quality, website design, merchandise attributes, transaction capability, response, security/privacy, payment, delivery and customer service to identify their effect on overall customer satisfaction. The results of the analysis indicated that customer service, delivery, information quality, website design, merchandise attributes, transaction capability, security/privacy, and payment have a significant and positive effect on online customer satisfaction in China.

An effort has been taken by Chang and Chen (2009) to study the relationship among interface quality, perceived security and customer loyalty. As a part of the conceptual model, the effect of interface quality and perceived security towards customer satisfaction was tested

and revealed that interface quality and perceive security significantly and positively affect customer satisfaction.

The role e-tail quality, e-satisfaction and e-trust in online loyalty development process was examined by Kim et al. (2009) using four e-tail quality dimensions. This included website design, security/privacy, fulfillment/reliability and responsiveness. Study revealed that only website design, security/privacy and fulfillment/reliability dimensions significantly and positively influence the e-satisfaction.

The determinants of online customer satisfaction and the resultant behavioral intention were tested by Zeng et al. (2009) using online customers. They tested the effect of customer service, fulfillment/reliability, ease of use, product/service portfolio and security on online customer satisfaction. The results of the analysis demonstrated that only customer service, fulfillment/reliability, ease of use and product/service portfolio were significantly related with online customer satisfaction.

Alam and Yasin (2010) investigated the influence of website design, reliability and product variety and delivery performance on customer satisfaction of online shopping. This analysis revealed that website design, reliability, product variety and delivery performance were significantly associated with the online customer satisfaction.

Another research was conducted by Maditinos and Theodoridis (2010) to empirically validate several literature-based constructs on customer satisfaction in Greek online shopping context. The product information quality, user interface quality, service information quality, purchasing process convenience, security perception, product attractiveness and user participation were tested against e-commerce customer satisfaction. Results of this study indicated that product information quality, user interface quality, service information quality, purchasing process convenience, security perception, and product attractiveness had significant influence on overall satisfaction.

The factors affecting Saudi customers' trust, satisfaction and loyalty towards B2C ecommerce were investigated by Eid (2011). Here, user interface quality, information quality, perceive privacy and perceive security were tested in order to identify their effect of e-customer trust and

e-customer satisfaction. Study revealed that only interface quality and information quality created significant effect on customer satisfaction.

Gelard and Nagahdari (2011) have presented a new framework for customer satisfaction related to electronic commerce. Six independent variables; convenience, merchandising, site design, security, company and serviceability were tested to identify their effect on online customer satisfaction. Results of this study revealed that customer satisfaction is significantly affected by all the aforementioned variables.

Al-Kasasbeh et al. (2011) have examined user satisfaction with e-services using independent variables; website design, website navigation and website personalization. Study indicated that website design and website navigation are significantly related to the e-service satisfaction.

Another study has been conducted by Lin et al. (2011) to ascertain the factors that affect online consumers' satisfaction in Taiwan. This study tested the significance of information quality, system quality, service quality, product quality, delivery quality and perceived price on customer satisfaction. Results of the study revealed that online customer satisfaction was positively and significantly affected by information quality, system quality, service quality, product quality, delivery quality and perceived price.

A study has been done by Anand (2007) in order to examine the role that online convenience, merchandising, serviceability, site design and financial security play in e-satisfaction. The results of the analysis confirmed that convenience, serviceability, site design and financial security had statistically significant influence on online satisfaction level.

The same set of variables used by Anand (2007) were tested by Rajbarian et al. (2012) in order to identify their effect on e-satisfaction of Iranian customers. This study also revealed that e-satisfaction is significantly influenced by the convenience, merchandising, site design, security and serviceability aspects of e-shopping.

Guo et al. (2012) have investigated the determinants of customer satisfaction towards online shopping in China. A total of eight independent variables; website design, security, information quality, payment method, e-service quality, product quality, product variety and delivery service were tested in this study. The results of the analysis have highlighted that all the eight

variables are positively and significantly related to the Chinese customer satisfaction in online shopping context.

In the study of Polites et al. (2012) they examined the effect of information quality, system quality, perceived usefulness, perceived value and trust on e-satisfaction and site stickiness. The results indicated that information quality, system quality, perceived usefulness and perceived value were significant predictors of e-satisfaction.

Chen et al. (2012) investigated the influence of trust, information quality, price, privacy, payment, website design and delivery on online customer satisfaction. Study revealed that all tested variables had significant effect on online customer satisfaction.

The Antecedents of online customer satisfaction and customer loyalty in the Indonesian online store context were tested by Dharmesti and Nugroho (2012) using independent variables; information quality, website design, product variation, transaction ability, response, security/privacy, payment system, delivery and customer service. The results demonstrated that only the information quality, security/privacy, payment system, delivery and customer service were significantly related with online customer satisfaction.

Bellaaj (2013) tested the effect of web system quality, web content quality and web service quality on online customer satisfaction. All the three variables had positive and significant effects on online customer satisfaction.

Another research has been conducted by Trong et al. (2014) to evaluate the factors influencing customer satisfaction towards online shopping in Vietnam. Constructs including website design, merchandise attributes, transaction capability, security/privacy, payment, delivery and customer service were tested. The results of this study confirmed the significant relationship existed between all the tested constructs and customer satisfaction.

Khan et al. (2015) used an empirical study to identify perceived factors affecting customer satisfaction which in turn influence re-purchase intention in e-stores. They tested the influence of perceived benefits and perceived risks on customer satisfaction. Perceived benefits examined in this study included price benefits, convenience benefits, product information, and return policy benefits. Perceived risks examined included product risk, financial risk, and

delivery risk. Study revealed that all the perceived benefits and perceived risks identified, have significant and positive influence on customer satisfaction.

A recent study done by Ting et al. (2016) studied the association between E-service quality, E-satisfaction and E-loyalty of online shoppers in Malaysian business to consumer market. Consequently, they measured the effect of efficiency, privacy and trust, fulfilment, responsiveness, contact and website design on e-satisfaction of online customers. The results of the study indicated that all the above independent variables identified, positively and significantly affect e-satisfaction of online shoppers.

Another recent study conducted by Tandon et al. (2017) aimed at analyzing the key determinants that influence customer satisfaction towards online shopping in India. They examined the effect of website functionality, Perceived usefulness and Perceived usability on customer satisfaction. Study revealed that website functionality and perceived usefulness have significant and positive effects on online satisfaction.

In the Sri Lankan context, several attempts were there to study customer satisfaction in relation to areas like online banking, Internet banking, mobile banking etc. In general, most of the studies have tested the effect of variables such as security, customer service, price, convenience etc. on customer satisfaction. Silva and Abeysekara (2012) examined the influence of Internet banking on customer satisfaction. In this research, authors have considered the technological aspects, staff assistance, experiential convenience and promotional aspects as the independent variables. The study proved that technological aspects, staff assistance, experiential convenience and promotional aspects are significant determinants of customer satisfaction with Internet banking.

Thilakarathne and Abeysekara (2016) studied customer satisfaction in mobile money services. They have used customer care, convenience, service convenience and economical price perception as independent variables in their study. This study revealed that economical price perception, improved security and quality of customer care as significant determinants of customer satisfaction.

Summary of Determinants of Online customer satisfaction

The determinants of customersatisfaction identified based on the extensive review of literature is presented in Table 1.

Table 22: Summary of determinants of online customer satisfaction

No.	Determinant	Literature citation	Citation count (n = 31)	
			Frequency	Percentage
01	Website design	Szymanski & Hise (2000); Cho & Park (2001); Evanschitzky (2004); Kim(2005); Kim & Stoel (2004); Lin (2007); Anand (2007); Liu et al. (2008); Kim et.al.(2009);Chang & Chen (2009) ; Alam & Yasin (2010), Maditinos and Theodoridis (2010); Al-Kasasbeh et al.(2011); Eid (2011); Gelard & Negahdari (2011);Chen et al.(2012), Guo et al. (2012); Dharmesti & Nugroho (2012);Ranjbarian et al. (2012); Trong et al.(2014); Ting et al. (2016); Tandon et al.(2017)	22	76%
02	Security	Szymanski & Hise (2000); Evanschitzky (2004); Kim(2005); Schaupp & Belanger (2005); Lin (2007); Anand (2007); Liu et al. (2008);Zeng et al. (2009); Kim et.al.(2009) ; Chang & Chen (2009); Maditinos and Theodoridis (2010); Eid (2011); Gelard & Negahdari (2011); Guo et al. (2012); Dharmesti	18	62%

		& Nugroho (2012);Ranjbarian et al. (2012); Trong et al.(2014) ; Thilakarathne & Abeysekara (2016)		
03	Customer service	Cho & Park (2001); Kim (2005); Anand (2007); Yang & Tsai (2007); Liu et al. (2008); Zeng et al. (2009); Gelard & Negahdari (2011) ; Lin et al.(2011); Ranjbarian et al. (2012); Guo et al.(2012); Silva & Abesekara (2012); Trong et al.(2014); Dharmesti & Nugroho (2012); Bellaj (2013); Thilakarathne & Abeysekara (2016); Ting et al. (2016)	16	55%
04	Product Information Quality	Szymanski & Hise (2000);Cho & Park (2001); Evanschitzky (2004); Kim (2005); Lin (2007) Liu et al.(2008); Maditinos and Theodoridis (2010); Eid (2011) ; Lin et al. (2011) Gelard & Negahdari (2011); Chen et al. (2012); Polites (2012) Guo et al.(2012) ; Dharmesti & Nugroho (2012); ; Khan (2015)	15	52%
05	Purchasing process convenience	Szymanski & Hise (2000); Cho & Park (2001) ;Evanschitzky (2004) ; Kim (2005) ; Schaupp & Belanger (2005) ; Anand (2007) ; Maditinos	12	41%

		and Theodoridis (2010); Gelard & Negahdari (2011); Ranjbarian et al.(2012);Silva & Abeysekara (2012); Khan (2015); Thilakarathne & Abeysekara (2016)		
06	Delivery	Cho & Park (2001); Kim (2005);Schaupp & Belanger (2005); Liu et al. (2008); Alam & Yasin (2010); Lin et al. (2011); Chen et al.(2012); Guo et al.(2012); Dharmesti & Nugroho (2012) ; Trong et al. (2014)	10	34%
07	Response	Kim & Stoel (2004); Lin (2007); Yang & Tsai (2007); Liu et al. (2008); Kim et al. (2009); Dharmesti & Nugroho (2012; Ting et al. (2016)	7	24%
08	Payment	Cho & Park (2001); Kim (2005); Liu et al. (2008); Guo et al.(2012); Dharmesti & Nugroho (2012); Chen et al. (2012), Trong et al. (2014)	7	24%
09	Merchandising	Cho & Park (2001); Schaupp & Belanger (2005); Anand (2007); Liu et al. (2008) ; Ranjbarian et al. (2012) ; Trong et al. (2014)	6	21%
10	Price	Cho & Park (2001); Kim (2005); Lin et al. (2011) ; Chen et al.(2012) ; Khan (2015) ; Thilakarathne & Abeysekara (2016)	6	21%

11	Privacy	Schaupp & Belanger (2005); Yang & Tsai (2007); Eid (2011); Chen et al. (2012); Ting et al. (2016)	5	17%
12	Fulfillment/reliability	Yang & Tsai (2007); Kim et al. (2009); Zeng et al. (2009); Alam & Yasin (2010); Ting et al. (2016)	5	17%
13	Transaction capability	Kim & Stoel (2004); Liu et al. (2008); Dharmesti & Nugroho (2012); Trong et. al. (2014) ;	4	14%
14	Product Offerings	Szymanski & Hise (2000); Evanschitzky (2004);Zeng et al. (2009);Gelard & Negahdari(2011)	4	14%
15	Trust	Kim & Stoel (2004); Lin (2007); Polites(2012); Chen et al.(2012)	4	14%
16	System Quality	Lin et al. (2011); Polites(2012); Bellaj (2013)	3	10%
17	Perceived usability	Schaupp & Belanger (2005); Polites(2012) ; Tandon et al. (2017)	3	10%
18	Product quality	Schaupp & Belanger (2005); Lin et al. (2011); Guo et al. (2012)	3	10%
19	Product variety	Alam & Yasin (2010); Dharmesti & Nugroho (2012); Guo et al.(2012)	3	10%
20	Ease of use	Cho & Park (2001) ; Zeng et al. (2009)	2	7%
21	Product attractiveness	Kim (2005); Maditinos and Theodoridis (2010)	2	7%

22	Service information quality	Maditinos and Theodoridis (2010); Trong et. al. (2014)	2	7%
23	Efficiency	Yang & Tsai (2007); Ting et al. (2016)	2	7%
24	Perceived usefulness	Tandon et al. (2017)	1	3%
25	Navigation	Al-Kasasbeh et al. (2011)	1	3%
26	Personalization	Al-Kasasbeh et al. (2011)	1	3%
27	Company	Gelard & Negahdari (2011)	1	3%
28	Additional information services	Cho & Park (2001)	1	3%
29	Interactivity	Lin (2007)	1	3%
30	Empathy	Lin (2007)	1	3%
31	Perceived value	Polites (2012)	1	3%
32	User participation	Maditinos and Theodoridis (2010)	1	3%
33	Product customization	Schaupp & Belanger (2005)	1	3%
34	System Availability	Yang & Tsai (2007)	1	3%
35	Compensation	Yang & Tsai (2007)	1	3%
36	Time	Alam & Yasin (2010)	1	3%
37	Return policy	Khan (2015)	1	3%
38	Web content quality	Bellaaj (2013)	1	3%
39	Promotional aspect	Silva & Abeysekara (2012)	1	3%
40	Technological aspect	Silva & Abeysekara (2012)	1	3%

41	Information fit to task	Kim & Stoel (2004)	1	3%
42	Entertainment	Kim & Stoel (2004)	1	3%
43	Product risk	Khan (2015)	1	3%
44	Delivery risk	Khan (2015)	1	3%
45	Financial risk	Khan (2015)	1	3%

CONCEPTUAL MODEL

The purpose of this research is to develop a conceptual model to examine the determinants of online customer satisfaction. In order to achieve this objective, a comprehensive literature review was performed. The literature review enabled the researchers to uncover forty-five different determinants of online customer satisfaction (see Table 1). For the purpose of this research, the researchers decided to select the most cited five determinants to develop the conceptual framework. The five determinants have been used by more than 40% of the previous researchers, indicating the importance attributed to these determinants. Hence, in this study, the selection of these five determinants amongst the forty-five determinants identified can be justified. The five determinants of online customer satisfaction chosen for the study include: Website design, Security perception, Customer service, Product information quality, and Purchasing process convenience. Based on the above justification the conceptual model (shown in Figure 1) depicting the relationships between five determinants and online customer satisfaction was developed.

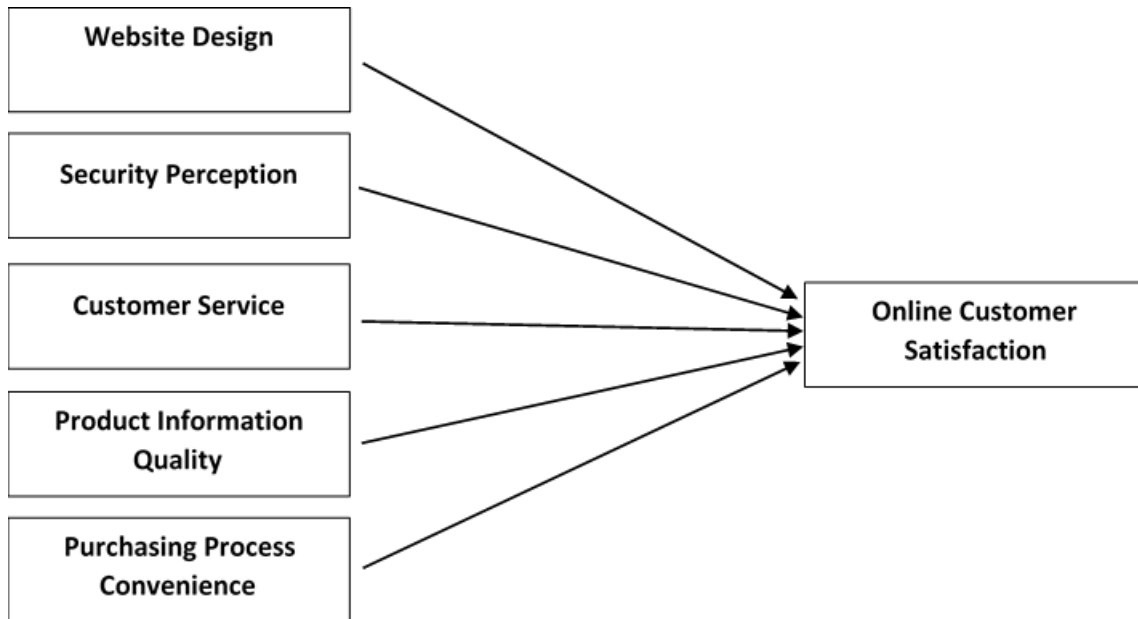


Figure 10: Conceptual Model

CONCLUSION

The objective of this study was to develop a conceptual model to identify the determinants of online customer satisfaction. In order to achieve this objective, a comprehensive literature review was performed. A total of fifty-six research papers were reviewed during this process. Research papers were carefully selected to ensure the validity and reliability of them. The researchers focused on the research papers which were published in well-recognized scientific journals.

Amongst the research papers studied, thirty-one research papers were related to the determinants of online customer satisfaction. Thus, the thirty-one research papers were used in the process of identifying the determinants used in different studies. This process helped the researchers to explore forty-five determinants with different frequencies of usage. After evaluating the forty-five determinants, most commonly cited five determinants, with the highest frequencies were selected to develop the conceptual model. Those five determinants included: Website design, Security perception, Customer service, Product Information Quality, and Purchasing Process Convenience. Finally, the conceptual model was developed depicting the relationship between each of the determinant identified and online customer satisfaction.

FUTURE RESEARCH DIRECTION

The researchers intend to perform a large scale survey to empirically validate the conceptual model developed. Further, the researchers aim to identify the significant determinants of online customer satisfaction in the Sri Lankan context. The study findings will provide important theoretical and managerial implications.

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A Framework for Enhancing Occupational Safety and Health in Cement Manufacturing Industry in Sri Lanka

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Abstract

Occupational Safety and Health (OSH) as the science and art of the anticipating, recognizing, analysing and monitoring of hazards arising in the workplace that could harm the health and well-being of employees. Comparatively in the manufacturing industry, OSH is considered as an essential requirement to achieve expected production targets without any disturbances. Most of accidents, injuries and health diseases are created at working phase in the industry. This has been a significant issue in cement manufacturing industry because Sri Lankan cement manufacturing industry employs large number of employees where many OSH issues are presented due to complexity of the manufacturing process and due to many other reasons. Though the practice of this concept increases over world, very less number of researches have been conducted related to the OSH in the cement manufacturing industry in Sri Lanka. It has become a timely requirement to ensure the safety of the employees who are working in the cement manufacturing industry. Therefore, this study attempts to develop a framework for enhancing OSH in cement manufacturing industry in Sri Lanka.

Initially, a comprehensive literature review was carried out to enlarge the existing knowledge on safety and health issues associated with the employees in the cement manufacturing industry and its effect on workers and society. In order to validate the research finding, semi-structured interviews were conducted among the three-different level of professionals including managerial level, supervisor level and labour level from each case. Collected data from the interviews was structured and analysed with the support of NVivo software. Empirical investigation addressed physical accidents, injuries and various kind of health diseases were the main issues in the cement industry. It was further identified that these issues are occurred by workplace hazards i.e. excessive cement dust, machines with moving parts, heavy vehicle movement etc. and other factors i.e. poor working relationship among workers, risky attitudes and behaviour of the workers etc. Although, plenty of activities have been taken placed to ensure OSH in workplace, some challenges including, fund allocation, ensuring the safety of contract employees, unrealistic production targets, ensuring the safety of customers and other outside parties and negligence of safe work instructions by employees were validated. Finally, a framework was developed based on the empirical research findings to enhancing the OSH in cement manufacturing industry in Sri Lanka.

Key words: Cement Manufacturing Industry, Challenges, Occupational Safety and Health

INTRODUCTION

Occupational Safety and Health (OSH) defined as the science and art of the anticipating, recognizing, analysing and monitoring of hazards arising in the workplace that could harm the health and well-being of employees (Alli, 2008). As per the study of Alli(2008) various types of occupational issues including accidents, diseases and sicknesses are created in work environment. International Labour organisation (ILO) (2016) has published, a worker dies from a work-related accident or disease in every 15 seconds and 153 workers have a work-related accident in every 15 seconds. Further details of ILO (2016), 6300 workers die in every day as a result of work related diseases or occupational accidents. Moreover, economic burden of poor occupational safety and health practices have been estimated at 4 percent of global Gross Domestic Product (GDP) each year as per the statement of ILO (2016). WHO(2001), there are hazards in working environment and workers are exposed to those hazards. Occupational diseases and adverse health conditions can be occurred due to those hazards. Some other factors like unclear tasks allocation, delays in receiving some inputs, and request for rework of some previously completed can also affect to create OSH issues (Banyen , 2016)

When considering the cement manufacturing industry, occurrence of accidents and hazards are frequent and influence to the human health to create various health issues (Town et al., 2016). Quarrying, crushing, clinker production, milling processes at raw mill, cement milling and coal milling, material transport, filtering, storage, loading and delivery of final products, fuel storage activities, are the main steps in the cement production process and various kinds of hazards are created in these steps (Tomar, 2014).

Workers in the cement factories are facing various diseases in breathing, chronic bronchitis, asthma, emphysema, lung cancer, pneumonia, tuberculosis, shortness of breath, cough, wheezing, stroke, chest pain, irregular heartbeat, swelling in legs and feet (not caused by walking), eye irritation, skin allergies, anxiety and fatigue (Sana, Bhat, & Balkhi, 2013). As well physical accidents and injuries are also happened(Rachid, Ion , Irina, & Mohamed, 2015). In addition to these hazards, not practicing and following safety procedures by developing countries in cement factories including lack of accurate information and records of occupational diseases and accidents, lack of effective enforcement system, lack of professional training are identified as major causes for health and safety issues (Town et al., 2016). However, providing a safety and health work environment becomes a timely requirement in the cement manufacturing factories(WBCSO, 2004). While the necessity of OHS identified by the

industrial practitioner, still the practice of concept is poor due to the lack of studies on relevant area. Therefore, this study is aimed to develop a framework for enhancing OSH in cement manufacturing industry in Sri Lanka.

LITERATURE REVIEW

This paper commenced with comprehensive literature review, which basically covered the areas; Occupational Safety and Health (OSH); OSH in Cement Manufacturing Industry; OSH issues in cement manufacturing industry; leading causes of identified OSH issues; and Safety practices to mitigate causes of OSH issues in cement manufacturing industry.

Occupational Safety and Health

Occupational Safety and Health (OSH) is the providing a safe environment with avoiding hazards which affected to create injury or harm to the employees(Western Australia, 2005). It is a very important concept, not only for ensuring the health of workers, also helps to increase productivity, enhance the product quality, maintain the job satisfaction, improve work motivation and upgrade the overall quality of individuals and society(Franklin, 2015). Cost for the work related issues can be directly or indirectly related with the organisation (Mazzolini, 2012). According to, ILO(2016), total costs for the occupational accidents are 4% of the gross national product (GNP)(Hamalainen, Takala, & Saarela, 2006)

OSH in Cement Manufacturing Industry

Among the manufacturing sector, establishment of OSH in cement manufacturing industry due to the nature of cement manufacturing process is being carried out. A considerable attention should be given to the health and safety aspect of the employees in the cement industry.

Cement manufacturing industry

Cement is the major raw material used for preparing concrete and introduced and produced in 1824 in British era. Currently, about 1,700 million tons of cement is produced annually to use for the various types of manufacturing purposes to fulfil various types of physical and chemical requirements(Hokoma, Khan, & Hussain, 2008). Total cement production increased about 73% between 2005 and 2013 from 2310 Mt to 4000 Mt to fulfil global cement requirements(Mikul, 2016). According to Economic and Social Statistics of Sri Lanka, Central Bank Annual Report (2015), Cement is a highly consuming material and total consumption is about 6.4 Mt per annum in currently(Lokugamage, 2016).

Occupational safety and health issues in cement manufacturing industry

When considering about the cement manufacturing industry various types of physical accidents and injuries are happened in various stages of the cement production process. Mainly physical accidents and injuries consisting with fatality accidents, permanent disabilities, loss time injuries and first aid treatment injuries (Rachid, Ion , Irina, & Mohamed, 2015). Most available safety diseases among workers in cement manufacturing industry are the respiratory problems, liver and lung diseases, fatigue and headache(Musa, Bamidele, Salaudeen, Saromi, & Aa, 2012). Workers in cement industry suffer from cancer, breath problems, skin problems and eye problems as a result of not applying adequate of appropriate PPEs (Town, Victor, Atsango, Solomon, & Africa, 2016). In addition to, following diseases are most common to the workers in cement industry i.e. asthma, chronic bronchitis, pneumonia, emphysema, tuberculosis, cough, lung cancers, wheezing, chest pain, swelling in legs and feet, stroke, irregular heartbeat, high blood pressure, fatigue and anxiety (Sana, Bhat, & Balkhi, 2013).

Leading causes of OSH issues in cement manufacturing industry

Various hazards are exposed to workers in cement factories during cement production (Aminian, Aslani, & Sadeghniaat Haghghi, 2014). Sana et al., (2013),exposing cement dust is caused respiratory problems to the workers. Cement cause to create ill health in cement workers including skin, eye contact and inhalation problems (Town et al., 2016). Noise is a common hazard which is generated during the cement manufacturing and production process, when raw materials grinding in milling plants huge amount of noise is generated and damage to the hearing level of maintenance and cleaning works at risky area (Town et al., 2016). Other health workplace hazard in cement manufacturing industry could be identified as machines with rotating and moving parts, vibration, vehicle and traffic hazards, danger atmosphere, toxic chemicals, fire, electrocution, drowning, high temperature, radian hazards and poor work environment (WBCSO, 2004)

There are number of causes for work related accidents in cement plants including, lack of experience, knowledge and motivation, poor working relationships among workers, complex situation in the workplace, lack of communication and awareness, careless activities, urgent operation activities, lack of preventive strategies, lack of awareness of worker's responsibilities, lack of resources to support and deploy for health and safety, inadequate

strategies related to health and safety, lack of involvement of employees, less evaluation of consequences and occupational injuries, lack of awareness of perspectives related to the health and safety, lack of information, financial resources and human resources to effectively manage and improve the health and safety at work (Mounia, Rachid, & Yahya, 2017). According to Town et al. (2016), main causes for OSH issues could be, inadequate supervision of the employees, risky attitudes and behaviours of workers in the work place, less education on safety, not using proper safety harness methods, not adequately provide the safety harnesses, incompetent and unqualified safety officers are provided by the sub-contractors, managers do not consider the basic health and safety of workers employed by the sub-contractors in factory, PPE are not properly used by the workers, providing defective PPE to the workers in factory, equipment in the workplace are not properly used by the workers.

Safety practices to mitigate causes of OSH issues in cement manufacturing industry

Proper management and leadership attributes are most essential to continue safety management practices (Hee & Ping, 2014). Workers should be encouraged to communicate each other about workplace hazards to take appropriate actions to solve work related problems (Connor, Flynn, Weinstock, & Zanoni, 2015). To improve safety conditions in the organisation, management give offers and rewards to the workers. Companies should despite the production-oriented work environment and should give the consideration to acquire safety benefit (Arezes & Miguel, 2003) as cited in (Hee & Ping, 2014). Involvement of the government is significant to regularly improve health and safety conditions in work places and guarantee as less risky environment (Mazzolini, 2012). OSH training programmes are essential for the works to achieve organisation targets with reducing adverse effects (Connor, Flynn, Weinstock, & Zanoni, 2015).

Economics benefits are generated by improving the health and safety in the work place and positively affected for the factories and also for the whole society (Mansour, 2008) as cited in (Town et al., 2016). Health and safety complications in cement manufacturing industry can be controlled by preparing and implementing of safe operating and maintaining procedures, enforcing the safe operating procedures, maintaining safe conditions related to the safe working, giving considerations on environmental conditions, training the workers, providing periodic medical treatments, supervising on using personal protective equipment (Tomar, 2014). Improving management responsibility to supervise the workers about health and safety and management consideration on the health and safety in cement factory are most important

(Town et al., 2016). Risk engineering department in the cement factory involve to use risk engineering practices to control and eliminate risks associated with the cement manufacturing process (Town et al., 2016). Management practices for occupational health and safety are caused to continuously improve and manage the health and safety (Subhani, 2010). Local and government legislations should be followed by the organisation to minimize health and safety issues (Silva, 2011). The following section discusses the method of study adopted in this study.

REREARCH METHODOLOGY

Research methodology can be identified as the systematic way that can be used to achieve the aim and objectives of the research (Kotharri, 2004). This study was commenced with background study to identify the research problem and establish aim, objective, scope and limitation of the research. Then comprehensive literature survey was carried out by referring books, journal articles, and website to enlarge the existing knowledge on health and safety issues associated with the employees in the cement manufacturing and its effect on workers and society.

A qualitative method was followed in this research to achieve the research aim and objectives which allows the researcher to develop an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals (Creswell, 2009). Mainly, opinions and justifications of interviewees were used for the research. In this study, three cases were limited to gather details regarding the research problem due to time constrains. Accordingly, three cases were selected in carrying out the research to fill the defined problem due to time constrains (refer Table 01).

Table 23: Overview of selected cases

Criteria	Case A	Case B	Case C
Production categories	Cement bags and bulk cement	Cement bags and bulk cement	Cement bags and bulk cement
Number of total employees	350	100	80
Following national and international regulations	Factory Ordinance, OSHAS 18001	Factory ordinance OSHAS 18001	Factory ordinance Own standards and regulations

In order to validate the literature findings with regards to Sri Lankan context, altogether twelve semi structured interviewees were conducted among the managerial level, supervisor level and labour level employees in the selected cases (refer Table 02). Further, the QSR.NVivo version 11.0 software which is the most common data analysis software for qualitative method was used to analyse the collected data in the research.

Table 24: Profile of interviewee

Case	Level of the interviewee	Designation	Experience (Years)
A	Manager	Health and Safety Manager (Plant, Quarry and project) - A1	17
		Health and Safety Manager – Training - A2	12
	Supervisor	Health and Safety engineer - A3	1
		Health and Safety Officer - A4	5
	Labour	Technician-Mechanical - A5	9
		Crusher Operator - A6	15
B	Manager	Health and Safety Manager - B1	3
	Supervisor	Electrical and Mechanical Supervisor - B2	9
	Labour	Technician – Quality control - B3	3
C	Manager	Health and Safety Manager - C1	10
	Supervisor	Packing Process Supervisor - C2	9
	Labour	Packing Machine Operator - C3	12

RESEARCH FINDINGS AND DISCUSSION

The findings from selected case studies were discussed under several sub-headings. This section covers the current practices to mitigate the causes of OSH issues, challenges for the enhancement of OSH practices and solutions to overcome those hindrances of enhancement and framework to enhance OSH practice in cement manufacturing industry. Those will be the basis for following discussion (refer Figure 01).



Figure 3: Stages of analysis

OSH Issues in Cement Manufacturing Industry

There are various types of occupational accidents and health diseases can be identified in the cement manufacturing industry. Most of physical accidents and work-related diseases have been disclosed in the literature synthesis and these issues were validated from interviews.

Physical accidents and injuries

Physical accidents and injuries are created in the cement manufacturing industry to the workers during their works thus lead to create direct and indirect financial loss and non-financial effects to the organisations. Following table 3 shows the main type of physical accidents and injuries occurred in Sri Lankan manufacturing industry.

Table 25: Physical accidents and injuries

Accident type	Details about the accident
Fatality accidents	Fatal accidents have been happened during raw material transportation by trains
Permanent disabilities	By heavy machine movement, operation of machine of rotating and moving parts, train operation, working at height
Loss time injuries	By machines with rotating and moving parts, using blasting materials in quarry, falling from height, heavy vehicle movement, excessive temperature and falling from high slopes and high walls in quarry area
First aid injuries	By all above causes, poor working environment including falls and trips, cutting and welding works

Based on literature survey and respondents' opinion during the data collection, physical accidents and injuries can be categorized as fatality accidents, permanent disabilities, loss time injuries and first aid injuries.

Result of empirical investigation, two fatal accidents have been reported in case A except other cases where the permanent disabilities were happened in all three cases due to heavy machine movement. In addition, first aid treatment injuries were frequent due to the careless of workers and the other hand, loss time injuries were recorded by all three cases due to the aforementioned causes (refer Table 3).

Health diseases

In addition to physical accidents and injuries, occurrence of health diseases are considered as major issue in the cement manufacturing industry. Even most of health disease were identified in the literature synthesis, all identified diseases could not find in the selected cases. Table 4 outlined the type of health issues addressed from the selected organisation and the roots behind those issues.

Table 26: Health diseases

Type of disease	Cause of disease
Eye problems	Exposure of cement dust
Breath problems	Exposure of cement dust
Caught	Exposure of cement dust and gasses emitted by blasting in quarries
Wheeze	Exposure of cement dust
Allergic	Exposure of cement dust
Headache	By excessive noise
Faint	By toxic chemicals
Skin problem	By toxic components in cement
Chest pain	By hard working
Swelling in legs	By long time working

Hearing difficulties	By excessive noise
Fatigue	By long time working

Result of research analysis, physical accidents, injuries and health diseases were highlighted as main issues in the cement manufacturing industry. The various types of causes which leading to create these OSH issues will be discussed further detailed following sections.

Causes Leading to Create OSH Issues

Basically, workplace hazards and organisational factors are core leading causes of OSH issues in the cement manufacturing industry. Following sections will be discussed those factors in detailed.

Workplace hazards

In cement manufacturing industry, identified various type of hazards which lead to cause OSH issues in the workplace by literature survey were validated through the empirical investigation thus will be clearly highlighted in Table 5 presented below.

Table 27: Workplace hazards

Type of hazard/ cause	Impact/ issue	Safety practices/ measures
Excessive cement dust	Respiratory problems and eye problems	<ul style="list-style-type: none"> Annually measure dust level by the environment authority. Covering dust sources to reduce dust emission, use of dust masks and respirators, changing bag filters, use of dust collectors and sealing silos are the main safety practices to control effects from the dust.
Excessive noise	Hearing difficulties and headaches due to the continue exposure of excessive noise for long time period	<ul style="list-style-type: none"> Annually measure noise level by Environment Authority. Wear ear plugs during their works in high noise area and restrict the access of high noise areas except authorized people.
Machines with rotating	Causes physical accidents i.e. first aid treatment injuries,	<ul style="list-style-type: none"> Schedule the proper maintenance activities (ex: check the rotating and moving parts of machines). Use of PPEs, provide appropriate machine guarding, work instructions to control physical injuries.

and moving parts	loss time injuries and permanent disabilities	
Vibration	Caused by heavy vehicle and heavy machine and it creates both human and property damages	<ul style="list-style-type: none"> • Conduct routing inspections to identify excessive vibration. • It can be controlled by preventive maintenance activities and follow the user guidance for heavy machine operation.
Dangerous atmosphere	Dangerous atmosphere with emission of Volatile Organic Compounds (VOC) create respiratory problem	<ul style="list-style-type: none"> • Restrict to enter into the kiln area is considered as the safety practices. But, this is not highly considered in Sri Lankan cement industry.
Toxic chemicals	Health diseases and accidents i.e. fatalities	<ul style="list-style-type: none"> • Using PPEs, following Material Safety Data Sheets (MSDS), using qualified officers to handle chemicals are main safety practices.
Fire	Damage both human and physical property	<ul style="list-style-type: none"> • Conduct annual fire risk assessment. • Maintain proper fire protection and detection system. • Conduct fire drills and trainings twice per year.
Electrocution	Fatality accidents	<ul style="list-style-type: none"> • Conduct routing inspection and annual risk assessment to identify the electrocution. • Schedule the preventive maintenance activities, use of PPEs, indicate live electricity places, implement isolation and lockout system.
Drowning	Physical injuries including first aid treatment injuries, loss time injuries and fatality accidents	<ul style="list-style-type: none"> • Conduct routing inspections to identify the potential drowning hazards. • Restrict to enter to the quarry except authorized people and displaying precautions sign boards.

High temperature	Physical injuries	<ul style="list-style-type: none"> • Measure high temperature level in the operation process with respected to the standard level. • Use of PPEs and restrict to enter into the area where the temperature level is high.
Radial hazards	It can be lead cancer and other physical illness after the long-time explosion	<ul style="list-style-type: none"> • Less concern on this cause due to the lack of techniques to identify this hazard.
Poor wok environment	Falls, trips and slips can be created injuries with medical treatment and loss time injuries	<ul style="list-style-type: none"> • Conduct routing inspection. • Maintain proper housekeeping and regularly conduct housekeeping audits.
Train operation	Fatal accidents and other injuries	<ul style="list-style-type: none"> • Identify potential risks of the train movement via direct observation, complain from the own employees and public, annual risk assessment and past accidents reports. • As safety practices to control train accidents, Closed Circuit Television System (CCTV) is operated in the train engine and raw material transported area.
Working at height	Physical injuries	<ul style="list-style-type: none"> • Identify the potential risks by direct observation and routing inspections. • Use of PPEs and safety harness during the work at height.
Heavy vehicle movement	Physical injuries	<ul style="list-style-type: none"> • Identify the risk by routing inspections and referring past records. • As safety practices, all vehicle drivers are trained by the outside trainers who having experience on field.
Blasting materials	Physical accidents, eye problems and hearing issues can be caused	<ul style="list-style-type: none"> • Use of PPEs by quarry workers and restrict to enter into quarry area.
High walls with high slopes and open edges	Physical accidents i.e. first aid treatment injuries and loss time injuries	<ul style="list-style-type: none"> • Identify the risk by routing inspections and referring past records. • Use of appropriate PPEs and sign boards.

Aforementioned (refer table 5) causes, impacts and safety measures were validated in the research finding and analysis phase based on the opinions of respondents from the selected cases.

Organisational factors

Followings are organisational factors which are leading to cause OSH issues in cement manufacturing industry (refer Table 06). The below Table 6 presented the summary of organisational factors and how they are influenced to cause the OSH issues based on the empirical finding and analysis.

Table 28: Organisational factors

Organisational factor	Description
Lack of experience and knowledge	Most of contract employees in the industry, they are changing and new employees are coming, it is difficult to retain experience workers within the factory. This has been reason to create OSH issues in the factory
Poor working relationship among workers	Some employees do not like to build relationship among them due to their personal bad attitudes.
Careless activities of workers	Some employees think that they are over confidence and try to work without care. In such situation accidents can be happened. And also, workers bypass the safe work procedures.
Urgent operational activities	In sudden breakdowns and immediate maintenance requirements, workers have to perform their tasks within a short period and they try to bypass safe work procedures.
Lack of awareness of worker's responsibilities	Workers neglect their responsibilities without taking accountability of their tasks and not fully aware about the tasks and accidents can be happened.

Lack of resources to support for health and safety	Financial resources and difficulties to find out skilled and confident employees.
Inadequate strategies related to the health and safety	Inadequate strategies to ensure safety of customers and other outside parties.
Lack of awareness of perspectives related to the OSH	New comers and contract employees are not fully aware about the OSH.
Lack of information related to the OSH	Lack of information about the machine operation procedures, maintenance procedures, safety working procedures and chemical using procedures are caused to create OSH issues
Lack of supervision of the employees	Some supervisors are neglect their responsibilities and adequately not provide their supervision to their labours. An adequate supervision is not received in night shifts period.
Risky attitudes and behaviors of workers in the workplace	Due to overconfidence, employees like to get unnecessary risks during their jobs. This causes OSH accidents during their works.
Lack of use of PPEs by workers	PPEs are not properly used by the workers during their works and this can be identified as a bad behavior of workers.
Providing defective PPEs to the workers in the factory	Contract employees are received PPEs from their mother companies and these PPEs are consisting with some defectives.
Equipment in the workplace are not properly used by workers	Even there is an enough knowledge and experience to use equipment and machines in the work place, these are not properly used in workplaces by workers thus leading accidents.

As the result of research analysis, lack of experience and knowledge, lack of resources to support the OSH, risky attitudes and behaviours of workers in the work place, and lack of the use of PPEs by workers were exposed as the major causes of OSH issues in manufacturing industry. In addition, **urgent operational activities**, equipment in the

workplace are not properly used by the workers, and lack of supervision of the employees were disclosed as considerable causes of OSH issues in the manufacturing industry. Though, lack of supervision of employees addressed as considerable cause of OSH issues by majority of respondents, all the supervisory level respondents neglect to accept it as a cause of OSH issue because they **always provide adequate supervision to the employees.**

Current Practices with regard to Mitigation of Causes

Cement manufacturing industry is a numerous kind of risk included industry and always exposure to the occupational accidents and health diseases. By implementing proper safety practices, these adverse effects can be minimized. As per research investigation, plenty of safety practices are followed to improve the occupational safety and health of the employees in Sri Lankan cement manufacturing industry (refer Table 7).

Table 29: Current Practices with regard to mitigation of causes

Current Practices	Details about the practice
Following the National and International legislations and standards	Following the conditions in the Factory Ordinance and Occupational Safety and Health Assessment System (OSHAS) 18001:2007
Safety training	Safety trainings are conducted to cover all safety requirements
Safety reporting and recording system	There are manual and online safety reporting and recording system
Safety policies and procedures	Organisations have special safety policies and procedures and these are continuously updating
Safety monitoring system	Work activities and related work procedures are continuously monitored and evaluated to keep the safety among workers at standard level
Key performance indicator system	It is considered as the safety and health is a Key Performance Indicator (KPI). Safety KPI is engaged with the employee's salary and bonus.
Safety meetings and awareness programs	In safety meetings, safety related information is discussed and take appropriate decisions for the improvement of OSH. Safety awareness programs are implemented before starting every work.

Challenges Associated with Enhancement of OSH in Cement Manufacturing Industry in Sri Lanka

Even though, plenty of activities have taken place to ensure OSH in workplace, there are some factors which have become the challenge in applying and enhancing OSH practices in cement manufacturing industry. Based on the empirical finding, six challenges for the enhancement of OSH practices and solutions to overcome those hinders of enhancement were projected (refer Table 8).

Table 30: Challenges associated with enhancement of OSH

Current Practices	Description
Fund limitation	Since safety is considered as a KPI, enough finance resources should be allocated. Enough finance should be allocated to obtain national and international standards for OSH
Ensuring safety of contract employees	Provide induction programs to aware about OSH, introduce safety rewarding systems to encourage them and penalty system to mitigate defaults
Lack of confidence of employees	Allocating suitable tasks to the employees that can be fulfilled by them, Upgrade the confidence by providing training and other special programs
Unrealistic production targets	Managers should forecast future demand and prepare job schedules and informed to others also
Ensuring safety of customers and other outside parties	Providing information and instructions about the OSH and providing PPEs to the customers and other outside parties.
Negligence of safe work instructions by employees	Providing necessary trainings and suitable programs, encouraging the employees about OSH by sharing past experience and knowledge with them. Introducing safety related penalty system.

Proposed Framework for Enhancing OSH in Cement Manufacturing Industry

A framework was developed finally incorporating findings of the study which will facilitate the safety practices to mitigate current OSH issues in Sri Lankan cement manufacturing industry. Figure 02 shows the developed framework which can be used as a safety tool for all practitioners to enhance the OSH practices in Sri Lankan cement manufacturing industry.

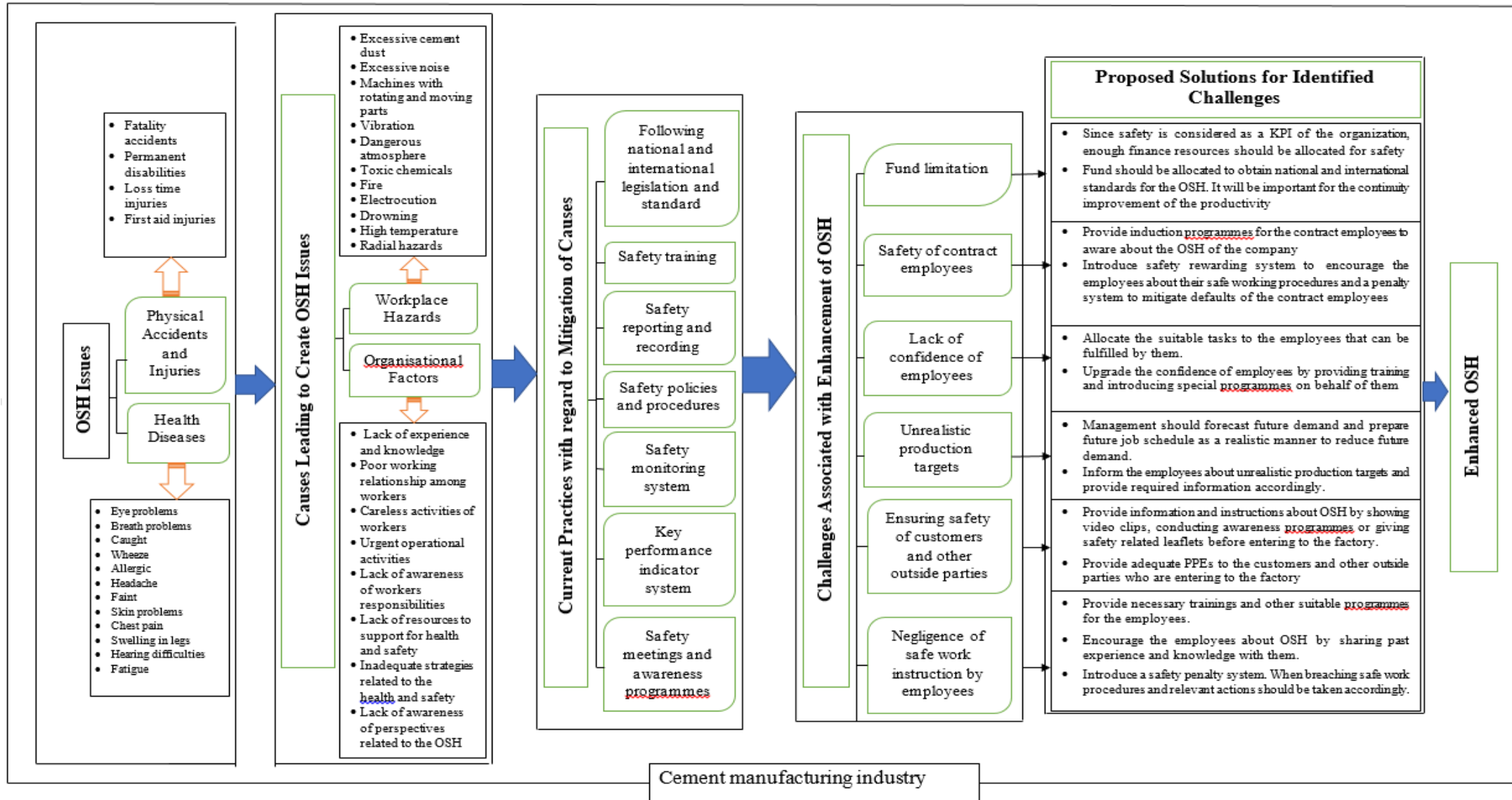


Figure 4: Proposed framework to enhance the OSH in cement manufacturing industry

CONCLUSIONS

Occupational Safety and Health (OSH) as the science and art of the anticipating, recognizing, analysing and monitoring of hazards arising in the workplace that could harm the health and well-being of employees. Though the practice of OSH is increases over the world, very few research only conducted on the subject area. Therefore, this study is focused to develop a framework for enhancing OSH in cement manufacturing industry in Sri Lanka. This research study emphasis the necessity of OSH practices in cement manufacturing industry.

In this study, OSH related issues have been categorized into two broad type i.e. physical injuries and health disease. Further the causes behind those issues also classified into two including workplace hazards and organisational factors. Altogether seventeen (17) workplace hazards and its impacts and safety measures to overcome those hazards and fourteen (14) organisational factors and its impacts were validated. Among fourteen (14) organisational factors, lack of experience and knowledge, lack of resources to support the OSH, risky attitudes and behaviours of workers in the work place, and lack of the use of PPEs by workers were disclosed as the major causes of OSH issues in manufacturing industry. In addition, seven (7) safety practices to mitigate the OSH issues and six(6) challenges for the enhancement of OSH practices and solutions to overcome those hinders of enhancement were projected. Finally, a framework was developed based on the findings to facilitate the safety practices to mitigate OSH issues in Sri Lankan cement manufacturing industry.

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Adoption of Green Practices in Hotel Industry in Sri Lanka: An Evaluation Based on the Green SL Rating System

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Abstract

Greening is no more a new concept to the industries due to unstoppable pressure that has been placing from government and non-government organizations to implement sustainable approaches throughout the business management procedures. Adopting green practices has become inevitable for hotel industry since customers have become sensitive when making purchasing decisions thereby giving priority for green hotels. The Green Building Council of Sri Lanka (GBCSL) has introduced Green SL rating system including eight categories to evaluate the green aspects that have to be followed by new buildings and existing buildings in order to go green. The objective of this research study was to evaluate the green aspects that are being adopted by the existing hotel buildings in Colombo City. Green aspects of star class hotels were evaluated by studying three hotels located in the city of Colombo. Structured interviews were conducted with green associates and hotel executives to address the challenges of implementing green practices in the hotel industry. Results of the evaluation revealed that adoption of green practices in existing buildings are at a lower level as per the GBCSL rating system. The findings of this research study revealed that city hotels have not been able to meet the criteria of Green SL rating system to a satisfactory level. Green practices have been adopted in hotels to maintain the indoor environmental quality in existing building. Higher cost involved in renovation, sensitivity to seasonality, lack of awareness of going green and lack of interest were identified as key challenges in greening hotels. The findings of this study suggest that successful implementation of green practices in hotel industry is primarily depends on management support, staff awareness and staff engagement.

Key words: Greening Hotels, Green Buildings, Sustainable Development, Responsible Tourism

INTRODUCTION

Recently, sustainable development has become a buzz word in all types of industries since reducing the negative environmental impact of business activities has identified as a source of competitive advantage for business. The concept of sustainability was first developed in 1987 with the release of the United Nations sponsored Brundtland Commission's "Our Common

Future” and the action plan for sustainability was introduced by the Agenda 21 of the Rio – Earth Summit Conference in 1992(Young & Earnest, 2008). Greening buildings has become flagship for sustainable management since it balances the long-term economic, environmental, social and health(Ali and Al Nsairat, 2009). Green Building is a holistic concept that begins with understanding that the built environment can have both positive and negative profound effects on the natural environment, as well as the people who inhabit in buildings. Green building is an effort to amplify the positive and mitigate the negative of these effects throughout the entire life cycle of a building(US Green Building Council, 2014).

Green buildings are identified as sustainable buildings and used as a tool for United Nations Sustainable Development Goals(World Green building council, 2016). The concept of green building is aligning with nine sustainable goals including good health and wellbeing, affordable and clean energy, decent work and economic growth Industry innovation and infrastructure, Sustainable cities and communities, Responsible consumption and production, Life on land and partnership for the Goals.

The First Green Building rating tool Building Research Establishment’s Environmental Assessment Method (BREEAM) was introduced to the world by United Kingdom in 1997 and United States Green Building Council (USGBC) introduced world famous Leadership in Environmental and Energy Design(LEED) green building assessment rating tool in year 2000 to assess the green building parameters. Green building rating tools or certification are used to assess and recognize buildings which meet certain green requirements or standards. Rating tools, often voluntary, recognize and reward companies and organizations those adopt, build and operate greener buildings, thereby encouraging and incentivizing them to push the boundaries on sustainability. They kick-start the market by setting standards that then in turn elevate the ambition of government building codes and regulation, workforce training, and corporate strategies (World Green building council, 2016).

Rating tools vary in their approach and can be applied to the planning and designing, construction, operation and maintenance, renovation, and eventual demolition phases of a green building. Rating tools can also differ in the type of buildings they are applied to, with specific tools or subsets of tools used for different building types such as homes, commercial buildings or even whole neighborhoods(World Green building council, 2016). Therefore, more than 70 countries make green rating tools for themselves to achieve sustainability for their building construction and operation sector.

As per the sustainable development definition sustainability focused on main three pillars such as Environmental, Social and Economic conditions and factors of these three pillars differ from country to country. Therefore, each country needs its own green rating tool to assess its buildings since the concept of green development addresses the environmental, social and economic factors and its impact on the same.

The Green building council of Sri Lanka (GBCSL) was established in 2009 as a nonprofit non-government organization similarly to the other Green building councils around the world. GBCSL has received the membership of World Green Building Council in year 2010. The Green^{SL®} Version one for new developments has been developed and published in 2010 and Green^{SL®} Version one for existing building has been developed in 2011. The assessment for the Sri Lankan Building under these two rating tools has been started in year 2012.

Hotel buildings are identified as commercial buildings which consumes higher sources of energy per guest. It is said that hospitality buildings have higher environmental impact since they operate 24 hours basis providing comfort for guests (Redl, 2013). Guests are expecting enhanced service and experience during their stay in a hotel. Making a value for money by reducing waste of resources is a challenge for hotel operators. Operating a commercial building such as an accommodation facility involves larger emission of Green House Gas (GHG) and as a result of higher energy consumption (Filimonau *et al.*, 2011). Ronning and Brekke present a diagram of all possible GHG emission those can be involved with operating a hotel. They identified that activities related to transportation of goods and people, production, and energy use are considered as equally important areas in GHG accounting (Rønning and Brekke, 2015).

Tourism has been identified as one of the major income sectors for Sri Lanka and which has a continuous growth in recent past. The annual tourist arrivals in 2012 just exceed 1 million. Tourism which forms 0.6% of the total Gross Domestic Product (GDP) of the country was one of the fastest growing sectors in the economy, growing by 39.8% in 2010. The government has set a target of receiving 4.5 million tourist arrivals by 2020.

Table 31: Monthly Tourist Arrivals in 2017 and 2018 Sri Lanka

Month	2017	2018	%Change 2017/2018
January	219,360	238,924	8.9
February	197,517	235,618	19.3
March	188,076	233,382	24.1
April	160,249	180,429	12.6
May	121,891	129,466	6.2
June	123,351	146,828	19.0
July	205,482	217,829	6.0
August	190,928	-	-
September	145,077	-	-
October	152,429	-	-
November	167,511	-	-
December	244,536	-	-
Total	2,116,407	-	-
Up to July	1,215,926	1,382,476	13.7

(Sri Lanka Tourism Development Authority, 2018)

The supply chain of tourism service providers includes lodging operators, restaurants, tour operators, transportation providers and many more. The concept of responsible tourism has stressed the facility providers in the tourism sector to achieve sustainable targets while reducing environmental impact which is a challenge for developing country like Sri Lanka. United Nations Environment Programme (UNEP) and the World Tourism Organization highlights that “green investment in tourism can contribute to economically viable and robust growth, decent work creation and poverty alleviation; while improving resource efficiency and minimizing

environmental degradation”(UNEP, 2011). The tourism has a higher environment impact due to higher level of greenhouse gas emission and the higher energy usage for providing facilities. UNEP highlights that tourism sector produce 5% of the global carbon emission and forecasted data reveals that it will be increased up to three times within thirty years.

Hotel industry is providing the core facility of accommodation to function the global tourism industry. Large amount of paper, food, energy, and other resources are regularly used in hotel operations(Jamaludin and Yusof, 2013).Managing environmental aspects in hotel industry has come to the discussion as a result of changes in customer perceptions. Since the number environmental sensitive customers have increased accommodation providers have been stressed to consider adopting environmental aspects in their properties. Simultaneously, economic impacts of going green have also been recognized as per the cost advantage of saving energy, water and solid waste management. Innovative adoptions of green aspects through daily managerial operations have a positive impact on environmental profile of local environment as well marketing advantage(González and León, 2001). This research study intends to evaluate the green aspects that are being adopted by the existing hotel buildings in Colombo City.Green^{SL}rating system of GBCSL was used as the overarching criteria for evaluation purpose.

LITERATURE REVIEW

The term “Green Building” is often brings images such as natural materials, green roofs, green walls and rooftops and high tech gadgets(Lucuik et al, 2005). Several criterions for greening buildings have been identified in the literature. The origin of Environmental Management in hospitality industry goes back to introduction of International Hotel Environmental Initiatives (IHEI) in 1993. That time common four areas were identified as water, energy, and waste and community service for greening hotels(Jamaludin and Yusof, 2013). These four areas are considered as basic areas for greening hotels. Environmental Management System (EMS) is also considered for management of organizations to deal with the aspects that impact on the environment. EMS was introduced in 1996, with ISO 14001 international standards including requirements for EMS(Chan, 2009). EMS considers the environmental impact of organizations by looking at the environmental policy, process that has impact of environment, objectives, monitoring progress and management review(Darnall and Edwards, 2006).

There are number of green rating systems widely used around the globe. Among those U.S. Green Building Council's LEED (Leadership in Environmental and Energy Design) , BREEAM (Building Research Establishment's Environmental Assessment Method), CASBEE (Comprehensive Assessment System for Building Environmental Efficiency) and Green Globes™ US are highly recognized for evaluating, designing and constructing existing buildings and new buildings(Fowler and Rauch, 2006). The United Kingdom's BREEAM evaluate building types including offices, homes, industrial units, retail units and schools under nine main categories containing Management, health and wellbeing, energy, transport, water, materials, land use, ecology and pollution(Chen and Chiu, 2005). CASBEE system which was developed in Japan assists in evaluating a building throughout its life-cycle: pre-design, new construction, existing buildings and renovation. Basically, CASBEE evaluates the building environmental quality and performance against the building environmental loadings. Quality and performance of buildings are evaluated by using three main categories including indoor environment, quality of services and outdoor environment on site. BEE (Building Environmental Efficiency) is calculated by dividing the building environment quality and performance by the building environment loadings including energy, resources and materials and off-site environment. Most of the green rating systems have been adopted or modified from the prevailing rating systems as per the industry updates and country requirements(Fowler and Rauch, 2006). LEED which was developed in 1998 in United States shares most of the above categories. Innovation and design process is a unique category for LEEDthat evaluate the sustainable and innovative design of buildings.

Table 32 Green Rating System and Evaluation Criteria

Green Rating System and evaluation criteria	Energy	Resources and materials	Off-site environment	Project Management	Site	Indoor Environment	Innovation and Design Process	Water Efficiency	Health & Wellbeing	Transport	Land Use	Pollution	Quality of services
LEED (Leadership in Environmental and Energy Design)	√	√	-	-	√	√	√	√	-	-	-	-	-
BREEAM (Building Research Establishment's Environmental Assessment Method)	√	√	√	√	-	-	-	√	√	√	√	√	-

CASBEE (Comprehensive Assessment System for Building Environmental Efficiency)	√	√	√	-	√	√	-	-	-	-	-	-	√
Green Globes™ US	√	√	-	√	√	√	-	√	-	-	-	-	-

(Source: Authors' own evaluation based on each criteria)

As it is illustrated in Table 2, commonly addressed evaluation categories are energy, resources and materials, site, indoor environment and water efficiency. Some rating systems are having unique categories such as quality of service, pollution, health and wellbeing and land use to optimize the building environmental performance. These categories are used as a guide when applying green concept in commercial and other types of buildings.

Larger hotel chains in Asia including Shangri-la Hotels & Resorts, the Mandarin Oriental, and Okura Hotels and Resorts Worldwide have been adopting green practices with the creation of the Asia-Pacific Hotels Environmental Initiative (HEI) in 1994 (Ernst & Young, 2008). The study of Ernst and Young further highlights how independent hotels in Asia have adopted green practices too. Among them, construction of green roof, wooden water storage tanks and water recycling plant are remaining prominent. LEED green certification which is categorized into Silver, Gold and Platinum has gained the attention of hospitality providers in United States for sustainable design in hospitality industry. A study of Leon found that guests have higher satisfaction on hotels those have obtained LEED certification in United States and Europe since those hotel rooms are having natural light and views which is a main criteria in LEED certification (Leon, 2014). MovenPick Hotel and Resorts in Kuwait has also been certified under the Green Globe for successfully adopting the green practices at the level of hotel and at the level of employees (Movenpick hotel and Resort, 2015). Asian governments have implemented separate government agencies in order to promote and assess green developments in hotels and other commercial buildings. Japan's Green Build Council and China's Hotel Association have developed their own criteria and action plans in order to develop green hotels in respective countries (Ernst & Young, 2008).

Kandalama Lake and Forest Reserve is one of the award winning green hotels in Sri Lanka. It has been identified as an eco-friendly hotel for acquiring sustainability in operations and all levels and functions. Their green policy implementation encapsulates environmental commitment and protecting employees' health and safety and improving community welfare. Kandalama hotel has been certified by LEED silver award and Green Globe 21 certified hotel

in Asia(Jamaludin and Yusof, 2013). Kandalama has successfully applied 3R policy in their property and recycled 100% of their waste and turned it into reusable resources(Anon., 2018). Cinnamon Lakeside hotel has also been awarded as the first Sri Lankan five star hotels to winning the Green Globe Certification and Cinnamon Bay Beruwala has also been awarded by the LEED Gold certification for its sustainable design and construction (Anon., 2018).

Previous studies discuss barriers for implementing green practices in hotel industry too. Greening a hotel is much more complicated since hotel industry which comes under the service industry cares perceived opulence, luxury and grandeur of their guests(Iwanowski and Rushmore, 1994). Literature stresses many other challenges including lack of information, varied structure of the industry, seasonality, high cost, lack of government regulations for the tourism industry and not enough pressure from customers for go green have identified as barriers for adopting green practices in the hotel industry(Graci and Dodds, 2008). To overcome such challenges literature proposes to adopt different initiatives suit their hotel operations(Jamaludin and Yusof, 2013). The hotel industry has to see the broader benefits of going green and corporate green characteristics into their operations so that they can improve the economic advantage of business.

METHODOLOGY

Qualitative approach has been employed in this research study. Three star class hotels in Colombo district were selected to evaluate the green aspects are in current practice. Documents were received from the Green building council of Sri Lanka in order to analyze hotel evaluation under the eight categories of Green^{SL} criteria. Structured interviews were conducted with green associates and hotel executives to address the challenges of implementing green practices in hotel industry.

DATA ANALYSIS, FINDINGS AND DISCUSSION

Current green practices of three hotels were evaluated as per the Green^{SL} rating system. Hotel evaluation documents obtained from the GBCSL were summarized in table 3 to table 10 including points received by each hotel for eight categories. Points are allocated according to the Green^{SL}rating tool.

Table 33: Management Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Management (04 Points)	Building user guide	-	2	-
	Environmental Management	-	2	-
Points received		-	4	-

Management category evaluates availability of simple and easy building user guide including up to date information of the building such as access and safety, design of the building, energy efficiency measures, water saving measures, waste management and etc. Buildings have to maintain an environmental management plan including procedures to maintain minimum sound level, air pollution and waste management of the building which is aimed to reduce the impact on environment and maintain maximum indoor environmental quality. As it is shown in Table 3, only one city hotel has adopted the criteria in the management category.

Table 34: Sustainable Sites Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C	
Sustainable sites (21 Points)	Green SL rated design and construction	-	-	-	
	Facility Management-building exterior and hardscape management	-	2	2	
	Facility Management-Outdoor Integrated Pest Management, erosion control and landscape management	-	2	2	
	Alternative transportation Low emitting and fuel efficient vehicles Parking capacity		-	1	-
			-	1	1
	Protect or restore open habitat	1	1	-	
	Storm water design, quantity control	2	2	-	
Storm water design, quality control	2	2	-		

	Heat island effect-Non-roof	2	2	2
	Heat island effect-roof	-	-	-
	Light pollution reduction	-	1	1
Points received		07	15	08

Green^{SL} rating system allocates twenty-one (21) points for second category which evaluates the efficient usage of land in terms of adopting brown fields without making harm to green fields. Hotel A and B have received higher points for controlling soil erosion and redeveloping brown fields to reduce the environmental impact of hotel buildings while creating an attractive garden for their visitors. Hotel B has received highest marks for the category of sustainable sites by providing in-house parking, easy access to transportation, reduced thermal effect and maintaining the outdoor environment without making harm to native species.

Table 35: Water Efficiency Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Water Efficiency (16 Points)	Water performance measurement Measure total water consumption of the building Measure water usage of building subsystems	1	1	1
		1	1	1
	Water efficient landscaping Reduce potable water consumption Eliminate potable water consumption	2	-	-
		2	-	-
	Water efficiency in air-conditioning system	1	-	-
	Innovative wastewater technologies Reduce potable water use or treat waste water Harvested rainwater	2	-	-
		-	-	-
	Water use reduction	4	2	-
	Innovative water transmission	-	-	-
	Points received		13	4

Sixteen (16) points have been allocated for efficient usage of water and evaluates using alternatives for potable water and reducing usage of potable water in terms of landscaping, flushing purposes and air-conditioning. As per the evaluation criteria given in Table 5, hotel C only concerns about performance of water usage by installing sub-meters for each section in a hotel whereas, hotel A shows overall efficiency in all criterions other than innovative water transmission.

Table 36: Energy and Atmosphere Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Energy & atmosphere (26 Points)	Optimize energy performance	-	5	-
	Renewable energy	1	-	-
	Existing building commissioning Investigation and analysis Implementation	1	1	1
		-	1	1
	Ongoing commissioning	2	2	2
	Ozone depletion	1	1	1
	Performance measurement-sub metering	-	1	-
	Performance measurement-building management system	-	-	-
	Green power	-	-	-
Points received		05	11	05

Energy and atmosphere has considered as the most important category in Green^{SL} rating system allocating twenty-six (26) points since it has been proved that 60% of total energy in Sri Lanka is consumed for building operation. None of the hotels in this study have achieved at least 50% of the points for this category. Hotel B has received five points for optimizing energy performance saving 25% of energy by using daylight, adopting innovative technologies for hotel operations such as key cards and replacing low performance fittings with high performance fittings. All three hotels have failed to adopt building management systems

including building automation.

Table 37: Material and Resources Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Material and resources (10 Points)	Solid waste management-western stream audit	1	1	1
	Solid waste management-ongoing consumables	1	2	2
	Solid waste management-durable goods	-	2	2
	Solid waste management-facility alteration and additions	-	1	1
	Sustainable purchasing-ongoing consumables	-	2	-
	Sustainable purchasing -durable goods	-	1	-
	Sustainable purchasing-facility alteration and additions	-	1	-
Points received		2	10	06

Material and resources evaluates adaptation of 3R (Reduce, Reuse and Recycle) concept for waste management. Table 7 shows that Hotel B has successfully adopted waste management methods for ongoing consumable goods and for durable goods. It has reduced waste generation by adopting sustainable purchasing systems too.

Table 38: Indoor Environmental Quality Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Indoor environmental quality (13 Points)	Outdoor air delivery monitoring	-	-	-
	Increased ventilation	1	-	1
	Low emitting materials for facility alterations and additions	-	1	-
	Green cleaning program	-	2	1
	Indoor integrated Pest Management	-	1	-
	Indoor chemical & pollutant source control	-	1	-

	Controllability of systems	-	1	1
	Lighting controls	1	1	1
	Comfort controls	-	1	1
	Thermal comfort monitoring	-	1	1
	Occupancy comfort survey	-	1	1
	Daylight and views	-	-	1
	Daylight	1	1	1
	Views	1	1	1
Points received		04	11	10

Indoor environmental quality evaluates the thermal comfort, visual comfort, acoustic comfort and human comfort of an existing building. Indoor environment quality is an essential parameter for building occupants since it has a higher impact on health, safety, efficiency and performance of occupants. Hotel A has ignored providing thermal comfort, indoor air quality and human comfort for the visitors whereas visual comfort has been considered. Hotel B and C have considered all the criteria in the category.

Table 39: Innovation in Operations Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Innovation in operations (06 points)	Innovation in operation	-	-	-
	Exemplary performance	-	-	-
Points received		-	-	-

Innovation in operations considers to what extent building management adopts innovative methods, technologies and practices for reducing environmental harm done by the buildings. None of the evaluated hotels have considered the criteria in this category.

Table 40: Social and Cultural Category

Criteria	Essentials	Hotel A	Hotel B	Hotel C
Social and cultural (04 points)	Social wellbeing public health and safety	1	-	1
	Cultural identity	1	1	1
Points received		02	1	2

Social and cultural category evaluates how existing building have adapted to the governing rules and regulations and how building management contributes to protect the cultural identity. Hotel A and C have adopted 50% of the practices under this category.

Building user guide is a new concept for Sri Lanka. Building user guide illustrates buildings, its components and services that are been used by occupants and availability of opportunity for expansion of such components. Therefore, it is very essential for hotel industry since the occupants of hotel buildings are varied by time to time. Having a building user guide assists the management to maintain the services in the building too. One hotel out of three Colombo city hotels is having a building user guide and environmental management plan. However, it was identified that each hotel manages their buildings to provide maximum services to their visitors. Since these hotels have not adopted criterions in SL ratings they have failed to achieve sustainable parameters and that has created higher maintenance cost for the facility management.

Interviewees from hotel management highlighted that it has been a challenge for city hotels to maintain sustainable sites since they are located in the commercial hub. In case of city hotels in Colombo, they have limited land areas and higher cost of lands. Therefore, hotel management has been challenged to maximize the land use ensuring that they maintain a visitor friendly outdoor environment.

Efficient usage of potable water has been emphasized due to scarcity and the higher cost and higher carbon foot print involved in production of potable water. Green^{SL} rating evaluates how building management follows methods including rain water harvesting, reusing waste water by treating and adaptation of innovative technologies and sanitary fittings as alternatives for reducing demand for potable water. Only one city hotel from the sample has successfully adopted the criterions recommended by Green^{SL} rating systems. Hotel managers mentioned that

treatment of waste water is not required in Colombo city limits since Colombo City has a central system to dispose waste water. Furthermore, higher cost is involved in treating waste water, maintaining standards of treated water and reusing waste water and rain water at least for washing purposes.

Highest operational cost of a hotel is created from energy used for air-conditions, heaters, boilers, lighting, stores and kitchen operations. Therefore, managing energy under the criteria given in the Green^{SL} ratings system is an ideal to reduce the energy demand thereby reduced operational cost of facility management. Hotel management seemed to have low awareness on available practices, technologies and low energy used equipment those can be utilized for managing energy in hotel buildings.

As per the evaluation, two hotels have adopted successful waste management practices and indoor environmental quality practices in their properties. It was noticed that Hotel A has an effective present solid waste management system but has been failed to adopt practices to reduce future waste generation. Interviews with hotel management revealed that they have little awareness and fewer considerations on this regard. It was observed that variation of target group of hotels also have an impact on adopting green practices in hotel buildings. Hotel A which is a non-rated hotel is lagging behind of adopting indoor environmental quality methods comparing to the hotel B and C those are rated as star class hotels.

Last two categories evaluates to what extent existing building adopt innovative practices and cultural awareness. Cultural identity has been maintained by each hotel since it is vital for hotel industry to promote their business among both domestic and international visitors. It is observed that three selected hotels have not highly adopted the criteria mentioned in the Green^{SL} rating system.

CONCLUSION

As per the evaluations done based on the Green^{SL} rating system, it can be concluded that city hotels in Colombo city have given less attention for adopting green practices when operating hotel buildings. This research study revealed that city hotels have given priority for adopting indoor environmental quality methods which is highly required in hotel industry to meet the customer demands for comfort during their stay . Remaining criteria have received less attention from hotel management due to challenges involved in adopting sustainable practices. During the structured interviews it was revealed that main challenges of adopting green

criteria are less awareness or no awareness on Green^{SL} rating system and prevailing myths about green concepts. Higher initial cost involved in converting existing systems to green systems was also mentioned. Seasonality and customer sensitivity in the hotel industry, unawareness of benefits by adopting green SL practices such as reduced operational cost, increased perceived customer satisfaction and value of service were observed as challenges too. Management support, staff engagement and staff support were addressed as highly required for adopting green practices in any industry. In the point of green associates, Sri Lanka needs to give much more attention for promoting green criteria in order to enjoy large array of social, economic and environmental benefits of going green.

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An Exploratory Review on Dynamics in Productivity with the Intervention of Human Resource Management (HRM) with Special Reference to the Manufacturing Industry

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Abstract

Dynamics in productivity with the intervention of Human Resource Management (HRM) was identified as a significant area with special reference to the global manufacturing industry. Most of the past research in this area were focused on the dynamics in productivity with non HR factors with reference to both manufacturing and service sectors. Manufacturing industry is highly driven by the achievement of goals and objectives. Human Resource (HR) is one of the key significant resource in achieving goals and objectives. Six key objectives were identified. The methodology adopted was the archival method. This review process covered the published research articles, books and conference papers related to HRM and productivity, which were published within the period of 1960 to 2018. In providing a sound theoretical framework theories such as Systems Theory, Abraham Maslow's Hierarchy of Needs Theory, Frederick Herzberg's Two Factor Theory and Douglas McGregor Theory X and Y have been used.

Five main variables were identified through-out the exploratory review. HRM Functions, organizational factors and personal factors were identified as independent variables. The dependent variable identified was the productivity. Motivation was identified as the mediating variable. Effective launch of the HRM functions such as HR Planning (HRP), recruitment and selection, training, remuneration system, system of appraisals, promotion and career advancement, disciplinary management, employee welfare and HRM Information Systems (HRMIS), enhances the organizational productivity. With the careful handling and effective usage of organizational factors such as leadership, team working behavior, organizational culture, empowerment, work environment and communication system, ultimately make a bigger contribution in enhancing productivity. Personal factors such as attitudes, skills, knowledge, behavior, responsibility and interest also make a vital contribution in enhancing productivity. There is a significant mediating effect of motivation in enhancing the productivity. Finally, based on the research findings of the archival method, a model was developed for further expansion of this specific research area with special reference to the manufacturing industry.

Keywords: Human Resource Management (HRM), Productivity, Motivation, Organizational Factors, Manufacturing Industry

INTRODUCTION

Dynamics in productivity with the intervention of Human Resource Management (HRM) was identified as a significant area, specially referred to the manufacturing sector. Through-out the research history many of the studies were launched related to the topic. However, more research were launched to study the dynamics in productivity with non HR factors with reference to both manufacturing and service sectors in the world. Generally, manufacturing industry is highly driven by the achievement of goals and objectives. Human Resource (HR) is one of the key significant resource in achieving goals and objectives of the organizations. Human Resource Management (HRM) is one of the key functional area in the business organizations that, deals with the various requirements and different matters related to the employees of the organizations. Human Resource Management (HRM) is concerned with the human beings in the organizations. “The management of man” is a very important and challenging job because of the dynamic nature of the people (Ganesan, 2014). Human Resource Management is the process of acquiring training, appraising & compensating employees and of attending to their labor relations, health and safety, fairness concerns (Dessler, 2008). Moreover, Human Resource Management is a management function which helps managers to recruit, select, train and develop organization members (Ganesan, 2014). Based on the previous research, it was identified that, there is a significant effect of different Human Resource Management functions on the organizational productivity. The scope of Human Resource Management includes Human Resource Planning, Design of the Organization and Job, Selection and Staffing, Training and Development, Organizational Development, Compensation and Benefits, Employee Assistance, Union/Labour Relations, Personnel Research and Information System (Ganesan, 2014). As well as, the National Institute of Personal Management (NIPM) of India has defined human resources – personal management as that part of management which is concerned with people at work and with their relationship within an enterprise. Its aim is to bring together and develop into an effective organization of the men and women who make up enterprise and having regard for the well – being of the individuals and of working groups, to enable them to make their best contribution to its success. The key definitions given by the different scholars on Human Resource Management (HRM) are summarized below (Table 1).

Table 1: The key definitions on Human Resource Management (HRM)

Author (s)	Year	Definition
Flippo	1984	Human Resource Management is defined as planning, organizing, directing, controlling of procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organizational and social objectives are achieved.
Byars and Rue	2006	Human Resource Management is defined as a system of activities and strategies that focus on successfully managing employees at all levels of an organization to achieve organizational goals.
Armstrong	2006	Human Resource Management is a strategic and coherent approach to the management of an organization's most valued assets: the people who are working there who individually and collectively contribute to the achievement of its objectives.
Dessler	2008	Human Resource Management is defined as the policies and practices involved in carrying out the "people" or human resource aspects of a management position, including recruiting, screening, training, rewarding and appraising.
Opatha	2009	HRM is the efficient and effective utilization of employees in order to achieve goals of the organization; and it is about managing people at work, being the human side of Business Administration having policies, procedures, rules, and systems influencing employees of the organization.
Ganesan	2014	HRM is a process of making the efficient and effective use of human resources so that the set goals are achieved.

Productivity is one of the crucial factors in production performances in manufacturing organizations including both public and private sectors. Productivity growth helps businesses to be more profitable (Fuller, 2016). A productivity measure is expressed as the ratio of output to inputs used in a production process, e.g.: output per unit of input. Moreover, the productivity is explained as a ratio of a volume measure of output to a volume measure of input use. According to the Oxford dictionary definition, the productivity is the effectiveness of productive effort, especially in industry, as measured in terms of the rate of output per unit of input. Moreover, according to the Cambridge dictionary definition, the productivity is the rate

at which, a company or country makes goods, usually judged in connection with the number of people and the amount of materials necessary to produce the goods. According to the Adam Smith (1776) labour can be divided into two broad categories, productive labour and unproductive labour. According to Smith (1776), productive labour, is any work which fixed itself in a tangible object. Moreover, unproductive labour, is any work where the value was consumed as soon as it was created (Smith, 1776). Moreover, Smith (1776) contrasted the role of labourers in a manufacturing plant (productive work) with the tasks of a servant (unproductive work). Moreover, the productivity was defined as a measure of output from a production process, per unit of input (Courbois and Temple, 1975). For example, labor productivity is typically measured as a ratio of output per labor-hour, an input. Productivity may be conceived of as a metric of the technical or engineering efficiency of production. As such, the emphasis is on quantitative metrics of input, and sometimes output. Productivity is distinct from metrics of allocate efficiency, which take into account both the monetary value (price) of what is produced and the cost of inputs used, and also distinct from metrics of profitability, which address the difference between the revenues obtained from output and the expense associated with consumption of inputs (Courbois and Temple, 1975). There are different concepts of productivity, which were developed throughout the scientific research process. These are partial productivity, labour productivity, total productivity and multi-factor productivity.

Production is a process of combining various material inputs and immaterial inputs (e.g.: plans & etc.) in order to make something for consumption (the output). The methods of combining the inputs of production in the process of making output are called technology. When all outputs and inputs are included in the productivity measure, it is called total productivity as shown in equation 1.

$$\text{Total productivity} = \text{Output quantity} / \text{Input quantity} \quad (1)$$

According to the above formula, changes in input and output have to be measured inclusive of both quantitative and qualitative changes (Jorgenson and Griliches, 1967). In practice, quantitative and qualitative changes take place when relative quantities and relative prices of different input and output factors alter. In order to accentuate qualitative changes in output and input, the formula of total productivity can be written as in equation 2.

$$\text{Total productivity} = \text{Output quality \& quantity} / \text{Input quality \& quantity} \quad (2)$$

Dynamics in productivity with the intervention of Human Resource Management (HRM) was identified as a significant area, specially referred to the manufacturing sector. Through-out the research history many of the studies were launched related to the topic. However, more research were launched to study the dynamics in productivity with non HR factors with reference to both manufacturing and service sectors in the world. Therefore, it was identified that, there is a significant research gap in this area. It was identified that, employee involvement in terms of delegation of responsibility and systems of collecting proposals from employees have a positive impact on productivity (Arthur, 1994). Moreover, Arthur (1994) identified that, steel mills that use an HRM commitment system have higher productivity levels than those that do not. Koch and McGrath (1996) and Siebers et al (2008) investigated the impact of a set of HRM practices on labour productivity, to find that investments in HR planning and in hiring practices are positively associated with labour productivity. It was identified that, the innovative HRM practices raise worker productivity in steel manufacturing finishing lines in United Sates (Ichniowski and et al, 1997). It was revealed that, the systems of innovative HRM practices have large effects on production workers' performances in steel manufacturing finishing lines in United Sates (Ichniowski et al, 1997). Moreover, it was revealed that, the workers' performance is substantially better under incentive pay plans that are coupled with supporting innovative work practices-such as flexible job design, employee participation in problem-solving teams, training to provide workers with multiple skills, extensive screening and communication, and employment security than it is under more traditional work practices (Ichniowski et al, 1997). When comparing the productivity of Japanese and USA production line workers, empirical evidence shows that USA manufacturers who had adopted a full system of innovative HRM practices patterned after the successful Japanese system, achieved levels of productivity and quality equal to the performance of Japanese manufacturers (Ichniowski and Shaw, 1999; Siebers et al, 2008). This suggests that the higher average productivity of Japanese plants cannot be attributed to cultural differences; instead, this is related to the utilization of more effective HRM practices (Ichniowski and Shaw, 1999; Siebers et al, 2008).

A study of the factors associated with productivity levels clearly establishes that, the factory management must adopt modern practices to achieve higher productivity (Bheda et al, 2003). This will be possible, only if the supervisory and managerial terms are trained to bring in these changes (Bheda et al, 2003). It was identified that, companies could use a blend of in-house

training along with sponsored staff to attend programs at specialized institutions, so as to learn scientific methods of line balancing plant layout, workplace engineering etc. (Bheda et al, 2003). It was revealed that, trainings for managers, supervisors and operators have a positive association with high productivity in Indian apparel manufacturing industry (Bheda et al, 2003). Moreover, according to Bheda et al (2003) it was identified that, induction training has a positive association with high productivity. It was identified that, factories that had invested in operator training had higher productivity (Bheda et al, 2003). Moreover, it was identified that, it is essential to start an in-house operator training programme for skill as well as work culture, so that the operators are made aware of how to achieve world class performance (Bheda et al, 2003). As the factories are likely to have already gained substantially through implementation of the recommendation on productivity improvement, it is the right time to draw-up an incentive plan for the workforce that encourages higher performance and rewards it suitably (Bheda et al, 2003). Siebers et al (2008) studied about the role of the management practices in enhancing the productivity. Siebers et al (2008) mainly concerned on the Operational Management (OM) practices and Human Resource Management (HRM) practices on productivity. OM practices focus on systems management and include Information and Communication Technology (ICT), Just In Time (JIT), Total Quality Management (TQM), and lean production, amongst others (Siebers et al, 2008). HRM practices focus on people management, in particular the recruitment, development and management of employees (Wood and Wall, 2002; Siebers et al, 2008). Typical HRM practices involve training, development, empowerment and teamwork. (Siebers et al., 2008). It was found that, there is a strong and positive relationship between HRM intensity and productivity (Sels et al, 2006; Siebers et al, 2008). According to Al-Aamri (2010) among the factors of production, the human resource is having the biggest challenge, because unlike other inputs employee management calls for skilful handling of thoughts, feelings and emotions to secure highest productivity.

According to Bloom and Reenen (2010), there is suggestive evidence that, certain types of HRM raise productivity. It was identified that, there is certainly a robust positive cross sectional association between bundles of “modern” HRM practices and productivity, but these are not robust in the time series dimension (Bloom and Reenen, 2010). Katou and Budhwar (2015) has introduced a HRM – Productivity framework which consists with three distinctive components; the HRM systems, the HRM outcomes and the production process. According to the HRM – Productivity model of Katou and Budhwar (2015), the HRM system involves the traditional HRM areas of resourcing and development influences employees’ ability to perform by

improving their knowledge, skills and, abilities (Katou and Budhwar, 2015). The HRM system involving the areas of compensation and incentives influences employees' motivation to perform by shaping their attitudes of motivation, commitment, and satisfaction (Katou and Budhwar, 2015). Katou and Budhwar (2015), the HRM system including the areas of involvement and job design influences employees' opportunity to perform by shaping their behaviours such as employee retention (counterpart of turnover) and presence (counterpart of absenteeism). Each of these three HRM systems may directly or indirectly influence all three HRM outcomes of employees' skills, attitudes, and behaviours (Katou and Budhwar, 2015). Therefore, the HRM systems may be associated with more than one HRM outcome category (Lepak et al, 2006; Katou and Budhwar, 2015), indicating that the influences of the three HRM systems on productivity may fully or partially be mediated by the three HRM outcomes (Banks and Kepes, 2015; Katou et al, 2014; Katou and Budhwar, 2015). It was identified that, Human Resource Management (HRM) has a positive impact on productivity, through employee skills, attitudes, and behaviour in Greek manufacturing sector (Katou and Budhwar, 2015). It was identified that, there is a strong positive relationship between HRM practices and labour productivity mediated by HR outcomes in manufacturing SMEs in Japan (Gamage, 2015). It was revealed that, certain HRM practices, such as working in teams, greater discretion and autonomy in the workplace and various employee involvement and pay schemes, do motivate workers and generate higher labour productivity (Cully et al, 1999; Boselie and Wiele, 2002; Gamage, 2015). Kumar et al (2016) explored that, there are fifteen (15) major factors identified in enhancing productivity under four key perspectives; motivation perspective, task perspective, human resource perspective, top management perspective in Indian manufacturing industry. Under motivation perspective, it was discussed on four (4) factors; encouragement to effective communication, reward, recognize and break the monetary and rotate. Under task perspective, it was discussed on four (4) factors; accountability, follow-up, demand realistic targets, manage the workforce but avoid micromanagement. Under human resource perspective, it was discussed on three (3) factors; team work, proactive employees, courses and improvement options (Training). Under top management perspective, it was discussed on four (4) factors; tools and equipment to raise the productivity, availability of water, power and other input supplies, positive attitudes and involvement of management, good working conditions. Positive attitudes and involvement management, proactive employees and good working conditions, tools and equipment to raise the productivity, availability of water, power and other input supplies have been ranked as top five factors in enhancing productivity in Indian manufacturing industry (Kumar et al, 2016).

METHODOLOGY

Objectives of the Study

- i. To identify the nature of the dynamics in productivity with the intervention of HRM in manufacturing industry
- ii. To identify the intervention of Human Resource Management (Main HRM functions affect) in enhancing Productivity in manufacturing industry
- iii. To identify the way that, Human Resource Management (HRM) functions motivate employees in enhancing the productivity in manufacturing industry
- iv. To identify the way that, organizational factors motivate the employees in enhancing the productivity in manufacturing industry
- v. To find out the significant organizational factors, which motivate the employees in enhancing the productivity in manufacturing industry
- vi. To identify the way that, Personal Factors motivate employees in enhancing the productivity in manufacturing industry

Selected Methodology

In achieving the objectives of study, the archival method was adopted by the researcher. Similar methodological approaches were used related to the research fields of Human Resource Management (HRM), motivation and productivity during the past research history (Kumar et al, 2016; Siebers et al, 2008). This review process covered the published research articles, conference papers, published books and papers in Human Resource Management (HRM) and Productivity within the period of 1990 to 2017. In order to provide a sound theoretical framework for this review the key theories were used in the fields of Management and HRM, such as Systems Theory, Abraham Maslow's Hierarchy of Needs Theory, Frederick Herzberg's Two Factor Theory and Douglas McGregor Theory X and Y. Based on the literature review and the theoretical background, the researcher has developed a conceptual framework, which could be able to apply for the future research studies under the topic of dynamics of productivity with the intervention of HRM.

LITERITURE REVIEW AND RESULTS

Dynamics in productivity with the intervention of Human Resource Management (HRM) was revealed through-out the past research history by various scholars in different countries in the world. The previous research findings were related to the fields of both manufacturing and service sectors. However, throughout the previous literature, numerous scholars have discovered on different factors which affect and enhance the organizational productivity linked to the manufacturing industry. Most of the researchers have revealed on non-HRM factors such as trade openness, technology transfer, capital investment, technological innovations and Information and Communication Technology (ICT), which effect on organizational productivity. According to the previous literature, consideration of HRM factors in enhancing organizational productivity in manufacturing industry was touched in very little manner with comparison to the non-HRM factors.

According to Petrescu and Simmons in 2008, several human resource management practices raise workers' overall job satisfaction and their satisfaction with the pay. Satisfaction with pay is higher, where performance-related pay, seniority-based reward systems are in place, and a pay structure, which is perceived to be unequal, is associated with a substantial reduction in both non-union members' overall job satisfaction and their satisfaction with pay (Petrescu and Simmons, 2008). Although, effective human resource management practices can raise workers' job satisfaction significantly, if workplace pay inequality widens consequently then non-union members may experience reduced job satisfaction (Petrescu and Simmons, 2008). It was reported that 89% of employers think their people leave for more money, while only 12% of employees actually do leave for that reason (Greenburg, 2008). Compensation alone is not enough to keep the highly skilled motivated and experienced workforce your business needs to excel and in a four years analysis of more than 100,000 employees worldwide, the Corporate Leadership Council discovered that while workers join companies for rational motives; better compensation, benefits and career opportunities they work hard for emotional ones (Greenburg, 2008).

Most important, managers must understand that annual raises and promotion opportunities are not always enough (Jeffords et al., 1997). Non-technical training and high salaries will have a positive impact on Human Resource (HR) outcomes of managers while job security is the most important predictor of HR outcomes for employees (Fey et al. 2000). There are many

dimensions to optimizing the organizational environment in order to improve productivity through improved employee motivation. Successful team building will have far-reaching ramifications in the organization (Fey et al. 2000). Improve the way team members interact and you improve their ability to solve problems. Better problem solving means better efficiency in general. Increased efficiency tends to boost morale and productivity. It also helps to decrease stress, turnover and operating costs. The importance of the job design and job involvement can also increase the job satisfaction and performance because when the employee is fits his educational background on the nature of his work; there is a significant result on the process of performing that specific job (Baker, 2001). According to Robinson (2004) organizations should encourage initiative and creativity of organizational employees by allowing for some flexibility in application of rules and regulations. The reason is too much rigidity in applying the rules may constitute a setback in the modern growth of the organization and reduce the initiative and creativity of employees, which will affect on the morale of the employees (Robinson, 2004). And, it was found that, the absence of employee empowerment in Sri Lankan apparel manufacturing sector is affecting adversely for the competitiveness and number of long-term implications is associated with this (Kapuge and Smith, 2007). Moreover, it was suggested that, corrective actions are highly necessary for the absence of employee empowerment in Sri Lankan apparel manufacturing sector (Kapuge and Smith, 2007).

Effect of Human Resource Management (HRM) Functions on Productivity

Based on the previous research findings, different key dimensions of Human Resource Management (HRM) functions were identified. The identified key dimensions of HRM functions and the related literature are descriptively tabulated below (Table 3.1).

Table 2: Key dimensions of HRM functions and the related literature

Year	Author	Descriptive Literature	Dimensions of HRM Functions
2013	Anyadike	It was revealed that, the Human Resource Planning (HRP) is essential for productivity and organizational effectiveness and efficiency because, it acquires best human resources, focuses on corporate goal, utilizes human resources, develops human resources, reduces uncertainty and labour cost, regularizes production,	Human Resource Planning (HRP)

		maintains good industrial relation, keeps records and controls human resources.	
2013	Anyadike	Human Resource Planning (HRP) ensures the employee productivity in Nigerian public organizations.	
1996	Koch and McGrath	It was investigated the impact of a set of HRM practices on labour productivity, to find that	
2008	Siebers et al.	investments in HR planning and in hiring practices are positively associated with labour productivity.	
1987	Holzer,	It was found that, extensive recruiting efforts increase	Recruitment & Selection
1995	Huselid	the productivity (Holzer, 1987; Huselid, 1995).	
1997	Ichniowski et al	It was found that, extensive recruiting and selection is one of the foremost policy area in Human Resource Management.	
2003	Bheda et al.	It was revealed that, companies could use a blend of in-house training along with sponsored staff to attend programs at specialized institutions, so as to learn scientific methods of line balancing plant layout, workplace engineering etc.	Training
2003	Bheda et al.	It was found that, trainings for managers, supervisors and operators have a positive association with high productivity in Indian apparel manufacturing industry (Bheda and et al, 2003).	
2003	Bheda et al.	It was identified that, induction training has a positive association with high productivity. As well as, it was identified that, factories that had invested in operator training had higher productivity.	
1994	Bartel	It was identified that, there is a linkage between the	
1995	Huselid	adoption of training programs and productivity growth.	
1985	Jette and Katzell	It was revealed that, training, goal setting and socio technical systems design have significant and positive	
1995	Huselid	effects on the productivity.	

2005	Gamage	Training and development is one of the significant HRM function which leads to higher labour productivity in manufacturing SMEs in Japan.
2014	Trehan and Setia	Training is one of the significant HR practice that would support a healthy and innovation-oriented HR system in an organization.
1997	Ichniowski et al	Training is one of the significant policy area in HRM.
1998	Guzzo	It was identified that, the training is one of the most powerful way to increase the individual productivity. Moreover, it was further identified that, the effect of training is strongest on output measures of productivity.
1993	Anderson et al.	Responses to incentives for productivity in the public sector have been studied. It was found that, there is a positive response to incentives.
1997	Cragg	
1997	Courty and Marschke	
1996	Heckman et al.	
1993	Anderson et al	It was identified that, incentive scheme has a positive effect on productivity.
2005	Rao	It was found that, implementation of incentive scheme motivates the employees of the company to improve production level, achieve better consumption of raw materials and thus achieve higher productivity.
2006	Rao	It was found that, implementation of a multi-factor incentive scheme motivated the employees of manufacturing company to improve production levels, achieve better consumption of raw materials and thus achieve higher productivity.
2015	Katou and Budhwar	It was revealed that, employee compensation and incentives play a much more crucial role in

**Remuneration
System**

		determining organizational productivity, than employee resourcing and development, and involvement and job design.	
1992	Garhart and Milkovich	Moreover, it was revealed that, there is are linkages between incentive compensation systems and productivity.	
2016	Tadioeddin	It was identified a positive linkage between wages and productivity in large-medium scale manufacturing industry in Indonesian manufacturing sector.	
2005	Gamage	It was identified that, the compensation management is one of the significant HRM practice which has a positive relation with labor productivity in manufacturing SMEs in Japan.	
2012	Solomon et al.	It was revealed that, there is a significant relationship between incentive system and employee motivation in manufacturing firms in Nigeria. The implication of this is that there is an adequate provision of motivation by Cadbury Nigeria Plc and improvement in employee productivity and, a positive correlation between employee productivity.	
2005	Gamage	It was identified that, performance evaluation is one of the significant HRM practice which has a positive relation with labor productivity in manufacturing SMEs in Japan.	System of Appraisals
2014	Trehan and Setia	It was identified that, performance based reward is one of the significant HR practice that would support a healthy and innovation-oriented HR system in an organization.	
2010	Bloom and Reenen	It was found that, promotions is more prevalent in the US and Northern Europe than Southern Europe and Asia. Accordingly, the data on productivity is much better and have shown wide distributions of	Promotion & Career Advancement

		productivity within and between countries and HRM appears to mirror these patterns.	
2014	Jayarathna	It was identified that, there is an impact of career development on employee productivity of executive employees of the Apparel Industry in western province in Sri Lanka.	
2017	Anthony	It was found that, the effective disciplinary policy County Education Office Human Resource Department in Turkana County are effective in that the organization has helped in controlling employee's behavior by ensuring there is teamwork and cohesion in the organization.	Disciplinary Management
2017	Waititu et al.	It was revealed that, five variables of employee welfare programmes including occupational health; succession plans; training and development; employee referral scheme and remuneration policies, have an effect on employee performance at Kenya Railways Corporation.	Employee Welfare
2010	Bloom and Reenen	It was identified that, Information and Communication Technology (ICT) appears particular important with several pieces of evidence that combining ICT with the right fit of HRM practices makes a large difference for productivity.	Human Resource Management Information Systems (HRMIS)
2016	Rukumnuayk ita and Pholphirulb	Information Technology (IT) plays a key role in enhancing productivity among both professional and production workers in Thai manufacturing sector.	

According to the literature (Table 2), nine (09) key dimensions for HRM Functions, such as, Human Resource Planning (HRP), Recruitment and Selection, Training, Remuneration System, System of Appraisals, Promotion and Career Advancement, Disciplinary Management, Employee Welfare, Human Resource Management Information Systems (HRMIS) were identified.

Effect of Organizational Factors on Productivity

Based on the previous research findings, different key dimensions of Organizational Factors were identified. The identified key dimensions of Organizational Factors and the related literature are descriptively tabulated below (Table 3).

Table 3: Key dimensions of Organizational Factors and the related literature

Year	Author	Descriptive Literature	Dimensions of HRM Functions
2013	Namin et al.	It was identified the most important factors which enhance the productivity among the faculty members of the universities. According to the findings leadership method is one of the significant factor, which enhances the productivity.	Leadership
2006	Islam and Shazali	It was identified that, having a good boss is a significant contributory factor for motivating the workforce towards higher output in labor intensive manufacturing industry.	
2009	Battisti and Iona	It was identified that, moderate degrees of “bossing” would be a contributory factor to motivate the workforce.	
2016	Rukumnuaykita and Pholphirulb	It was found that, the non-cognitive skills such as leadership skills are also important and seem to have positive relationship to labour productivity among Thai manufacturers.	
1989	Hussein	It was identified that, informal group behavior significantly effect on productivity.	Team Working Behavior
2006	Islam and Shazali	It was found that, working with a good team is a significant contributory factor for	

		motivating the workforce towards higher output in labor intensive manufacturing industry.	
2014	Trehan and Setia	Team development is one of the distinctive HR practice that would support a healthy and innovative-oriented HR system in an organization.	
2015	Kelepile	Organizational culture, which is closely connected to productivity, is critical to the business success as this is the process which an organization develops its internal capacity to be effective in its mandate in the short, medium and long term.	Organizational Culture
2015	Kelepile	Managers and leaders are recommended to develop the strong culture in the organization to improve the overall performance of the employees and organization.	
2015	Kelepile	It was revealed that, culture is a key factor not only in achieving organizational goals, but in attracting and keeping desirable employees, creating a positive public image, and building respectful relationships with stakeholders.	
2015	Kelepile	It was revealed that, there is a significant impact of Organizational Culture on productivity and quality management in Diamond Operations Unit.	
2013	Namin et al.	It was identified the most important factors which enhance the productivity among the faculty members of the universities. According to the findings organizational	

		culture is one of the significant factor, which enhances the productivity.	
2013	Namin et al.	It was identified the most important factors which enhance the productivity among the faculty members of the universities. According to their findings empowerment is one of the significant factor, which enhances the productivity.	Empowerment
2009	Battisti and Iona	It was identified that, moderate degrees of empowering would be a contributory factor to motivate the workforce.	
2001	Capelli and Neumark	It was identified that, empowering work practices are related to greater productivity	
2008	Siebers et al.	(Capelli and Neumark, 2001; Siebers and et al., 2008).	
2013	Namin et al.	It was identified that, environmental conditions is one of the significant factor, which enhances the productivity among the faculty members of the universities.	Work Environment
2006	Islam and Shazali	It was found that, favorable working environment is one of the significant factor effect on productivity. It was identified that, a favorable working environment, such as working with a good team, having a good boss, and liking the physical surroundings in the workplace, is a contributory factor for motivating the workforce towards higher output. The presence of all these factors in the workplace could gear up the morale of workers and contributes to increased manufacturing productivity.	

2009	Battisti and Iona	It was found that, there is a strong association between favorable working environment and productivity.	
2016	Rukumnuaykita and Pholphirulb	It was found that, the non-cognitive skills such as communication is also important and seem to have positive relationship to labour productivity among Thai manufacturers.	Communication

According to the past literature (Table 3), six (06) key dimensions for Organizational Factors, such as, Leadership, Team working behavior, Organizational culture, Empowerment, Work environment, Communication system were identified.

Effect of Personal Factors on Productivity

It was identified that, Human Resource Management (HRM) has a positive impact on productivity, through employee skills, attitudes, and behavior in Greek manufacturing sector (Katou and Budhwar, 2015). According to the findings of a cross-sectional, single-respondent empirical study of 52 Japanese multinational corporation subsidiaries in the US and Russia, it was identified that, employee skills, attitudes and behaviors play a significant role in order to achieve the firm's outcomes (Park et al, 2003 Siebers et al, 2008). In addition, it was revealed that, the labour productivity of a firm tends to increase if both groups of workers develop different skills (Rukumnuaykita and Pholphirulb, 2016). Behavioral skills, such as social skills, are found to have a statistically significant effect on professional workers in Thai manufacturing sector (Rukumnuaykita and Pholphirulb, 2016). Moreover, it was identified that, the numerical skills and adaptability skill among production workers are found to have a significant impact on an overall improvement of a firm's labour productivity in Thai manufacturing sector (Rukumnuaykita and Pholphirulb, 2016). It was found that, higher degree of skills, favorable working environment and Research and Development (R & D) are important inputs to a labor-intensive manufacturing process, which is positively associated with productivity (Islam and Shazali, 2006). Employee involvement in terms of delegation of responsibility and systems of collecting proposals from employees have a positive impact on productivity (Arthur, 1994). It was revealed that, hiring workers who have a higher education has the most impact on an increase in labor productivity, followed by hiring workers with

secondary education (Rukumnuaykita and Pholphirulb, 2016). It was identified that, the personal factors such as perception of behavior, interest and needs significantly effect on organizational productivity in Sri Lankan apparel manufacturing industry (Sandeepanie and Ubayachandra, 2014). According to the research findings of Shanmugasundaram and Panchanatham (2011), it was suggested that, labour productivity can be improved by imparting knowledge and skills to the workforce by arranging training programmes with experts both from India and abroad.

Mediating Effect of Motivation on the Relationships; Relationship between HRM Functions and Organizational Productivity, Relationship between Organizational Factors and Organizational Productivity, Relationship between Personal Factors and Organizational Productivity

During the early history, employees were considered as just an input into the process of production of goods or services (Dickson, 1973). However, this concept has been changed with the Hawthorne studies which was conducted by Elton Mayo from 1924 to 1932 (Dickson, 1973). The Hawthorne studies began the human relations approach to management, whereby the needs and motivation of employees become the primary focus of managers (Bedeian, 1993). According to the findings of the Hawthorne studies, employees are not motivated solely by the money and the employee behavior is linked to their attitudes (Dickson, 1973). It was identified that, the job motivation is a main criteria and principle in human resource management (Ortiz and Tran, 2007). According to Alibakhshi and et al. (2010), one strategy for reaching ultimate goals and objectives is the motivation. According to Garderner and Lambert (1972), motivation is said to be intrinsic or extrinsic. Motivation is a complex phenomenon, which is influenced of individual, cultural, ethnic and historical factors (Ortiz and Tran, 2007). Job motivation is a main criteria and principle in human resource management (Ortiz and Tran, 2007). The key definitions given by the different scholars on Motivation are summarized below (Table 4).

Table 4: Key Definitions on Motivation

Author (s)	Year	Definition
Atkinson, J.W.	1964	Motivation is defined as the contemporary immediate influence on the direction, vigor and persistence of action.

Bartol, K.M. and Martin, D.C.	1998	Motivation is considered as a powerful tool that reinforces behavior and triggers the tendency to continue. In other words, motivation is an internal drive to satisfy an unsatisfied need and to achieve a certain goal. It is also a procedure that begins through a physiological or psychological need that stimulates a performance set by an objective.
Bedeian, A. G.	1993	Motivation is an internal drives to satisfy an unsatisfied need and the will to accomplish.
Campbell, J.P. and Pritchard, R.D.	1976	Motivation is defined as a set of independents and dependent relationships that explains the direction, amplitude and persistence of an individual's behavior holding constant the effects of aptitude, skills, understanding of a task and the constraints operating in the work environment.
Anne, M.	1999	Motivation is a term that refers to a process that draws, controls, and sustains certain behaviors and also explored that each employee has different needs and desires which means the motivation factors is different from one employee to another
Agbato, J.	1988	Motivation is an important determination of human behavior, it sit that which moves one towards a goal, thus, motivation begat performance.
Gardner, R. C. and Lambert, W. E.	1972	Motivation is about the moving employees toward doing the job and achieving the goal through rewards.
Folajin, L.	2001	Motivation is defined as generally when somebody is stimulated, the interest of a worker so as to be able to work and bring or breeds efficiency in his work.
Robin, S.P. and Decenzo, D.	1995	Motivation is defined as the willingness to exert high level of effort to reach organizational goals, conditioned by the effort's ability to satisfy some individual need.
Anne, M.	1999	Motivation is a term that refers to a process that draws, controls, and sustains certain behaviors and also explored that each employee has different needs and desires which

		means the motivation factors is different from one employee to another
Hislop, D.	2003	Motivation is a kind of force which pushes employees to do things which is a result of the individual needs being satisfied so that they have the inspiration to complete and proceed with the task.
Carver, C.S. and Scheier, M.F.	1998	Motivation is the psychological force that enables action and has long been the object of scientific inquiry

According to Bartol and Martin (1998), motivation is considered as a powerful tool that reinforces behavior and triggers the tendency to continue. In other words, motivation is an internal drive to satisfy an unsatisfied need and to achieve a certain goal (Njambi, 2014). It was revealed that, the motivation is the strength and course of behavior, these three concepts can be referred to as how hard be the individuals' efforts and for how long are they maintained (Elliot and Zahn, 2008). And, motivation is a term that refers to a process that draws, controls, and sustains certain behaviors and also explored that each employee has different needs and desires which means the motivation factors is different from one employee to another (Anne, 1999). According to Ran (2009), motivation is the process that accounts for an individual's passion, direction, and determination of effort toward attaining a goal. According to Suwannathep et al (2006) it was identified that, the human resource development process, including motivation effects on the productivity and competitiveness among middle and higher level employees in Thailand. Implementation of the motivational theories successfully over the workers level in a leading apparel manufacturer in Bangladesh, number of resulting benefits return were obtained from the motivated employees, such as the reduction of the rejection rate from 30 % to 5 % and meeting the on time delivery in Bangladesh apparel manufacturing industry (Ahmad S et al, 2010). According to Neff (2002), organizational productivity is increased by the employee motivation. Emery and Oertel (2006) revealed that, by identifying the each employee's needs; both extrinsic and intrinsic employee, motivation process can be launched and it will enhance the organizational productivity ultimately. Moreover, higher organizational productivity is significantly affected by the adequate employee motivation in Nigerian workplaces (Robinson, 2004).

As well as, Chew in 2005 identified that, salary and compensation, fringe benefits, training and development, performance appraisal systems, as well as promotion and career advancement

are significantly effect on employee motivation and employee retention among the talented cadres in an organization. According to Rao (2005), implementation of incentive scheme motivates the employees of the company to improve production level, achieve better consumption of raw materials and thus achieve higher productivity. It was found that, the effect of motivation on employee productivity is of paramount important to the organizations in Nnewi manufacturing firms (Maduka and Okafor, 2014). Moreover, it was investigated that, there is a positive relationship between employee motivation and employee productivity of executive employees in western province of Sri Lanka (Jayarathna, 2014). It was revealed that, monetary benefits such as, year-end bonus, emergency subsidies, pensions, holidays and leave have a positive impact on motivation among both executive and non-executive employees in the public sector in Taiwan (Hong et al, 1995). Moreover, it was identified that, there is a significant relationship between incentive system and employee motivation in manufacturing firms in Nigeria (Solomon et al, 2012). The higher monetary rewards motivate the higher performances towards the organizational goal achievement (Wickramasinghe and Dharmasiri, 2006). According to Sandeepanie and Ubayachandra (2014) it was found that, there is a strong positive relationship between employee motivation and productivity in Sri Lankan apparel manufacturing industry. As well as, it was identified that, different organizational factors such as feedback, co-workers, task design, supervision and rewards significantly effect on employee motivation in Sri Lankan apparel manufacturing sector (Sandeepanie and Ubayachandra, 2014). According to Ortiz and Tran (2007) interesting work, promotion and growth in the organization, personal loyalty to employees, good working conditions and tactful discipline are the key significant motivational factors for the employee motivational process. According to Al-Aamri (2010), employee motivation delivers long-term benefits in the form of high productivity the employee's motivation has a significant direct impact on organizational productivity and growth in private sector organizations in Malaysia. According to Armstrong (2006) employees, who are motivated, produce a high quality work. Malik et al (2011) identified that, there is a significant relationship among all factors; employee's performance and motivation towards the organizational effectiveness. That results showed that increased employee's performance accelerate organizational effectiveness (Malik et.al, 2011). According to Malik (2011), as the employees get self-motivated, spontaneously the organizational effectiveness moves in a positive way. There is a positive and direct correlation between motivation and productivity among organization's employees and being careful about fulfilling the motivation factors causes a considerable improvement (Alibakhshi, 2010).

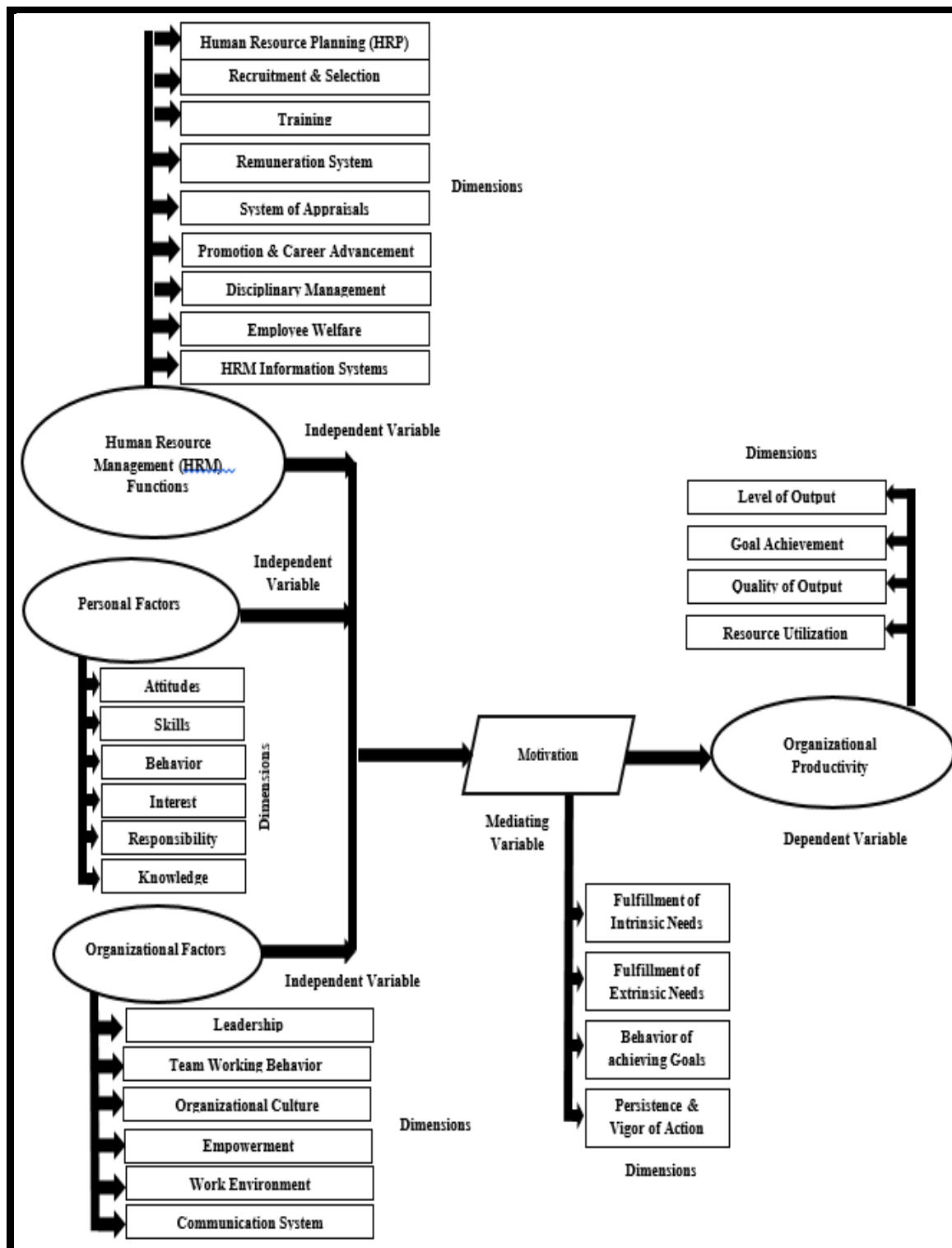
DISCUSSION AND CONCLUSION

Based on the findings of the archival method launch under the research study on “dynamics in productivity with the intervention of HRM”, four main variables are identified. Organizational Productivity is identified as the dependent variable of the study. And, the identified independent variables are HRM Functions, Organizational Factors and Personal Factors. Motivation is identified as the mediating variable.

Enhancement of organizational productivity depends upon the efficiency and effectiveness of the management of key HRM functions by the organizational top management. The key HRM functions concerned are Human Resource Planning (HRP), Recruitment and Selection, Training, Remuneration System, System of Appraisals, Promotion and Career Advancement, Disciplinary Management, Employee Welfare, Human Resource Management Information Systems (HRMIS). Moreover, enhancement of organizational productivity depends upon the effective and efficient management of different organizational factors such as leadership, team working behavior, organizational culture, empowerment of the employees, work environment of the company and the existing communication system of the organization. Furthermore, enhancement of organizational productivity depends upon the personal factors such as attitudes, skills, behavior, interest, responsibility and knowledge of the employees. Moreover, there is a mediating effect of Motivation on the three main relationships identified; relationship between HRM functions and productivity, relationship between organizational factors and productivity, relationship between personal factors and productivity.

Finally, a model was developed based on the findings of the archival method (Figure 4.1). The developed model can be utilized for the future research studies on dynamics of the productivity with the intervention of HRM with special reference to the manufacturing industry. This model can be utilized for the comparative studies between public sector and private sector manufacturing industries as well. Ultimately, the identified pool of literature on the dynamics of productivity with the intervention of HRM is a tremendous yield in filling the gaps of this highly important HRM research filed.

Figure 1: The developed Model for the Dynamics in Productivity with the intervention of HRM



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Developing a Theoretical Framework for understanding eLearning Systems Success

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Abstract

Effective implementation, management, and success of e-Learning systems have drawn the attention of many researchers. However, e-Learning systems success research lacks models and frameworks addressing organisational dimensions along with lecturer and learner dimensions. Hence, the objective of this study was to explore the dimensions of e-Learning systems success to develop a broad framework to understand the e-Learning systems success dimensions. The overall success of an e-Learning system comprises a number of dimensions, all reflecting different aspects of e-Learning systems success. Based on a comprehensive review of literature, a three tier multidimensional framework of e-Learning systems success was derived. The dimensions are categorised as organisational dimensions, lecturer dimensions, and learner dimensions. The framework constitutes a source of ideas for e-Learning systems success dimensions appropriate for particular contexts. To develop a specific model, the relevant dimensions are to be adopted from the framework. The framework could be validated by formulating e-Learning systems success models that could be validated against survey data.

Key Words: e-Learning, e-Learning systems success, Learning management systems, Lecturer, Learner

1. INTRODUCTION

e-Learning refers to delivering learning by using a variety of electronic media, especially Internet technologies (Ozkan & Koseler, 2009). More broadly, e-Learning is an approach to teaching and learning, representing all or part of the educational models applied, that is based on the use of electronic media and devices as tools for improving access to training, communication and interaction and that facilitates the adoption of new ways of understanding and developing learning. (Sangrà et al., 2012). According to Rosenberg (2001, p.28), the three fundamental criteria for e-Learning are: (1) it is networked; (2) it is delivered to the end user via a computer using Internet technology; and (3) it focuses on the broadest view of learning that goes beyond the traditional paradigms of teaching and learning.

Information technology deployed at organizations, such as tertiary education providers, to enable e-Learning leads to organizational e-Learning systems—a new type of information systems. Such e-Learning systems may be based on Learning Management Systems (LMS) (Lonn &Teasley, 2009; Almrashdeh et al., 2011), such as Moodle or Blackboard. Further e-Learning capabilities may be provided by adding specialized software, such as Adobe Connect, with the full set of e-Learning tools supported by the organization forming the organisation's e-Learning system. Occasionally, innovative lecturers may provide e-Learning by using new tools that are not part of their organization's e-Learning system.

The emergence of large scale e-Learning systems is one of the most significant developments in the information systems (ISs) industry (Wang et al., 2007). Thus, the traditional context of education has encountered dramatic changes with the emergence of Internet-based teaching and learning (LeePost, 2009). According to a survey conducted by the UK Chartered Institute of Personal Development (2011), 53% of organisations have reported that they have increased their use of e-Learning in 2010, and over 90% of public organisations have reported that they were using e-Learning during that period.

The effective use of information technology (IT) in teaching and learning has been viewed as having the potential to improve the quality of learning as well as access to education and training (Gilbert et al., 2007). These technologies can be utilized to respond to the dynamic demands within the sector such as more flexible learning, expansion of university services to national and international markets and for more cost-effective delivery of higher education (Alfahad, 2012). According to Ozkan et al. (2009), e-Learning has become the new paradigm in education because of its convenience, reduction of costs, and flexibility. Further, Rosenberg (2001) identified cost effectiveness, availability anywhere and anytime, building communities, and providing valuable customer service as several benefits of e-Learning. Dailey-Hebert and Donnelly (2010) suggested that by combining service-learning and eLearning pedagogies, educators can initiate innovative pedagogical approaches that are aligned to the personal characteristics and educational preferences of the millennial learners.

Many higher education institutions are motivated to introduce innovative e-Learning programmes by expanding their educational boundaries. However, the development and implementation of successful e-Learning systems is quite challenging to higher education institutions and for business organisations because of the size of the investment required and

because of the uncertainty of the outcomes (Govindasamy, 2002). Thus, an understanding of the dimensions of e-Learning systems success is essential for the development and delivery of successful e-Learning initiatives (Lee et al., 2009) and for continuous improvement of existing systems (Ozkan & Koseler, 2009). Govindasamy (2002) also stated that measurement of e-Learning systems success is essential to develop better e-Learning initiatives and to yield a justifiable return on investment.

Large investments on e-Learning and rapid growth in the adoption of e-Learning have motivated researchers to study the success of e-Learning systems and the issues related to their implementation (Lee et al., 2009; Lee & Lee, 2008; Park, 2009). A considerable number of studies have attempted to use measures such as user satisfaction, user acceptance, learning effectiveness, and e-Learning continuance intention in assessing e-Learning systems success. However, there is no universally accepted definition for e-Learning systems success.

As e-Learning systems are ISs, e-Learning systems success can be viewed as ISs success. Saarinen (1996) reviewed different definitions of systems success in Management Information Systems literature, and found that most of the researchers defined information systems success as a favourable or satisfactory result or outcome from the perspective of different stakeholders. At the same time, he pointed out the difficulty of clearly defining what system success is because of the need to reconcile different views regarding the content and the scope of ISs success.

DeLone and McLean (1992, 2016) emphasised that ISs success is multidimensional, with different dimensions affecting each other. They suggested generic dimensions, including the quality of the processing system itself, the quality of the information provided by the system, system use by the users, user satisfaction, and the impact on individuals or organisations. They suggested that ISs success studies in specific contexts would be more meaningful if multidimensional measures are used systematically combining individual success dimensions in an appropriate manner to fit into a particular study context.

e-Learning systems have been studied by different research communities, such as Management Information Systems, Education, and Psychology, as they are multidisciplinary by nature (Byrd, 2012; Kiteley & Ormrod, 2009; Nair & George, 2016; Ozkan & Koseler, 2009). However, most of the e-Learning research to date relied on a limited view of e-Learning system success, with most studies using a single success dimension (such as learner satisfaction or

learning effectiveness). There are e-Learning systems success studies (such as Aparicio et al., 2017; McGill & Renzi, 2014) that follow DeLone and McLean (2003) in representing systems success as multidimensional, with the dimensions affecting each other. These studies, however, focus on a single type of stakeholder, namely, learners. There are no frameworks or models of e-Learning systems success that would account for multiple stakeholders. Thus, the objective of this study is to identify the various facets of the concept of e-Learning systems success and to organize them as a multidimensional framework.

2. LITERATURE REVIEW

In order to achieve the above identified objective, a three tier multidimensional framework of e-Learning systems success was derived based on a review of the literature. The overall success of an e-Learning system comprises a number of dimensions, all reflecting different aspects of e-Learning systems success. The dimensions are categorised as organisational dimensions, lecturer dimensions, and learner dimensions. The review allowed proposing a multidimensional framework organising the dimensions of e-Learning systems success suggested by the literature (see Figure 2). The following subsections provide a discussion of the literature on which the framework was developed.

2.1 Organizational Dimensions

This section presents the organisational dimensions of e-Learning systems success.

2.1.1 Quality of the e-Learning development and implementation process

e-Learning development and implementation refers to the process used to develop and implement organisation-wide e-Learning. Organisations develop and implement e-Learning systems by executing organisation-wide e-Learning programmes (Howell, et al., 2004). Recent research posited the importance of the quality of the e-Learning development and implementation process for e-Learning systems success (Blackburn, 2017; Deepwell, 2007; Marshall & Mitchell, 2005). In addition, Larsen (2003) found that research in information systems maturity is limited, and suggested that the role of information systems maturity as a dimension of information systems success and expressed it as an important area for future research.

Howell, Saba, Lindsay, and Williams (2004) conducted a literature review to formulate strategies for faculty adoption of e-Learning systems. According to them, e-Learning programme evaluation, professional development for instructors, instructor involvement in the

process of e-Learning development, and assessment of instructor views for continuous improvement of the e-Learning initiatives are all important for successful faculty adoption of e-Learning systems and faculty satisfaction. Therefore, in this research, the quality of the e-Learning development and implementation process is considered as an e-Learning systems success dimension and categorised as an organisational dimension within the e-Learning system success framework (see Figure 2).

2.1.2 Quality of the institutional support to system users

Quality of the institutional support to system users refers to the quality of the support provided by the organisation to the lecturers and to the students that are using the e-Learning system. Support to lecturers may involve technical support and support with pedagogical aspects of using e-Learning (Phillips & Merisotis, 2000); support to learners may involve technical support as well as provision of generic information services, such as access to library resources online (Selim, 2007). Previous research identified institutional support to system users as an important dimension of systems success (Almpanis, 2015; Selim, 2007; Wang & Wang, 2009). Institutional support to instructors was found to be influential in instructor decisions to adopt e-Learning systems (Samarawickrema & Stacy, 2007). Wang and Wang (2009) also identified service quality as a determinant of instructor adoption of e-Learning systems. Therefore, in this study, institutional support to e-Learning system users was categorised as an organisational dimension within the e-Learning systems success framework (see Figure 2).

2.1.3 Quality of the e-Learning system

Quality of e-Learning system refers to the quality of the set of technologies (and their implementations) used for e-Learning throughout the organisation with the explicit support of the organisation. The construct of quality of the e-Learning system (defined similarly to the present study) has been highlighted by a number of authors (Abdous & Yoshimura, 2010; Hadullo & Omwenga, 2017; Mahdizadeh et al., 2008). A few e-Learning researchers examined quality of the e-Learning system from a lecturer perspective (Wang et al., 2010; Wang & Wang, 2009; Yengin et al., 2011). In addition to the studies from the lecturer perspective discussed above, quality of the e-Learning system construct was extensively studied from the student perspective (Adeyinka & Mutula, 2010; Chen, 2010; Chen, 2012; Chen et al., 2009; Ozkan & Koseler, 2009; Waheed, 2016). In this study, quality of the e-Learning system is categorised as

an organisational dimension within the e-Learning systems success framework (see Figure 2) because the e-Learning system is provided to its users by the organisation.

2.2 Lecturer Dimensions

This section presents lecturer dimensions of e-Learning systems success.

2.2.1 Lecturer use of the e-Learning system

Lecturer use of the e-Learning system refers to the extent to which a lecturer uses the functionalities provided by the e-Learning system (in other words, to the usage of the e-Learning system by the lecturer). System usage is a widely applied measure of IS success. Indeed, IS success is often defined as the degree to which a system is accepted and used (Davis, 1989) and user acceptance and usage is an important measure (DeLone & McLean, 1992, 2016). Without consideration of user behaviour regarding acceptance and usage of a system, even the best systems cannot be successful. Thus, in this study, system use was considered as an e-Learning systems success dimension. This dimension is categorised as a lecturer dimension within the e-Learning systems success framework (see Figure 2).

2.2.2 Lecturer satisfaction

Lecturer satisfaction refers to the extent to which the e-Learning system meets the lecturer's expectations. User satisfaction is a commonly used construct in evaluating IS success (Doll & Torkzadeh, 1988; Vaezi, 2013, 2016). The comprehensive review of early IS success literature by DeLone and McLean (1992), covering 180 journal articles, revealed that user satisfaction dimension was the most widely used measure of IS success up until that time. Similarly, lecturer satisfaction is considered an important construct in developing and implementing successful e-Learning systems (Bolliger & Wasilik, 2009; Wasilik & Bolliger, 2009; Yengin et al., 2011). Lecturer satisfaction is an influential construct in providing learners with high quality learning experiences, as shown by Wasilik and Bolliger. The review of literature highlighted the fact that user satisfaction is one of the most frequently reported success measures in e-Learning systems success research.

However, although the lecturer plays a critical role in implementing successful e-Learning systems, there is little e-Learning systems success research that is focused on evaluating lecturer (rather than learner) satisfaction. Thus, in this study, lecturer satisfaction is included as

another dimension. Lecturer satisfaction is categorised as a lecturer dimension within the e-Learning systems success framework (see Figure 2).

2.2.3 Quality of the e-Learning content

Quality of the e-Learning content refers to the quality of content provided by the lecturer to learners via the e-Learning system. Quality of the e-Learning content is another dimension commonly used in studies of e-Learning systems success (Chen, 2010; Chen, et al., 2009; Ozkan et al., 2009; Vlachopoulos, 2016). In previous research, e-Learning content quality was used as an independent construct affecting one or more of the dependent constructs. Similarly, quality of information produced by ISs was commonly studied in ISs contexts (DeLone & McLean, 2003; Makau et al., 2017; Wang, 2008) and found to be an antecedent to system use and user satisfaction.

This section highlights the importance of quality of the e-Learning content as a determinant of e-Learning systems success. Thus, in this study, quality of the e-Learning content was considered as an e-Learning systems success dimension (see Figure 2). The quality of the e-Learning content dimension was categorised under lecturer dimensions within the e-Learning systems success framework because e-Learning content is developed by the lecturer.

2.2.4 Quality of the lecturer support to learners

Quality of the lecturer support to learners refers to the quality of support, such as responding to student queries, provided by the lecturer to learners via the e-Learning system. Another construct identified as a determinant of e-Learning systems success is quality of the lecturer support provided to learners via the e-Learning system. Several studies (Lee et al., 2018; Lee & Lee, 2008; Roddy et al., 2017) conceptualised the service quality dimension used in IS literature in the e-Learning context as the lecturer support to learners. Therefore, in this study, quality of the lecturer support to learners is categorised as a lecturer dimension within the e-Learning systems success framework (see Figure 2).

2.2.5 Lecturer self-efficacy

Lecturer self-efficacy refers to the extent to which the lecturer believes that he/she has the ability to effectively use the e-Learning system to promote and to manage learning by learners. Self-efficacy is defined as individuals' judgment of their abilities to plan and carry out the necessary behaviours in order to achieve specific goals (Bandura, 1997). Self-efficacy is an important construct in determining an individual's behavioural intention and actual behaviour (Pertl, 2010). Therefore, in this study, lecturer self-efficacy was categorised as a lecturer dimension within the e-Learning systems success framework (see Figure 2).

2.3 Learner Dimensions

This section presents learner dimensions of e-Learning systems success.

2.3.1 Learner use of the e-Learning system

Learner use of the e-Learning system refers to the extent to which the learner is using the e-Learning system for learning. Researchers have conceptualised e-Learning system success via the actual or self-reported use of the e-Learning system (Raaij & Schepers, 2008). Carswell and Venkatesh (2002) identified three acceptance outcomes, namely, involvement, engagement, and use of different media. Some of the prior studies examined usage behaviour using the IS Success Model (DeLone & McLean, 2003) as a theoretical basis. These studies considered information quality, system quality, and service quality as direct antecedents of system usage. In view of the strong empirical support in prior studies, in this study, learner use of the e-Learning system was categorised as a learner dimension within the e-Learning systems success framework (see Figure 2).

2.3.2 Learner satisfaction

Learner satisfaction refers to the extent to which learning via the e-Learning system meets the learner's expectations. Learner satisfaction is widely used as a construct in e-Learning systems success research. The level of user satisfaction is related to a user's willingness to continue using new technology (Kim & Malhotra, 2005). Much of the recent research on e-Learning systems success used learner satisfaction as the dependent variable (Ferguson & DeFelice, 2010; Lee et al., 2018; Paechter et al., 2010; Palmer & Holt, 2009). The literature highlights the importance of assessing and understanding learner satisfaction in online learning environments. Taken together, these studies suggest that learner satisfaction is an important

dimension of e-Learning systems success. Therefore, in this study, learner satisfaction is included as a learner dimension within the e-Learning systems success framework (see Figure 2).

2.3.3 Level of learning

Level of learning refers to the quality of learning attained by the learner. Student learning is a construct frequently used in evaluating the success of online learning environments (Ferguson & DeFelice, 2010; Rasouli et al., 2016; Sher, 2009; Wu et al., 2010; Yukselturk & Bulut, 2007). Chou & Liu (2005) defined student learning as the extent to which learning goals (target knowledge and skills) are achieved by students. e-Learning researchers typically evaluate student learning or learning effectiveness by looking at student performance. The discussion on student learning has highlighted the wide use of the student learning construct in measuring e-Learning systems success. Therefore, in this study, student learning is categorised as a learner dimension within the e-Learning systems success framework (see Figure 2). Student learning is conceptualised emphasising the level of learning achieved.

2.3.4 e-Learning continuance intention

e-Learning continuance intention refers to learner intention to continue using e-Learning in the future. e-Learning continuance intention is based on the IS continuance intention introduced by Bhattacharjee (2001) in the general IS success context. The theoretical models developed to examine IS usage were mainly developed for initial acceptance and usage of systems (Ajzen, 1991; Davis, 1989). However, Bhattacharjee argued that while initial acceptance and usage has importance in terms of realising success, long term success depends on continued use rather than first time use. To date e-Learning continuance intention has underpinned number of studies in e-Learning success both in the higher education sector (Almahamid & Rub, 2011; Sorebo et al., 2009; Ismail et al., 2011) and in business organisations (Roca & Gagne, 2008). Therefore, in this study, e-Learning continuance intention is categorised as a learner dimension within the e-Learning systems success framework (see Figure 2).

2.3.5 Learner self-efficacy

Learner self-efficacy refers to the extent to which the learner believes that he/she has the ability to effectively use the e-Learning system to learn. A number of studies examined how learner

ability and confidence in using e-Learning systems affect their satisfaction and learning (Artino et al., 2010; Hagos et al., 2016; Wu et al., 2010). Learner self-efficacy is an important determinant of academic achievement in e-Learning (Artino et al., 2010; Zimmerman & Kulikowich, 2016). Also, Lin et al. (2008) found that self-efficacy is a determinant of learner satisfaction. The findings of the prior studies indicated that self-efficacy is a determinant of learner satisfaction and future intention to continue e-Learning. The above discussion highlights the significant impact of learner self-efficacy on other e-Learning systems success dimensions: learner satisfaction, student learning, and learner intention to continue e-Learning in future. Therefore, in this study, learner self-efficacy is included as a learner dimension within the e-Learning systems success framework (see Figure 2).

3. E-LEARNING SYSTEMS SUCCESS FRAMEWORK

The review of IS success and e-Learning systems success literature provided the theoretical foundation for the study. The broad nature of the objective of the research necessitated a wide coverage of literature to provide sufficient understanding of the dimensions of e-Learning systems success. Literature relating to both e-Learning systems success and ISs success, it is evident that the success dimensions suggested or implied by the existing studies are often similar to one or more of the success dimensions identified in the IS success model by DeLone and McLean (2003), and therefore, are related to the DeLone and McLean IS success model.

Quality of the institutional support and quality of the e-Learning system (corresponding to service quality and system quality in the IS success model) were categorized as organisational dimensions, as these dimensions are determined at organisational level. As it was found, that these dimensions do not cover all of the relevant e-Learning systems success facets at organisational level, another dimension was added reflecting quality of the e-Learning development and implementation process, for which there was support in the literature (inspired by the process maturity theory, Larsen, 2003).

Some of the dimensions of e-Learning systems success revealed in the literature (in particular, lecturer and learner self-efficacy examined in this research) can be traced to self efficacy theory (Bandura, 1997). Self efficacy theory is a widely accepted theory explaining individual behaviour. It focuses on the relationships among behaviour, cognition, and environment (Miltiadou & Savenye, 2003). Thus, the overall theoretical foundations behind the e-Learning systems success framework are depicted in the diagram in Figure 1.

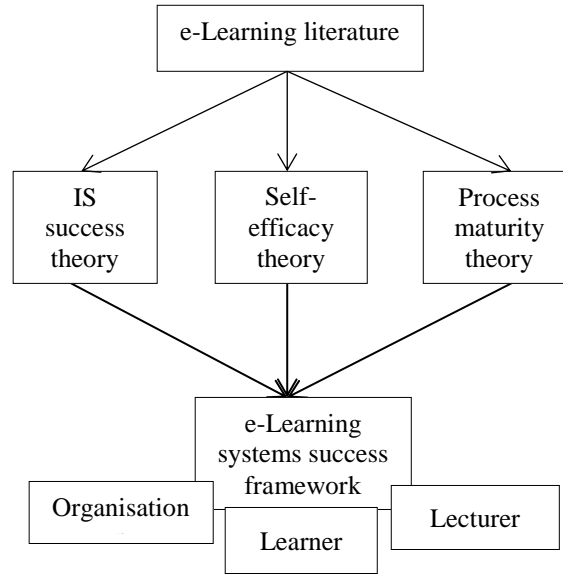


Figure 1: Theoretical foundations of the framework

The dimensions of e-Learning systems success identified in the review are summarised in the diagram in Figure 2. The areas in the diagram represent the division of e-Learning systems success dimensions into three tiers, and the arrows indicate the overall direction of the flow of causality. The diagram (see Figure 2) constitutes a framework for developing models of e-Learning systems success for use in specific contexts.

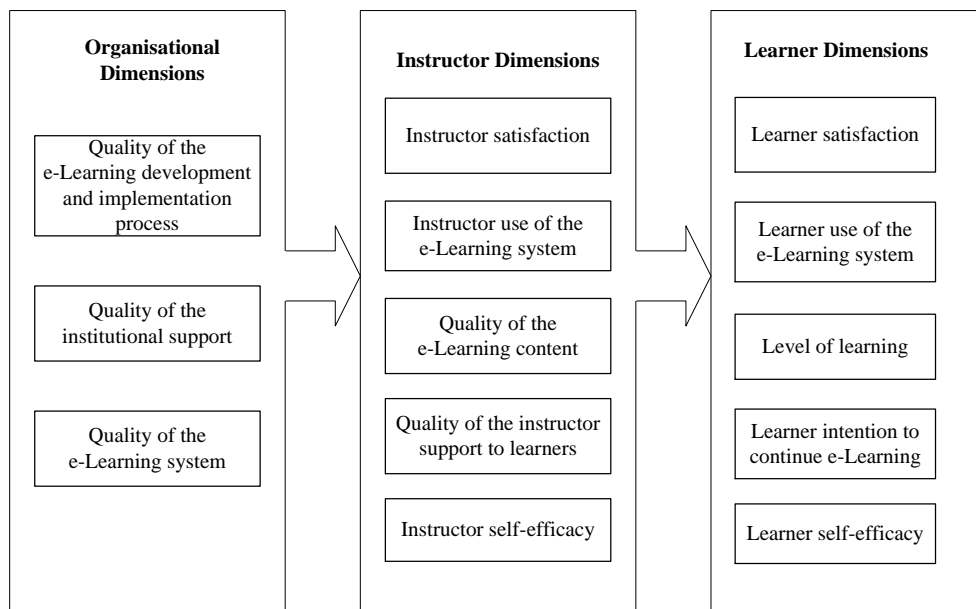


Figure 2: e-Learning systems success framework formulated based on the literature.

4. CONCLUSION

A model of e-Learning systems success is a special case of the model of IS success (Alsabawy et al., 2012; DeLone & McLean, 2003; Petter et al., 2013). It is a set of interrelated dimensions reflecting the relevant facets of e-Learning systems success from the perspective of e-Learning system stakeholders. Thus, for a dimension included in the framework to be seen as valid in a particular context, it has to be tested as a part of an e-Learning systems success model. Therefore, the framework, by summarising the literature, constitutes a source of ideas for e-Learning systems success dimensions appropriate for particular contexts. The framework can be seen as a descriptive model according to the classification of types of models relevant to management information systems research provided by Gregor (2006). To develop a specific model, the relevant dimensions are to be adopted from the framework (possibly also including context-specific dimensions not included in the framework), and specific hypotheses are to be developed, with overall direction of the hypotheses likely to coincide with the arrows in the diagram. The framework could be validated by formulating e-Learning success models that could be validated against survey data.

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Effect of Trust on Supply Chain Collaboration: Enhancing Downstream Logistics Efficiency of Agricultural Supply Chains

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Abstract

With the growing world population and diminishing agriculturally productive land, the global agricultural production has become barely sufficient to meet the requirements of the world population. As a consequence, agricultural logistics has emerged in order to ensure that agricultural productions are not spoiled on the way to the consumer and reach the consumer with better quality. Today the consumers are more demanding on food quality and sustainability, resulting the requirement of redesigning the Agricultural Supply Chain (ASC) networks and establishing best practices in place, especially in the perspective of logistics. Thus, infrastructure such as, temperature controlled storage facilities and vehicles, access to cutting edge technologies, real time access to information regarding demand, supply, weather conditions ,price fluctuations etc., proper handling of surplus and agricultural value addition should be introduced to the traditional ASCs. Although having sophisticated infrastructure is important to enhance the efficiency and the productivity, it is difficult for small farmers, retailers, wholesalers, etc., to invest on these new-fangled infrastructures. It's a known fact that collaboration is a strategic decision which aids in gaining competitive advantages, superior supply chain performance and it is a key for achieving logistical performance excellence. In order to maintain a close and fruitful relationship with the participants of supply chain, trust has been considered as a core factor. Accordingly, this study is concerned with the applicability of two concepts, "Trust" and "Collaboration" in resolving downstream logistics issues in less sophisticated, and less organized supply chains, such as the ASCs, to improve logistics efficiency. This scrutiny presents the findings of a comprehensive and systematic review of literature in the areas of trust, collaboration and logistics efficiency of ASCs and subsequently presents a conceptual framework for factors involved in trust building and collaboration in improving downstream logistics efficiency of ASCs.

Keywords: Agricultural supply chains, Collaboration, Downstream Logistics Efficiency, Trust

INTRODUCTION

Agriculture is the foremost method of appeasing the hunger of world's population. As the population increases, agricultural production and supply also requires to be increased, in order to meet the increasing demand which can only be satisfied by efficient

logistics(Chandrasekaran & Ranganathan, 2017). Hence, agriculture commodity has to be transported efficiently from farmers to the consuming regions, where agriculture supply chain management plays a prominent role (Ahumada, 2009; Etemadnia, 2015; Chandrasekaran & Ranganathan, 2017) but, the downstream agricultural supply chains are governed by numerous number of inefficiencies and issues which considerably decline the performance and efficiency of downstream logistics. ASCs will continue to deteriorate unless major operational improvements are implemented (Taylor, 1994) and strategic supply chainmanagement is of growing importance within the agricultural sector(Mehmann & Teuteberg, 2016).

Many researchers have emphasized collaboration as a strategic decision to achieve successful and efficient supply chains. Supply chain collaboration enables firms to achieve better performance in terms of cost reductions, revenue enhancements and flexibility in dealing with supply and demand uncertainties(Simatupang & Sridharan, 2002).Collaboration significantly influences logistical service performance, which implies that firms should promote cooperation and collaboration across their supply chain processes to achieve logistical efficiency and effectiveness(Stank, et al., 2001). Thus, based on the previously established fact, collaboration has a positive impact on logistical efficiency of supply chains, this study explores the concept in the context of the agro-food industry to understand how collaboration in an ASC can be conjoined to solve the downstream agricultural logistics issues and how it leads to more efficient downstream logistics.

Trust is a fundamental concept characterizing most inter-personal and inter-organizational relationships(Mouzaz, et al., 2007). A successful supply chain performance is based on a high level of trust and a strong commitment among supply chain partners(Kwon & Suh, 2004). Accordingly, this study scrutinizes the factors affecting the trust between supply chain partners of ASCs and effect of trust on enhancing supply chain collaboration.

There are various approaches and models developed to enhance the logistics efficiency of supply chains. There are many studies carried on this milieu. This study meticulously and systematically analyzes the published literature with the objective of identifying the knowledge gaps in improving downstream logistics efficiency of ASCs and explores the applicability of two concepts, “Trust” and “Collaboration” to resolve the downstream agricultural logistics issues inimproving the logistics efficiency. These findings would be of immense importance for ASC stakeholders to accomplish their goal to maximize the profits while providing a superior service to the consumers. This paper sheds new light on the application of the two

concepts, trust and collaboration in low value, high risk and volatile ASCs with less financial investments.

The remnants of the paper are structured as follows: the methodology of this study, the results of the systematic literature review, cessation of the paper by giving conclusions and offering some perceptions on future research.

METHODOLOGY

The approach adopted to investigate the state of knowledge in the assorted area is the content analysis; which is based upon an explicit sequence of steps with which to systematically organize elements of text so as to enable an investigator to meaningfully interpret and make inferences about the patterns in the content of the overall body (Bowen & Bowen, 2008). The foremost step of the analysis was to search for articles related to the study. There were number of studies that have been conducted by considering various aspects of logistics efficiency, collaboration and trust. This search resulted in altogether fifty-one articles. These articles were further screened based on the title and the abstract in the next phase and selected twenty-six articles. Full text of each of these articles were reviewed and eliminated the articles which are not pertinent to the scope of the study. Thus, in total fifteen articles were included in the study. The selection process is shown in the Figure 1. All the articles that were reviewed are listed on this paper under the list of references. It is believed that the papers selected and reviewed were a considerable representation of the exhaustive body of the research work being accomplished in this area of study.

A comprehensive literature review was done with the intention of finding the effect of trust and collaboration on the downstream logistics efficiency of ASCs and revealing the research gap in the area. Only contemporary articles which were published within the years of 1997 and 2018 were chosen for the review with the intention of enhancing the relevance to the current context.

The content of the articles was categorized under the factors on which the researches were carried on and profound content analysis has been conducted.

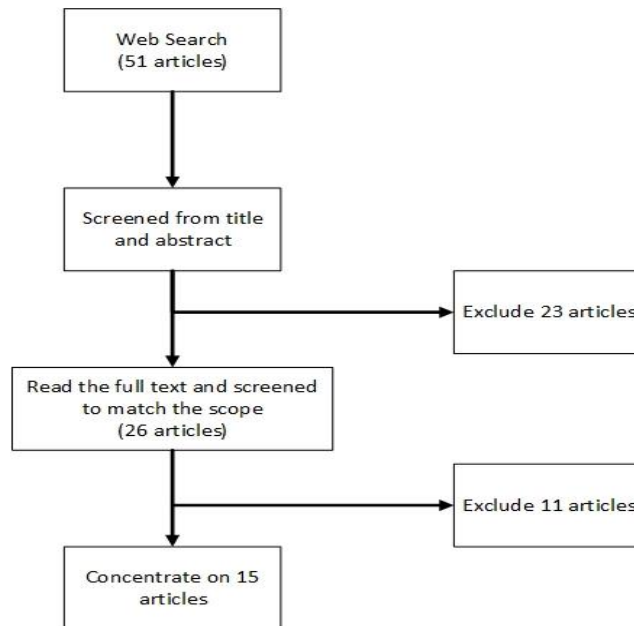


Figure 13: Literature screening for the Meta-analysis

MAIN RESULTS OF THE REVIEWED STUDIES

Logistics Issues of ASCs

Logistic performance of the ASCs mainly depends on preserving the quality of the agro products. A study was conducted to find the opportunities for improving the quality controlled logistics of agricultural supply chain networks and it discusses the prospects of using real time product quality information for redesigning and management of ASCs, and presents a preliminary diagnostic instrument for assessment of ‘critical quality’ and ‘logistics control’ points in the supply chain network. According to the results of the paper, supply chain stakeholders should define consumer preferences on product quality attributes and definition of the consumer product acceptance period, define the critical quality points in the supply chain, that have major impact on the product quality attributes, measure product quality attributes and use quality change models to predict product quality in all supply chain stages, log data and exchange of (demand and supply) information with supply chain partners realtime, use local dynamic logistics and quality control in each stage to optimize product quality, use ASC and management practices to direct specific products batches under specific environmental conditions to specific market segments in order to preserve the quality of the agro products and thereby improve the logistic performance (Van der Vorst, et al., 2011).

(Bottani, et al., 2014) Proposed an integrated approach to increase sustainability and efficiency of logistics activities. This study has proposed a detailed framework which aids in designing a sustainable and efficient logistics scenario for food industrial districts and to evaluate the subsequent economic and environmental performance. The framework takes into account the main logistic processes of a targeted cluster of independent companies, and helps in designing a new scenario where those processes are managed in a pooled way. The proposed framework represents a quantitative approach to improve the logistics efficiency in terms of warehousing, transportation, distribution and workforce organization of food districts through aggregation and integrated management of logistics processes.

A study on countermeasures of the logistics efficiency of fresh agricultural products in China states that improving the present logistics efficiency of fresh agricultural products is important as it is good for both the producers and the consumers' vital interests and it is necessary for the improvement of competitiveness. Researchers have identified, fragmented production, high lost rates in the logistics and lagging behind of the logistics infrastructure that leads to high logistics costs as the main problems regarding the current scenario. Order production to promote agricultural products production towards to large scale production, develop the advanced way of cold-chain logistics, greatly develop the third party logistics service, develop supermarket sales mode, and bring in different kinds of advanced logistics technology are the measures that have been identified through this study in order to improve the logistics efficiency of fresh ASCs (Zhang, 2015).

(Liljestrand, 2017) conducted a study with the purpose of expanding the understanding of how logistics can reduce food wastage in food supply chains using a multiple-case study conducted in three Swedish food supply chains of meat, fruit and vegetables. This scrutiny has identified mismatch of demand and supply, mismatch of shelf life and lead time, mismatch of assortment and shelf life and mismatch of packaging and logistics systems as the causes of food wastage and presents nine logistics solutions to overcome the wastage. Logistics solutions as presented by the study are, collaborative forecasting, division of lead time, managing level of safety stock, make to order flows, measure of service level, price reductions, product group revisions, visualizing damaged packaging and packaging development.

Supply Chain Collaboration

The study on "*Collaborative commerce or just common sense? Insights from vegetable supply chains in Ho Chi Minh City*" has demonstrated that collaborative commerce is not restricted to trade in branded products between large, multi-national organisations and supply chains and

the applicability of the concept to highly volatile ASCs. Findings of the paper are based on a research conducted in and around Ho Chi Minh City in Vietnam. This study illustrates that collaborative trading practices can also be used for the management and development of the food supply chains, old and new, which is generally regarded as low value through strong collaborative culture and trading environment that are conducive to information sharing and supply chain coordination. This study has used two case studies, one from supermarket supply chains and one from traditional vegetable supply chains which emphasize the contribution of collaboration for the performance of the fresh vegetable supply chains. Paper elaborates the significance of the information sharing, joint planning and the supplier development to reduce the risk of non-compliance in collaboration. (Cadilhon, et al., 2005)

A case study based research was done in (Matopoulos, et al., 2007) on “*A conceptual framework for supply chain collaboration: empirical evidence from the agro-food industry*” to investigate and understand collaboration in the context of the agro-food industry and how a range of factors impact on the intensity of collaboration through a case study at the grower processor interface. This research revealed that while there is a true need for supply chain collaboration, the structure of the agro-food sector along with the nature of products affects the intensity of collaboration, to more operational and tactical level, as well as to logistics-related activities. In contrast to the case study, elements of trust, power, dependence, and risk/reward sharing in establishing and maintaining supply chain relationships, as well as the role of the above elements in selecting partner, deciding upon collaboration width and depth are important. Trust affects the intensity of collaboration limiting the depth and the width of collaboration.

The study on “*Collaboration and trust in two organic food chains*” attempted to determine the presence of collaboration along the Finish organic food chain from farmers to retailers. In this study collaboration is expressed in terms of communication and trust between the actors. Findings of the research suggests that frequent communication is not an indication of collaboration, and when building trust, it is less important than the quality of communication. Trust is the prerequisite for collaboration. Particularly the competence demonstrated as an exchange partner, seemed to hold the key for a trustful relationship. Power imbalance and the different value systems were not insuperable obstacles for trustful and collaborative relationship. (Kottila & Rönni, 2008)

A research on “*Towards a grounded view of collaboration in Indian agro-food supply chains*” highlighted the perceptions of buyers and suppliers towards each other. This study presents a comprehensive framework and add a generic model to understand supply chain collaboration

through content analysis of interview transcripts supplier selection, joint planning and information sharing were found to be main antecedents while profits; waste reduction and supply chain efficiency were major outcomes of collaboration. According to the research findings, the suppliers are usually more doubtful of the buyers and do not trust them easily. Hence, it is very important to have good relations with suppliers and should make provide incentives to suppliers for collaboration.(Aggarwal & Srivastava, 2016)

Trust among Supply Chain Partners

As stated by a study done in 1997, supplier firms must make significant investments to develop and maintain customer trust. For suppliers, the value of such efforts is most apparent when high levels of buyer trust lead to more favorable purchasing outcomes for the supplier. Results of this study suggest that though the process of building customer trust is expensive, time consuming, and complex, its outcome in terms of forging strong buyer-seller bonds and enhanced loyalty could be critically important to supplier firms. The authors integrate theory developed in several disciplines to determine five cognitive processes through which industrial buyers can develop trust of a supplier firm as calculative process (Trustor calculates the costs and/or rewards of a target acting in an untrustworthy manner), Prediction process (Trustor develops confidence that target's behavior can be predicted), Capability process (Trustor assesses the target's ability to fulfill its promises), Intentionality process (Trustor evaluates the target's motivations) and Transference process (Trustor draws on "proof sources," from which trust is transferred to the target).(Doney & Cannon, 1997)

(Sako & Helper, 1998) Examined the determinants of inter-organizational trust using survey data from automotive industry. The study has defined trust and derived a model of its determinants using transaction cost economics, game theory and sociological exchange theory. As stated by the study, there are three forms of trust as, contractual trust (trusting that other party will carry out its contractual agreements), competence trust (trusting that other party is capable of doing what it says it will do), and goodwill trust (trusting that other party make an open-ended commitment to take initiatives for mutual benefit while refraining from unfair advantage taking). According to the study, the conditions which facilitated the creation and sustenance of trust were found to include long-term commitment, information exchange, technical assistance, and customer reputation.

Empirical analysis done by Robert B. Handfield and Christian Bechtel presents a model that suggests the dedication of site-specific assets by a supplier is an important precursor to greater human asset investments and can lead to a greater level of trust between the parties. Managers

who are keen on improving supply chain responsiveness should work towards building greater levels of trust with key-input suppliers, and explore opportunities for colocation and information sharing on a regular basis. This model was tested with data gathered from a sample of purchasing managers in North American manufacturing firms. (Handfield & Bechtel, 2002) According to the paper “Building trust on growers and market agents”, when the grower and the market agent share similar goals, trust is facilitated. To reinforce trust, growers prefer to transact with those market agents who are prepared to invest in their relationship with the grower. Conversely, the market agents’ propensity to act opportunistically, to exercise power and to withhold information from the grower will have a significant negative impact on the trust that develops between growers and market agents. (Batt, 2003)

Results of a study on “*Factors Affecting the Level of Trust and Commitment in Supply Chain Relationships*” conducted using a comprehensive survey of supply chain practitioners indicate that a firm’s trust in its supply chain partner is highly associated with both sides’ specific asset investments (positively) and behavioral uncertainty (negatively). It is also found that information sharing reduces the level of behavioral uncertainty, which, in turn, improves the level of trust. A partner’s reputation in the market has a strong positive impact on the trustbuilding process, whereas a partner’s perceived conflict creates a strong negative impact on trust and the level of commitment is strongly related to the level of trust. (Kwon & Suh, 2004)

(Mouzas, et al., 2007) States that trust in business-to-business marketing is a multilayered construct that needs conceptual clarification. As an emotional paradigm it is applicable to inter-personal relationships. Business relationships, comprises with inter-personal and inter-organizational relationships and thus, this paper proposes a conceptual framework that adds a rational standard applicable to inter-organizational relationships, namely that of reliance.

As stated by a study conducted in 2011, there are two forms of trust as trust in competency and affective trust affecting the collaboration of buyer and supplier firms. Trust in competency is the expectation of trustworthy behaviors as a result of conviction for the knowledge, know-how, and expertise of partners while affective trust is the emotional trust attained from long-term-based inter-personal interaction. This paper reveals that affective trust has a significant influence on collaboration in information sharing and benefit/risk sharing, whereas trust in competency affects collaboration in joint decision making and benefit/risk sharing. Regarding supply chain collaboration, joint decision making and information sharing are found to affect logistics efficiency. Insignificant relationships are detected between affective trust and joint

decision making, between trust in competency and information sharing, and between benefit/risk sharing and logistics efficiency.(Ha, et al., 2011)

All the articles taken into consideration in the analysis are briefed in the summary table shown in the Table-1.

Table 41: Main results of the reviewed studies

Title	Year	Objective/s	Design Method/s	Key findings
Towards a Diagnostic Instrument to Identify Opportunities for Quality Controlled Logistics in Agri-food Supply Chain Networks	2011	To find the opportunities of using realtime product quality information for improvement of the design and management of ASC and presents a preliminary diagnostic instrument for assessment of ‘critical quality’ and ‘logistics control’ points in the supply chain network	A case study	<ul style="list-style-type: none"> Improvement opportunities in the supply chain as to increase both product availability and quality.
Improving logistics efficiency of industrial districts: a framework and case study in the food sector	2014	To proposes an integrated approach to increase sustainability and efficiency of logistics activities	Introduce a framework and tested with a case study	<ul style="list-style-type: none"> Pooled management of packaging, procurement, warehousing and transportation activities could improve the sustainability of industrial district, in terms of efficiency and resources used.
Study on Countermeasures of the Logistics Efficiency of Fresh	2015	Find the ways to improve logistics efficiency of fresh agricultural products	Survey	<ul style="list-style-type: none"> Quality, safety and commercial value of products can be improved through shortening logistics chains, times,

Agricultural Products in China				promoting the standardization and modern development of logistics of fresh agricultural products
Logistics solutions for reducing food waste	2017	To expand understandings of how logistics can reduce food waste in food supply chains	Case study Data collection: semi structured interviews and site visits	<ul style="list-style-type: none"> • A joint analysis of nine logistics solutions revealed that to efficiently reduce food waste in food supply chains
Collaborative commerce or just common sense? Insights from vegetable supply chains in Ho Chi Minh City	2005	To demonstrate that collaborative commerce is not restricted to trade in branded products between large, multi-national organisations.	Insights from extensive field research in Vietnam.	<ul style="list-style-type: none"> • Collaborative principles are simple and easy to adopt when the culture is conducive to collaboration and a partnership approach to trading relationships.
Collaboration and trust in two organic food chains	2008	To determine the presence of collaboration along the Finnish organic	A case study with two cases	<ul style="list-style-type: none"> • High frequency of communication is not an indication of collaboration, and is less

		food chain, from the farmers to the multiple retailers		<p>important than the quality of communication in the creation of trust</p> <ul style="list-style-type: none"> • Competence demonstrated as an exchange partner is the key for a trustful relationship.
Trust development and horizontal collaboration in Logistics: a theory based evolutionary framework	2015	To provide a sound theoretical foundation, in the form of a theory based framework, to show a potential way to develop horizontal collaboration effectively by considering trust among partners	Develop an evolutionary framework	<ul style="list-style-type: none"> • Mutual trust among partners is developed through increased and continuous collaboration
Towards a grounded view of collaboration in Indian agri-food supply chains	2016	To understand the process and role of supply chain collaboration in Indian agri-food industry and highlight the perceptions of buyers and suppliers towards each other	A case study	<ul style="list-style-type: none"> • Generic model was derived to understand the process of supply chain collaboration supplier selection • Joint planning and information sharing are the main antecedents and profits, waste reduction and supply chain efficiency are major outcomes of collaboration

An examination of the nature of trust in buyer-seller relationships	1997	To determine processes through which industrial buyers can develop trust of a supplier firm and its salesperson	Develop theoretical model and tested using data collected from purchasing managers	<ul style="list-style-type: none"> • several variables influence the development of supplier firm and salesperson trust • Trust of the supplier firm and trust of the salesperson influence a buyer's anticipated future interaction with the supplier
Determinants of trust in supplier relations: Evidence from the automotive industry in Japan and the United States	1998	To examines the determinants of inter-organizational trust	Survey	<ul style="list-style-type: none"> • Conditions which facilitate trust are long-term commitment, information exchange, technical assistance, and customer reputation • Vertical integration was found not to have a significant effect on trust.
The role of trust and relationship structure in improving supply	2002	To answer the question “How can purchasing managers structure relationships with suppliers to achieve a desired outcome, given varying degrees	Present a model	<ul style="list-style-type: none"> • Buyer-dependence, supplier human asset investments, and trust are all positively associated with improved supply chain responsiveness

chain responsiveness		of dependence on suppliers and different market channel forms?”		
Building trust between growers and market agents	2003	To find the factors affecting the trust building between growers and market agents	Survey Data collection: mail questionnaire	<ul style="list-style-type: none"> • Grower’s satisfaction with the exchange transaction have the, most significant influence on building trust between the grower and their most preferred market agent. • When economic outcomes are higher than expected, growers give higher credit to their market agent and thereby trust improves.
Factors affecting the level of trust and commitment in supply chain relationships	2004	To fill the gap between the theoretical argument and empirical testing of the relationship between trust and commitment among supply chain partners	Survey	<ul style="list-style-type: none"> • Firm’s trust in its supply chain partner is highly associated with both sides’ specific asset investments (positively) and behavioral uncertainty (negatively). • Information sharing reduces the level of behavioral uncertainty and improves the level of trust. • A partner’s reputation in the market has a positive impact on the trust building process and partner’s perceived conflict

				creates a strong negative impact on trust. Level of commitment is strongly related to the level of trust.
Trust and reliance in business Relationships	2007	To define the role of trust and reliance in business relationships	conceptual model is developed, and its implications analyzed and discussed	<ul style="list-style-type: none"> • One of the particularities of trust is its inherent anthropocentricity. • As a concept, trust is more applicable at the level of inter-personal relationships than to inter-organizationalrelationships
Suppliers' affective trust and trust in competency in buyers: Its effect on collaboration and logistics efficiency	2011	To measure trust that logistics/supply chain management managers of supplier firms perceive towards inbound managers of buyer firms, and investigate the effect of trust on supply chain collaboration and logistics efficiency	An empirical analysis conducted with Korean firms	<ul style="list-style-type: none"> • Affective trust has a significant influence on collaboration in information sharing andbenefit/risk sharing, • Trust in competency affects collaboration in joint decision making and benefit/risk sharing. • Joint decision making and information sharing are found to affect logistics efficiency. • Insignificant relationships are detected between affective trust and joint decision

				making, between trust in competency and information sharing, and between benefit/risk sharing and logistics efficiency.
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DISCUSSION

The categorization of factors studied in the selected articles is discussed in the following sections.

Factors affecting Logistics Efficiency

Table 2 depicts the factors that leads to logistics efficiency.

Table 42: Factors affecting logistics efficiency

Study	Factors affecting logistics efficiency				
	Forecasting	Quality inspection	Inventory and warehouse management	State of the art technology	Modern infrastructure
(Van der Vorst, et al., 2011)	*	*			*
(Bottani, et al., 2014)			*		*
(Zhang, 2015)		*	*	*	*
(Liljestrand, 2017)	*	*	*	*	*

Under this category, the studies which are focused on the factors that affect the logistics efficiency are categorized.

A supreme portion of the agro products is perishable and in most occasions, downstream agro product transportation takes place in open caters. Thus these products are exposed to

uncontrolled temperature conditions and it leads to continuous emission of CO₂ through respiration of the products (Chandrasekaran & Ranganathan, 2017). Ultimately, product quality is deteriorated. All the considered studies have reflected modern infrastructure as a crucial aspect for the logistics efficiency of the ASCs. These infrastructure includes the specialized temperature controlled transportation and storage equipment (Van der Vorst, et al., 2011). Having a developed interconnected road network is critical for the downstream logistics efficiency as well (Zhang, 2015).

Consumer preferences and acceptance period of product quality attributes, identifying critical quality points, product quality measurement and prediction and adoptive logistics and quality control based on the customer requirements and current product quality is important for maintaining the logistics efficiency (Van der Vorst, et al., 2011). This will preserve the product quality and will boost the customer satisfaction.

Forecasting reduces the food waste due to the mismatched supply and demand (Liljestrand, 2017). Forecasting the demand, fluctuation of demand due to seasonal changes or weather conditions helps to shrink the food wastage or food shortage (Liljestrand, 2017). Owing to forecasting, ASC stakeholders could manage their inventories or use value addition in order to meet surpluses or shortages efficiently.

Having modern storage equipment for cold storage, preservation and gas conditions reduce the cost of preserving and improve the quality of agro products (Zhang, 2015). Adequate number of warehouses with ample space to store the production is critical for downstream logistics efficiency of ASC. Warehouses should be properly managed and maintained.

Integrating modern technologies and digitizing the supply chain enhance the performance of the supply chains. Using Nano technology, biological preservation technologies, ozone gas preservation technology, shorten the logistics chains and improve efficiency (Zhang, 2015). Incorporating digital technologies such as cloud computing, intelligent systems with downstream ASC will pave the way for new digital era in downstream logistics of ASCs.

Features of Collaboration

Table 3 shows the features of collaboration identified through the review of literature

Table 43: Characteristics of collaboration

Study	Features of collaboration				
	Share resources	Share knowledge	Effective communication and information sharing	Collective decision making	Risk/benefit sharing
(Cadilhon , et al., 2005)			*	*	
(Matopoulos, et al., 2007)	*		*		*
(Kottila & Rönni, 2008)			*		
(Aggarwal & Srivastava, 2016)	*	*	*		
(Ha, et al., 2011)			*	*	*

Most of the studies have identified effective communication and information sharing as an approach for collaboration. Constant communication is not an indication of collaboration and what is important is the quality of the communication (Kottila & Rönni, 2008). Having an effective bi-directional communication among the supply chain partners in ASC ensures effective and efficient information flow in the supply chain. Sharing the information regarding demand, supply, production, strategies, operations, ensures the improvement in downstream logistics efficiency (Aggarwal & Srivastava, 2016).

According to the reviewed articles, sharing knowledge is another trait of collaboration. Most of the times, infrastructure that connects these numerous small stakeholders such as the farmers, wholesalers, processors and manufacturers, retailers, etc., is very weak. Farmers bring whatever they have produced to the market without actually having any knowledge about the real demand in the market (Aggarwal & Srivastava, 2016). These small stakeholders have limited access to knowledge. Through collaboration supply chain partners who have access can share knowledge with others, thus they also can use new technologies, new methods in cultivation, storage or transportation

ASC partners can involve in joint decision making through shared operational decision making, willingness of collaborative problem solution and willingness of collaboration in strategic decision making. In collaborative benefits/risk sharing, efforts are made to create mutual benefits, costs are shared and willing to cooperate in purchasing. (Ha, et al., 2011) Joint decision making and collaborative benefit/risk sharing in downstream agricultural logistics ensures efficient and effective product movement as all the operations and strategies are developed in a way that profit is maximized for all the partners and risk is minimized.

It is difficult for small farmers, wholesalers, retailers to invest in new technology, equipment and infrastructure, although there is a growing need for establishing better practices that would enhance the productivity and efficiency in agro industry.

According to the reviewed literature there are two types of collaboration as horizontal and vertical collaboration. Vertical collaboration occurs when two or more organizations such as the manufacturer, distributor, the carrier, and the retailer share their responsibilities, resources, and performance information to serve relatively similar end customers. Horizontal collaboration occurs when two or more unrelated or competing organizations cooperate to share their private information or resources such as joint distribution centers. (Simatupang & Sridharan, 2002)

Through horizontal collaboration of ASCs, farmers can collaborate with other farmers, wholesalers collaborate with other wholesalers, etc., and work towards achieving a common goal. This will encourage the sharing of information and resources within the supply chain, which ultimately leads to the improved logistics and supply chain performance. This would improve the quality of service provide to the consumers as well as their individual profits.

Through vertical collaboration, stakeholders at different levels of ASC collaborate together to achieve a common goal. This would boost the smooth and two-way flow of information and knowledge. Demand and supply data, market trends, customer needs and wants, etc., will efficiently transmit from one level to another. Thereby logistics efficiency will improve and the supply chain performance will thrive.

Factors affecting Trust

Common factors stated by the reviewed studies that affect trust are tabulated in Table 4.

Table 44: Factors affecting trust

Common factors stated by Study	Factors affecting trust				
	Honesty	Reputation of the partner	Unique knowledge/skills in what they do	Openness/Information sharing	Technical assistance or help received from the partner
(Doney & Cannon, 1997)			*	*	
(Sako & Helper, 1998)		*		*	*
(Handfield & Bechtel, 2002)				*	
(Ha, et al., 2011)	*		*	*	
(Kwon & Suh, 2004)	*	*		*	
(Batt, 2003)	*		*	*	*

According to the reviewed literature, most of the studies have identified openness or information sharing in a supply chain relationship leads to trust building between the partners. Information sharing reduces the degree of uncertainty, which in turn enhances the level of trust (Kwon & Suh, 2004). In the context of fresh product industry, market agents can generate greater trust with the growers by sharing information such as the demand information including the crop varieties which are having greatest demand, quantities and the quality of the products required by the customers. Quantity and quality information will help the supply chain partners involved in downstream ASCs to plan and organize their logistics processes so as to satisfy the customer requirements as the deterioration of the product quality mainly occurs during the logistics activities. Sharing sensitive market information will not only improve transparency in the exchange, but also signal the market agent's desire to cooperate and collaborate (Batt, 2003). Thus, opening of the supply chain partners to each other and sharing information leads to stronger relationships bounded by trust. This is the base for collaborative relationship.

Trust that is based on a partner's expertise focuses on an expectancy held by a person that the partner's word or written statement can be relied on (Lindskold, 1978). Such supply chain stakeholders are trustworthy, since they know what they are doing. In ASCs expertise based trust could be developed when the supply chain partners have expertise knowledge and skills in handling, storing, transporting and selling certain agricultural products. The other party involved in the trust based relationship believes that they could gain more benefits financially as well as non-financially through this relationship. Thus, they tend to enter into a collaborative partnership centered on the trust in expertise knowledge of the other party.

Assistance or help received from the supply chain partners encompasses the technical assistance and sharing their knowledge and assisting them in engaging certain downstream logistics activities. One type of credible commitment that a customer can provide to a supplier is technical assistance and, the customer would have more trust in its supplier's competence as a result (Sako & Helper, 1998). In downstream ASCs this type of trust could be developed between stakeholders who assist their partners in logistics processes such as transporting and storing of the products. These associates will share their technical knowledge regarding these processes and will support their partners to reap the benefits of following proper techniques and methods.

Reputation is based on the perception of partners that other trading partners deliver quality products/services, and they keep their word and never second-guess the other's intentions (Kwon & Suh, 2004). In most of the supply chains including ASCs, stake holders tend to build

relationships with other partners or engage in transactions based on their reputation. For an example, if the other party has a reputation for selling quality products at a reasonable price, it will pave the way for trust based on reputation. Ultimately the stakeholders enter into a partnership grounded on trust.

Perception of partners that other trading partners are honest leads to a trust based relationship (Kwon & Suh, 2004). Honesty of the other party is a very important factor which is considered before entering to a trade relationship or a transaction. In downstream ASCs opportunistic transactions, often lead to cracking of trust based relationships. Thus, partners should be honest with each other and should have the pure intention of helping each other to gain mutual benefits of the relationship.

(Sako & Helper, 1998) has identified three types of trusts as contractual trust, competent trust and goodwill trust. According to the reviewed literature these types of trusts affects the collaboration differently and they have different weights on collaboration and logistics efficiency. For an example, competency trust has a greater effect on joint decision making and benefit/risk sharing while information sharing is greatly affected by goodwill and contractual trust. (Ha, et al., 2011) Technical assistance or the help received from the partner and unique knowledge/ skills in what they do affirm the competence trust while honesty establishes contractual trust (Sako & Helper, 1998). Thus the logistics efficiency and collaboration have a distinguishable effect from each trust type.

CONCLUSION

In the recent past, research interest and the importance of logistics efficiency of ASCs have made an enormous contribution on this topic. Based on the review, classification and analysis of the articles, some broad suggestions for future research can be put forth. Indeed, in spite of the significant development achieved over the last decade, there remain many important issues for future investigation.

Trust is the prerequisite for collaboration and collaboration is clamped to a supply chain function with the help of the trust. In a downstream ASC, building trust between the farmers, wholesalers, retailers, food processors, etc., is very important as it is very challenging to survive in a highly volatile supply chain with limited resources and without any external backing. Thus collaborative relationships centered on trust should be developed, as most of the supply chain partners are of small scale and have limited access to resources, technology,

knowledge and infrastructure required to redesign the downstream ASCs to improve logistics efficiency.

If the supply chain partners are bound together with a sturdy trust centered bond, which affluences with contractual trust, competence trust and goodwill trust that will lead to a collaborative supply chain. Collaborative agricultural downstream supply chains which are both horizontally and vertically collaborated will encourage sharing resources and knowledge, effective communication and information sharing, collective decision making and risk/benefit sharing in order to improve the logistics efficiency through forecasting, quality controlling, inventory and warehouse management, usage of state of the art technology and modern infrastructure. Thus, trust has positive impact on supply chain collaboration and thereby downstream logistics efficiency of ASCs could be improved. Figure 2 shows the effect of trust and collaboration in improving downstream logistics efficiency of ASCs.

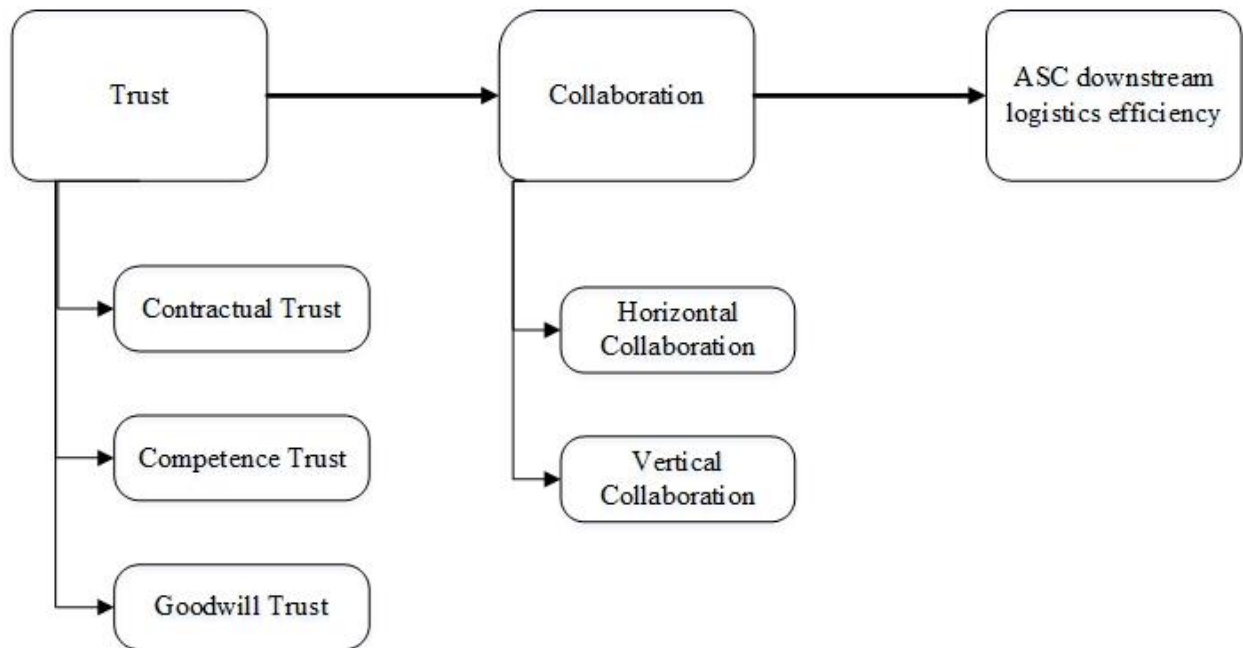


Figure 2: Effect of Trust and Collaboration in improving downstream logistics efficiency of agricultural supply chains

There are only few studies conducted to identify the factors affecting the downstream logistics efficiency of ASCs, other than collaboration and trust. Therefore, further researches should be conducted to investigate those factors as well. Very limited number of researches conducted on ASCs were focused on traditional ASCs, hence researchers should focus their attention on this area in order to propose improvements.

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Factors affecting the User Satisfaction for e-Learning Systems

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Abstract

The use of e-learning system is considered as an important and an integral part of educational process. Developed countries use e-learning systems successfully whereas in Sri Lankan context there is a lack of usage of e-learning systems. In this background, user satisfaction plays an important role and may affect the use of e-learning systems. Therefore, the aim of this study is to find factors affecting the user satisfaction and usage of the e-learning systems and to find out the relationship between those factors. In this study, the Technology Acceptance Model (TAM) was adapted with some other factors which were gathered through the literature. The conceptual model was developed to find the satisfaction of e-learning systems and its use. Identified factors for this model were Information Quality, Computer Self-efficacy, Perceived Ease of Use, Perceived Usefulness and Subjective Norms.

Key words: E-learning, User satisfaction, Technology acceptance model

Introduction

In this era of globalization, knowledge has become the most critical mean for gaining competitive advantage. As a method of acquiring knowledge, learning has become a crucial element (Longworth & Davies, cited in Lee 2006). E-learning is emerging as the new paradigm of modern education and it is growing day by day worldwide (Arbaugh & Duray, 2002). E-learning refers to the methods of learning which uses electronic instructional content and telecommunication technology to deliver information and is a term which has synonyms like web-based or online learning (Trombley & Lee, cited in Lee 2006). E-learning has now become a portable and flexible new method for learners to gain essential knowledge(Lee, 2006). Recently e-learning systems are being introduced in schools, corporations and public sector organizations to increase the effectiveness of learning and to overcome the drawbacks of traditional learning.(Violante, cited in Harrati *et al.* 2016).

According to the literature,e-learning useis growing day by day, while failures also exist. When considering these failures, previous researchers have identified that many users stop their online learning after the initial experience due to numerous reasons which affects user

satisfaction(Sun *et al.*, 2008). There are a number of studies that examined the factors affecting satisfaction and usage of e-learning systems and their relationship(Sun *et al.*, 2008;Delone and Mclean, 2003;Lee, 2006). Though some countries use e-learning systems effectively and widely, we can see a lack of usage in e-learning systems within Sri Lankan context. There may be some causes behind this lack of e-learning usage. Therefore, it is important to have a clear understanding of the factors that have direct impact on the user satisfaction and the indirect impact on usage of the web-based e-learning systems.

According to R. M. G. S. Jayarathna (2016), students do not efficiently and effectively participate in e-learning systems in Sri Lanka and there is a lack of research conducted on e-learning. Sometimes, students or undergraduates may not be aware of e-learning systems available in their institutions. In addition, they may think they are not useful and hard to use. Even though the government has spent a lot of money on e-learning systems to facilitate undergraduates, they do not utilize the resources properly (Suraweera, 2015). Therefore, it is necessary to study this area thoroughly to find the satisfaction factors for using these systems.

Thus, for this study the following research objectives were identified,

- Identify the factors affecting user satisfaction of e-learning systems.
- Analyze the relationship between those factors and the usage of e-learning systems.

Literature Review

E-learning generally refers to the methods of learning which use electronic instructional content delivered via the internet and is a term which is synonymous with Web-based or Online Learning (Trombley and Lee, cited in Lee 2006). There are two groups of theories that can be applied to the e-learning concept. Firstly, learning area which includes, social cognitive or social learning theory (Bandura, cited in Newton 2016). Secondly, the field of information technology and in particular theories such as the Technology Acceptance Model (Davis, 1989). To explain and predict the adoption and use of information technology at work, Davis (1989) proposed the Technology Acceptance Model (TAM) based on the Theory of Reasoned Action (TRA) in 1989. The TAM theorized that perceived usefulness (PU) and perceived ease of use (PEOU) as two key determinants of technology adoption.

According to TAM both perceived usefulness(PU) and perceived ease of use(PEOU) influence the attitude of individuals towards the use of a technology, while attitude and PU predict the individual's behavioral intention (BI) to use the technology (Davis, 1989). Davis referred to PU

as the degree to which individuals expect that the adoption of a particular technology would enhance their job performance, while PEOU was the degree to which individuals believe that using a particular technology would be simple and free of effort (Davis, 1989). TAM depicts that one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use (Davis, 1989). Attitude was subsequently omitted from the model by Davis et al. because of its weak correlation with both BI and PU. In this scenario of identifying factors affecting user satisfaction with e-learning, TAM could be useful. The main constructs of TAM; perceived usefulness and perceived ease-of-use predicts user acceptance of course websites (Paul Legrisa, John Inghamb, 2001). TAM was conceived at the individual level when it was originally developed, and research into the influence of subjective norms is one of the major directions for enhancement of TAM (Cheung and Vogel, 2013).

As a model for the prediction of behavioral intentions the Theory of Reasoned Action has been widely used (Ellen and Ajzen, 1992). According to TRA user's behavior. This can be determined by individual's intention to perform or not to perform a behavior. It emphasizes that behavioral intention is the immediate antecedent to behavior. Attitudes and subjective norms influence the intention (Ajzen and Fishbein, cited in Cheung and Vogel 2013). Often the performance of behavior is constrained by the lack of appropriate opportunities, skills and resources. Even if a person has very positive attitudes and norms, he or she may not actually perform a certain behavior because of lack of control over his or her own activities. Due to this reason, the Theory of Planned Behavior is introduced in order to include an additional variable named 'Perceived Behavioral Control' (Cheung and Vogel, 2013). Perceived Behavioral Control has direct and indirect effect on behavior through behavioral intentions. The indirect effect assumes that perceived behavioral control has motivational implications for behavioral intentions (Ajzen, cited in Cheung and Vogel 2013)

Previous researches have used TAM as a model to explain how people adopt and use e-learning. Selim, (cited in Park 2009) emphasized that TAM was needed to investigate web-based learning. As a result, he introduced course website acceptance model (CWAM) to test the relationships between perceived usefulness, perceived ease of use and intention to use with university students. Finally, he concluded that PU and PEOU are good determinants of the

satisfaction. Furthermore, he emphasized the importance of the websites as an efficient way of learning.

Lee, (2006) extended his model based on an extension of the TAM approach. In his model he included constructs and relationships that may be important in the context of e-learning. Constructs included content quality, course attributes, perceived network externality, computer self-efficacy, subjective norm, and a mechanism of competing behavioral intentions to e-learning. According to the author, content quality has two dimensions; 'content richness' and 'update regularity'. Lee emphasized that all these factors have a positive impact on user satisfaction when using e-learning systems.

Another study proposed four key quality assurance factors such as learning process, tutor interaction, peer interaction, and course design to expand the understanding of students' experience in e-learning (Chow and Shi, 2014). Chien, 2012 proposed two types of factors; system factors (functionality, interaction, and response) and instructor factors (attitude, technical skills, and instructional methods) which influence on the effectiveness of e-learning under the interactions of employee computer self-efficacy.

Furthermore, e-learning is useful in the context of collaborative learning. Collaborative environments in education involve small groups of students working together to solve problems with the purpose of learning. Google has several applications such as Google Docs, Google Forms, and Google sites to facilitate collaboration (Rienzo and Han, cited in Cheung and Vogel 2013).

Some studies have identified the factors vital to the e-learning systems as dimensions. They were student, instructor, course, technology, design and environment dimensions. Thirteen factors have been identified under those dimensions. In student dimension, factors were attitude toward computers, learner computer anxiety, and internet self-efficacy. In instructor dimension the factors were instructor response timeliness, attitude towards e-learning, course flexibility and course quality. There were factors such as perceived usefulness and perceived ease of use under design dimension. Finally, diversity in assessment, learner perceived interaction with others were the factors under environmental dimension (Sun *et al.*, 2008). As a recent trend in higher education, e-learning systems provide students with online access and learning content. Reasons for this trend are changes in students' demographic factors, educational delivery market conditions, and innovation technology itself (Concannon *et al.*, cited in Park 2009).

Most of the previous studies related to e-learning are in educational context, generally higher education. However, over the past two decades there was an interest in learning outside the formal educational context. Researchers have identified the importance of work related learning that allows employees to retain with an ever-changing work environment in which emerges technological advancements day by day, and e-learning is seen as a tool to achieve this learning (Cheng *et al.*, cited in Newton *et al.* 2017).

There are three main features of e-learning. They are the ability to interact via computer-mediated communication (CMC), retrieval of large amounts of information, and the processing power of the Java language (Asiri *et al.*, 2012). These facilitate new e-learning technologies called Learning Management Systems (LMSs), like Lotus Note, Moodle, Blackboard and WebCT. A synonym for LMS is Virtual Learning Environments (VLEs) or Course Management Systems (CMSs) (Asiri *et al.*, 2012). Sallum (2012) described LMS as a solution package that deliver and administrate the contents and resources to all students and employees. Thurmond *et al.* (2002) investigated the factors affecting on learner's satisfaction such as age, computer skills, and initial knowledge about e-learning technology, team work, courses taken and various assessment methods. Scheduled discussions and acquaintance with the instructors also affect the learner's satisfaction. In addition, they emphasized that receiving comments in a timely manner and the time that learners must spend on interacting with e-learning affect the satisfaction level.

According to the research conducted by Venkatesh *et al.* (2000) it has been emphasized that social influence, facilitating conditions and behavioral intention are the factors predicting technology used behavior (Venkatesh *et al.*, 2000). Social influence is defined as the degree to which a person perceives that others believe he or she should use the new system. It is important in the early stages of technology usage. Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. In recent studies researchers have examined the effects of social ties on the adoption of information technologies in the virtual environment. Hossain and de Silva (2009) explore user acceptance of technology by considering social ties in social networking systems.

In this study the following aspects were identified as the factors that affect user satisfaction with e-learning systems.

Information Quality

Information quality (IQ) can be defined as the “characteristic of the output offered by the IS, such as accuracy, timeliness and completeness metrics” (Delone and Mclean 2003, p. 15). According to Delone and Mclean (2003), IQ provides greater satisfaction for the users as well as increase the use of the system. Quality of the information is important in determining user satisfaction level with the system, which in turn leads to system utilization. Eom (2012) emphasized that Information quality has a positive relationship with user satisfaction and system use.

Computer Self Efficacy

Computer self-efficacy (CSE) is individual's beliefs regarding their ability to use a computer in the context of IT usage (Compeau & Higgins 1995). Bandura's 1987 study (cited in Lee, 2006) defined CSE as “people's judgment of their ability to perform specific tasks”. Lent et al. revealed that higher levels of self-efficacy lead to better learning performance. If a user is confident with his IT related knowledge and abilities, he will tend to use new technology and systems more and more. Compeau et al., (1999) introduced three dimensions of computer self-efficacy; ‘magnitude’, ‘strength’ and ‘generalizability’. Learner internet self-efficacy positively affects perceived e-learner satisfaction with e-learning. (Pei-Chen Sun et al. 2006; Eom, 2014).

Perceived Usefulness

The perceived usefulness of a system is defined as “to what extent individuals believe that their performance will enhance by using the technology” (Davis, 1989). Numerous empirical studies have investigated that PU as the primary predictor of information technology usage. (Davis et al 1992). Students will use e-learning systems only if they feel that its use will enhance their performance. Perceived usefulness significantly correlates with the usage of systems (Davis, 1989). Lee (2006) emphasized that perceived usefulness positively affects the intention of users to accept e-learning systems (Lee, 2006; Al-Alak and Alnawas, 2011).

Perceived Ease of use

Perceived ease of use (PEOU) has a positive correlation with the behavioral intentions to use systems. Davis (1989) defined PEOU as “the degree to which an individual feel that using a particular technology will be free of effort”. The less effort in using a system leads for better

performances. In the e-learning context, this PEOU can be described as the degree to which a student believes that electronic learning system(ELS) will be easy to use and free from effort (Davis 1989). The results of many empirical studies have also indicated that perceived ease of use has a positive impact on user satisfaction with ELS.(Lee, 2006;Park, 2009;Sun *et al.*, 2008)

Subjective Norms

In TRA model, Fishbein and Ajzen (1975), social influence was tested on behavioral intention. They emphasized that a person thinks that he should or should not perform a behavior to a social referent. These referents may be parents, teachers, friends, classmates, etc.(Taylor and Todd, 1995). For example, if a teacher believes his/her students should use e-learning systems that students may strongly motivate to comply with the expectations of the teacher and they tend to use e-learning systems more and more. On the other hand, if a referent believes students should not use those systems, then those students are strongly demotivated to use those systems. Subjective norm will have a positive direct effect on intention to use when the ELS use is perceived to be mandatory(Lee,2006).Park (2009) emphasized that university students' attitude towards e-learning is affected by subjective norms.

User Satisfaction

User satisfaction is a key indicator of deciding whether learners would continue to adopt a learning system or not. It refers to “the degree of perceived learner satisfaction towards e-Learning environment” (Pei-Chen Sun *et al.*, 2006).The former researchers defined this as “the extent to which users believe the information system available to them that meets their information requirements”(Ives *et al.*,cited in Eom 2014, p. 10). Eom (2012)also indicated that there is a positive relationship between user satisfaction and system use.

Based on the above discussion,the following research model and hypothesis have been developed to achieve research objectives. Further, questionnaire items also have been developed and it is available in Appendix.

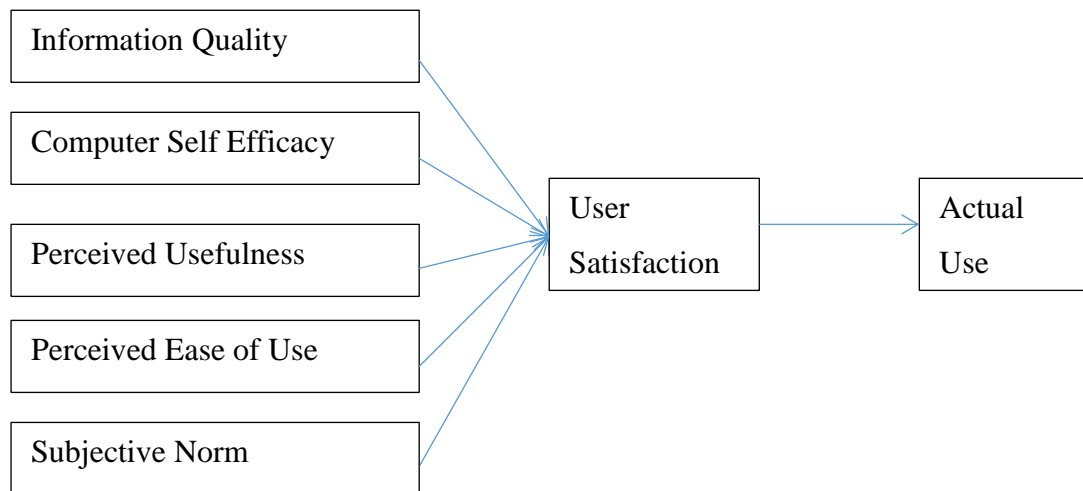


Figure 1:Coceptual Framework

H1: Information quality has a positive direct effect on user satisfaction.

H2: Computer self-efficacy has a positive direct effect on user satisfaction.

H3: Perceived usefulness has a positive direct effect on user satisfaction.

H4: Perceived ease of use has a positive direct effect on user satisfaction.

H5: Subjective norms have a positive direct effect on user satisfaction.

H6: User satisfaction has a positive direct effect on actual use.

H7: Information quality has a positive indirect effect on actual use.

H8: Computer self-efficacy has a positive indirect effect on actual use.

H9: Perceived usefulness has a positive indirect effect on actual use.

H10: Perceived ease of use has a positive indirect effect on actual use.

H11: Subjective norms has a positive indirect effect on actual use.

Conclusion

In this study, it has been emphasized the factors affecting user satisfaction and usage for e-learning systems. The research model has been developed based on the Technology Acceptance Model and several empirical studies. Identified factors are information quality, computer self-efficacy, perceived ease of use, perceived usefulness and subjective norms. The hypotheses

have been built by referring to the literature. It has been hypothesized that all above factors have a direct impact on user satisfaction and an indirect effect on actual use.

Questionnaire items also have been developed based on research literature. The researcher is planning to study this research further by analyzing data which will be collected from undergraduates of the University of Sri Jaywardenepura, Sri Lanka.

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Appendix

Operationalization

Code	Factor	Definition	Questionnaire Items	Reference
CSE	Computer self-efficacy	the degree to which an individual is confident that s/he can perform a specific task or achieve a specific goal (Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W.H. Freeman)	<p>I feel confident using e-learning systems.</p> <p>I feel confident operating e-learning functions.</p> <p>I feel confident using online learning contents.</p> <p>I feel confident uploading home works and downloading learning contents.</p>	(Liaw and Huang, 2013)
PU	Perceived usefulness	the extent to which a user believes that utilizing a certain system would influence his/her job performance and productivity positively (i.e. providing timely information)(Davis, 1989).	<p>I believe e-learning systems are useful learning tools.</p> <p>I believe using e-learning is effective for learning.</p> <p>I believe e-learning contents are informative.</p> <p>I intend to use e-learning to assist my learning in the future.</p>	(Liaw and Huang, 2013)

			<p>I intend to use e-learning content to assist my learning.</p> <p>I intend to use e-learning to improve my learning motivation</p>	
AU	Actual use	the use of system (U) as its output described in terms of current or self-reported usage(Delone and Mclean, 2003)	<p>I use LMS on daily basis.</p> <p>I use LMS frequently</p> <p>I visit LMS often</p>	(Ramírez-Correa <i>et al.</i> , 2017)
US	User satisfaction	the extent to which users believe the information system available to them meets their information requirements(Ives <i>et al.</i> , cited in Eom 2014, p. 10)	<p>Most of the users bring a positive attitude or evaluation towards the LMS function.</p> <p>I think the LMS is very helpful.</p> <p>Overall, I am satisfied with the LMS.</p>	(Ramírez-Correa <i>et al.</i> , 2017)
IQ	Information Quality	the characteristics of the output offered by the IS, such as accuracy, timeliness and completeness metrics(Delone and Mclean, 2003)	<p>The LMS provides information that is exactly what you need (Freeze <i>et al.</i>, 2010).</p> <p>The LMS provides information that is relevant to your job.</p>	(Ramírez-Correa <i>et al.</i> , 2017)

			<p>The LMS provides sufficient information.</p> <p>The LMS provides information that is easy to understand.</p> <p>The LMS provides up-to-date information.</p>	
PEOU	Perceived Ease of Use	the extent to which people believe that using certain system would be effortless(Davis, 1989)	<p>I feel that using an LMS would be easy for me.</p> <p>I feel that my interaction with LMS would be clear and understandable.</p> <p>I feel that it would be easy to become skillful by using LMS.</p> <p>I would find LMS to be flexible to interact with learning and operate LMS would be easy for me.</p> <p>It would be easy for me to get LMS to do what I want to do.</p>	(Alharbi and Drew, 2014)
SN	Subjective norm	A person's attitudes towards performing behavior in order to a social referent. These referents may be parents, teachers, friends, classmates, etc. (Taylor & Todd 1995)The degree to	<p>1.My teachers think that I should use the system.</p> <p>2.My friends think that I should use the system.</p>	(Lee, 2006)

		which a person perceives that others believe he or she should use the technology (Taylor & Todd 1995).		
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Factors Influencing Solar Energy Technology Adoption by Households in Western Province Sri Lanka

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Abstract

The acceptance and slow growth of solar energy in Sri Lanka is a major barrier. The aim of this study was to identify the factors which are more considerable when adopting solar energy technology. Technology Acceptance Model (TAM), Diffusion Of Innovation (DOI), Theory of Planned Behavior (TPB) and Transaction Cost Economics theory (TCE) are the theories that are used to develop the research foundation. Basically five key factors have been identified: namely Relative Advantage, Perceived Behavioural Control, Perceived Ease of Use, Awareness of the Technology and Perceived Cost. A self-administrated questionnaire was conducted to collect data from a sample of 384 respondent households. Structural Equation Modeling (SEM) was used to test the hypothesis. The result of the study indicates that all the key factors have a positive impact with adoption of solar energy technology. Creating better awareness of the benefits of solar energy usage and increase awareness among people towards their responsibility to use green energy sources can encourage the rate of usage amount in domestic consumers. Providing financial support, obtaining continuous feedback and providing free technical advisory schemes are also good practical implications. From a managerial viewpoint these findings can be used for strategic planning to determine effective marketing activities to change customer's intention to ensure sustainable business growth. Important policy making decision and investment decisions can be taken by these estimates. In consumer's perspective the study enhances knowledge on solar energy as a power source of green energy for small scale households in urban areas. Though geographical unfairness act as the main limitation, since the high density of population, income level and urbanization of observed area, the result can be generalized to the urbanized households.

Key words: Adoption, Relative advantage, Perceived behavioural control, Perceived ease of use, Awareness, Cost, Solar energy

INTRODUCTION

To preserve the ecological balance of this planet, it is necessary to motivate users to opt for renewable energy technologies. Rapidly increasing energy demand and growing concerns are gradually pushing the world to the use of Renewable Energy sources. There are three generations of hydro power namely first, second and third. Hydropower, biomass combustion, and geothermal energy which are referred to as matured renewable energy technologies are categorized in to generation one. Fast growth renewable energy technologies are considered as the second generation, and it consists of solar, wind, and new-fashioned bio-energy. The third generation consists with a wide range of renewable energies as concentrating solar power, ocean energy, modern geothermal energy, and integrated bio-energy. (IEA, 2006).

Many experts consider solar energy as one of the most promising technologies among them all. Solar energy is derived from the sun through the form of solar radiation and it is the most abundant energy source on earth. The sun is a very reliable, pollution free, renewable source of energy. Sustainable energy is a highly interesting and innovative concept which needs serious attention as energy costs are always on the rise, the human population is increasing, the environment is being polluted, and resources are being depleted.

At the global level, renewables represented approximately 58.5% of net additions to global power capacity in 2014, with significant growth in all regions (Purohit & Purohit, 2017). The International Energy Agency (IEA) estimated that in 2050, about 11% of electricity production would be provided by solar energy worldwide (Katinas, et al., 2013). Sri Lanka's annual average solar irradiation is in the range of $5.5 \text{KWhm}^{-2}\text{d}^{-1}$ and throughout the year with low seasonal variations. The solar irradiation that arrives at ground level depends mainly on the day of the year, the latitude of the location and on atmospheric transmittance, also termed as clearness index K_T (Department of Meteorology, 2016). Since Sri Lanka is a country near the equator getting sunlight throughout the year without much seasonal variations, we have much possibility of using Solar Energy throughout the year without interruption.

This is an analysis for the identification of factors that effects the adoption of solar energy technology in Western province, Sri Lanka. Sri Lanka is 98.4% electrified with grid electricity (Board, 2016), and they already have electricity supply to energize their households and equipment. Therefore introducing solar panels to the same consumer base will be big a challenge. But considering about world requirement of introducing renewable energy sources (Solar Energy) due to the upcoming Energy crisis, here we have to analyze the factors affecting when doing the same with Sri Lankan households.

Studying the factors affecting the adoption with solar energy implementation in households in Sri Lanka is a contemporary issue which needs to be addressed due to global requirements and the energy crisis. Fuel diversifying and energy security in the generation of electricity was identified as a strategic objective and development of renewable energy projects was identified as a part of this strategy in the National Energy Policy 2006. (Sustainable Energy Authority, 2017) Introducing solar panels to the existing electricity users will be big a challenge. But considering the upcoming energy crisis we have a duty to move to solar energy and find the factors which are more considerably affecting the adoption with its technology.

There are five main research questions addressed in this study. They are respectively addressed to observe the impact of relative advantage, perceived behavioural control, perceived ease of use, awareness of technology and perceived cost with respect to the intention of adopting solar energy technology in Sri Lanka. Throughout the research questions it is addressed respectively whether the relative advantage has an impact to adopt with solar energy technology, whether the perceived behavioural control has an impact to adopt with solar energy technology, whether the perceived ease of use has an impact to adopt with solar energy technology, whether the awareness of the technology has an impact to adopt with solar energy technology whether the perceived cost has an impact to adopt with solar energy technology. Core objective of the research is to address mentioned questions.

LITERATURE REVIEW

Background

The devices that convert daylight without delay into power are called solar photovoltaics (PV) or solar cells or simply PV. In the year of 1954, the modern shape of the solar cell was invented at Bell Telephone Laboratories. The conversion of light (photons) to electricity (voltage), is a physical technique of is the term “photovoltaic” impact and it is so-referred to as “PV impact”. (Taylor, et al., 2014). Global PV production ability was exceeded as much as 500 kW within the year of 1997. Total installed solar PV capacity changed into 2 GW and in year 2002, and 10 years later, in 2012, it exceeded 100 GW. New additions of Photo Voltaic solar cells in 2013 came alone with 39 GW and according to the Tylor et al, for the first time it exceeded the new capacity additions of wind in a given year. Year 2014 was estimated as the year with records according to Tylor et al, with total installed PV capacity of 180 GW at the end of the year world widely. (Taylor, et al., 2014).

Sri Lankan Energy Situation

By the end of the year 2014, 98.4% of the households in the Sri Lanka was electrified. The average per capita electricity consumption increased to 540 units from 519 units (kWh/person) in the previous year thus recording an increase of 21 units. (Ceylon Electricity Board, 2014). The total electricity sales during the year increased from 10,621 GWh in the previous year to 11,063 GWh which was a percentage increase of 4.2%. The average daily consumption of electricity in the year was 30.3 GWh as against 29.1 GWh in the year 2013. The trend of using renewable energy sources has increased with time to a considerable amount. Among the renewable energy sources, solar power is the most common method used in Sri Lanka. Meanwhile in solar Energy, installed capacity in megawatts as well as the number of solar

connections have increased. Renewable energy usage to produce electricity in Sri Lanka was limited to large investors a few years ago, because it usually costs millions of rupees. But with the introduction of the “Net Metering” concept by 2008, the opportunity to produce electricity using renewable energy was possible even for small investors and it was open to all electricity customers in Sri Lanka.

Factors Influencing Adoption of Solar Power Systems

Due to the rapid consumption of conventional energy resources such as crude oil, coal, and natural gas, many initiatives taken all over the world have addressed towards the efficient use or replacement of the resources. Several renewable energy sources have been introduced and argued as alternatives to traditional sources to protect environmental resources and improve the quality of life. With the growing concerns about Green House Gas (GHG) emissions and consequent climate change, renewable energy sources have become more attractive options for power Generation around the world. (Luthra, et al., 2015)

Relative Advantage of Using Solar Energy

Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. The percentage of relative advantage can be measured in economic terms, social-prestige factors, convenience, and satisfaction. (Rogers, 1983). It does not decide by the innovation’s “objective” advantage, but by the individual’s consideration as advantages. The greater the perceived relative advantage of an innovation, the higher its rate of adoption of the innovation. (Rogers, 1983)

Consumer’s perception on potential expectations about their benefits are the main key point of individuals associated with attitude towards new technology, and this was proved in several researches. (Chen, et al., 2013). Prior research on Technology acceptance model (TAM) and theory of planned behavior (TPB) has proved that benefits of newly introduced technologies or relative advantage are indirect influence with user’s intention to adopt with new technology. (Mathieson, 1991), (Rogers, 1983). Relative advantage is moreover defined as the extent to which an innovation is perceived as better than the idea it supersedes or its nearest alternative. Relative advantage is one of the best predictors of the innovation and it is positively related to the innovation’s rate of adoption. Most of the users consider renewable energy as an environmental perspective as well as the benefit of future generations. This can be measured in financial terms as well social status, comfort, and satisfaction. The greater the perceived relative advantage of renewable energy, the more rapid its rate of adoption will be. (Rogers, 1983).

Perceived Behavioural Control

Perceived behavioral control is the degree to which a person feels to engage in a behavior (Ajzen, 1991), the two aspects on influential are how much control a person has over his behavior and how confident a person feels about being able to perform or not perform the behavior. Perceived behavioral control is determined by the individual's beliefs regarding the power of both situational and internal factors to facilitate performing the behavior (Ajzen, 1991). Perceived behavioral control is the extent to which a person feels able to engage in a behavior (Armitage & Conner, 2001). Existing energy technologies have been developing for centuries. Therefore as per Wiser and Pickle, explains to switch between an alternative energy technologies, consumers have to do number of calculations regarding its cost, change in living standards and changes to other socio-economic parameters. (Wiser & Pickle, 1997). Technology acceptance model identifies Attitude towards using as a mediator between behavioral intention to buy and perceived ease of use and perceived usefulness. In the theory of reasoned action attitude towards behavior is acting as a mediators between beliefs and evaluations and behavioral intention.

Individual behaviors are not only impacted by progressions of valuation and expectations but they also rely on the belief of the technology. In the TPB, Ajzen proposed the variable of Perceived behavioral control (PBC). He suggested that perceived behavioral control belief starts from two sources. First one is the inner force of individual, such as self-sufficiency, and the outer force that controls external conditions (Ajzen, 2002) For example, after a specific attitude is formed, people need to evaluate higher relative advantage and higher perceived behavioral control. Perceived behavioral control is hypothesized to directly influence intention to use solar energy.

Perceived Ease of Use

Ease of use can be defined as the degree to which users easily understand, operate and maintain a new technology. Ease of public use of renewable energy can be ensured by using an effective quality control mechanism and by understanding the living standards of the target group. (Fishbein & Ajzen, 1975). Wider public support and use of renewable energy are possible if users find the technology to be user-friendly, family-friendly and identical to their standard of living (Seyal & Rahim, 2006). New technology decision implementation is based on its perceived ease of use (Seyal & Rahim, 2006). Technology acceptance model (TAM) suggests that user's acceptance of new technology is based on their perceived ease of use. Perceived

ease of use is influenced by users' opinion regarding installation, regular use, maintenance and recycling of the new technology. Ease of use is explained from the technical standpoint of renewable energy. Studies perceive that the use of solar energy has numerous technical barriers to end users. As a result, mass users show unwillingness to invest in solar energy. Stephen and Ioannou have argued that family and community friendly renewable technology will positively influence the intention to use renewable energy.

Awareness of the Technology

The degree to which users are conscious of the current new technology and its benefits and weaknesses can keep track of updates on new technologies. Awareness is one of the key issues in adoption. Creating awareness of the product is important to the customer. (Fishbein & Ajzen, 1975) Information gap makes the acceptance of new technology much less likely (Zografakis, et al., 2010). Adoption can be defined as the acceptance and continued use of a product, service or idea. According to Rogers and Shoemaker consumers go through "a series of processes in knowledge, conviction, decision and confirmation" before they are ready to adopt a new product or service. (Rogers & Shoemaker, 2001) The adoption or rejection of an innovation begins when "the consumer becomes aware of the innovation" (Rogers & Shoemaker, 2001). Howard and Moore stressed that in adoption, "consumers must become aware of the new brand." (Howard & Moore, 2002). More knowledgeable consumers are assumed to be more willing to adopt.

Perceived Cost

The cost of Renewable energy incorporates both a holistic outlook on the initial requirement to set up the machines as well as their periodic costs. Higher the cost of the technology, the lower its value to users, and lower its rate of usage (Premkumar, et al., 1997). Price/costs is one of the single most important factors that influences consumer adoption of innovation. If consumers are to use new technologies, the technologies must be reasonably priced relative to alternatives. Otherwise, the acceptance of the new technology may not be viable from the standpoint of the consumer.

According to many researches it is found that there is a direct and significant relationship between cost and the adoption of technology. (Seyal & Rahim, 2006). Higher the benefit-cost ratio, the positive the intention to switch to renewable energy. This scenario is common for solar energy as well. The minimum investment required to install renewable energy can be higher. Rogers et al. (2008) and West et al. (2010) suggested availing economic incentives to ease the financial burden from the users. The summary of these studies report that on the

average users are reluctant to pay more than 5% when compared to their existing energy expenses on conventional energy. This negative attitude may reduce users' intention to switch to renewable energy.

Theories Supporting the Research

Factors affecting adoption of Solar Energy technology is based on any one or a combination of the following key determinants, as per the literature. Past findings provide guidance to the researcher to draw links between current situations and the literature which play a major role. During the research of Shah Alam et al they have drawn attention to few factors affecting adoption of renewable energy sources using few of the theories. (Shah Alam, et al., 2014) Different theories have been used to explain the determinants of PV adoption. The most common theories applied in the literature are Diffusion of innovation DIT (Rogers, 1983), Technology Acceptance Model, TAM(Davis, 1989), Theory of Planned Behaviour (TPB) (Fishbein & Ajzen, 1975)and Transaction cost economics theory (TCE) (Williamson, 1979)

HYPOTHESIS AND CONCEPTUAL FRAMEWORK

In adoption of solar energy technology from conventional energy technologies is a socially oriented process and an individual's perception plays a vital role in it. (Frankfurt School of Finance & Management, 2012).The conceptual model for the study was formulated using the concepts of Alam et al.(Shah Alam, et al., 2014)and the findings of (Kim, et al., 2014), and other unique factors that were identified during the literature review as the influencing factors that affect solar energy adoption. Usage of technology is largely influenced by multidimensional forces such as regulatory, economic dimensions and societal forces. This study focuses on a preliminary understanding of household users' perceptions of the solar energy concept. Therefore the conceptual framework also focuses on pre-adoption focus on solar energy technology.

Relative Advantage

Several studies have shown that consumer's perception about potential expectations of own benefits is individually associated with consumers attitude towards new technology.(Chen, et al., 2013).Prior research on Technology acceptance model (TAM) and theory of planned behavior (TPB) has verified that relative advantage or benefits of newly introduced technologies are indirect associate with user's intention to employ the technology. (Mathieson,

1991),(Rogers, 1983). Relative advantage has been found to be one of the best predictors and is positively related to an innovation's rate of adoption. Users consider renewable energy both from an environmental perspective as well as for the benefit of future generations. Relative advantage can be measured in financial terms as well social status, comfort, and satisfaction. The greater the perceived relative advantage of small- scale renewable energy, the more rapid its rate of adoption will be.(Rogers, 1983). Thus hypothesis 1 (H1) has been formulated as follows.

H1: Relative advantage has an impact on solar energy technology usage intention in the Western Province, Sri Lanka

Perceived Behavioural Control

Perceived behavioral control has two aspects, one is how much control a person has over the behavior and the other is how confident a person feels about being able to perform or not perform the behavior. (Ajzen, 1991). Existing energy technologies have been developing for centuries and therefore switch between an alternative energy technologies, consumers have to do number of calculations regarding its cost, change in living standards and changes to other socio-economic parameters.(Wiser & Pickle, 1997).Therefore the second hypothesis (H2) is formulated as follows.

H2: Perceived behavioural control has an impact on solar energy technology usage intention in the Western Province, Sri Lanka

Perceived Ease of Use

New technology decision implementation is based on its perceived ease of use(Seyal & Rahim, 2006). The degree to which users easily understand, operate and maintain a new technology is called ease of use. Ease of public use of renewable energy can be ensured by using an effective quality control mechanism. (Fishbein & Ajzen, 1975). Solar energy as a renewable energy should be simple to install, rather without the help of any technical expert. The usage policy and maintenance also should be simple to understand. Thus hypothesis 3 (H3) is developed as follows.

H3: Perceived ease of use has an impact on solar energy technology usage intention in the Western Province, Sri Lanka

Awareness of the Technology

Several studies have found that awareness is one of the primary issues in technology adoption (Zografakis, et al., 2010). The information gap makes the acceptance of new technology much less likely (Zografakis, et al., 2010). Therefore the fourth hypothesis (H4) is formulated as follows.

H4: Awareness of the technology has an impact on solar energy technology usage intention in the Western Province, Sri Lanka

Perceived Cost

Cost for solar energy consists of an initial investment to set up the machines as well as their periodic maintenance costs. The higher the cost of the technology, the lower its value to users, and the lower its rate of usage (Premkumar, et al., 1997). According to many researches it is found to be a direct and significant relationship between cost and the adoption of technology. (Seyal & Rahim, 2006). Thus hypothesis 5 (H5) is developed as follows.

H5: Perceived cost has an impact on solar energy technology usage intention in the Western Province, Sri Lanka

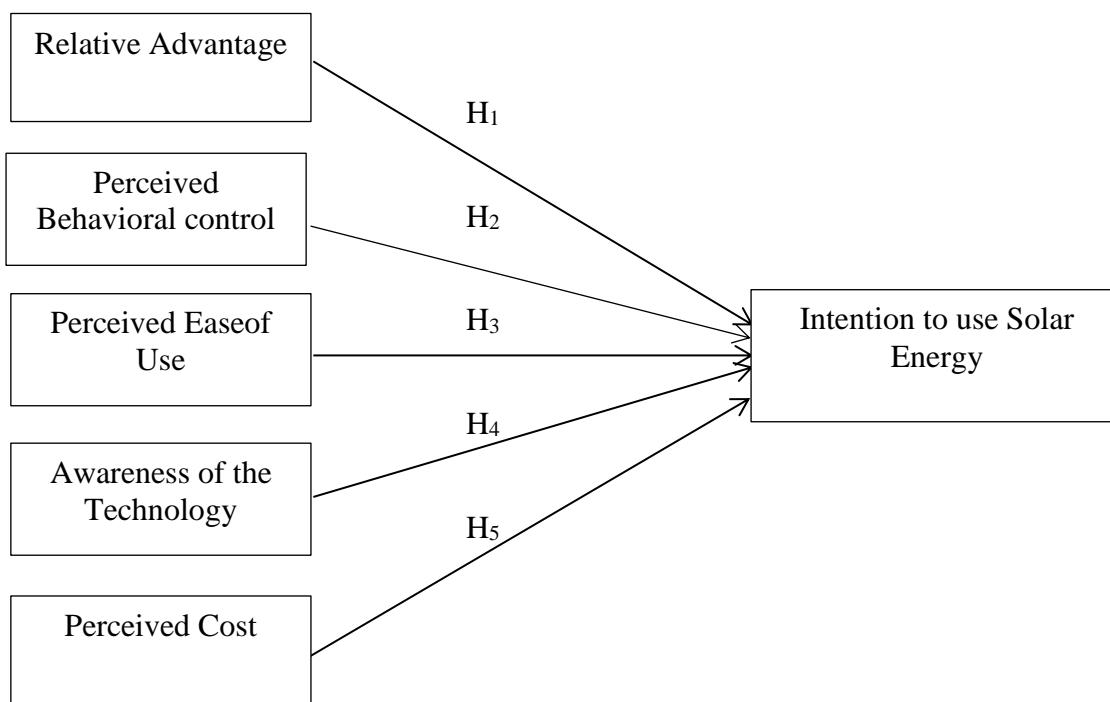


Figure 1: Conceptual framework

Source: Author Construct

Methodology

Participants and Procedure

As per the nature of the objectives, this study falls under the positivist paradigm. According to Ramenyi the researcher is working with observable social realities and the end result can be generalized to similar circumstances. (Remenyi, et al., 1998). For this, a simple random sampling technique was employed to draw the sample from the population. The main data collection tool of this study is the questionnaire survey. The data collected on all variables comprise primary data, where the nature of the data mainly involves the perceptions of the respondents. The study administered the questionnaire through an electronic form (email & google form) as well as printed questionnaires.

More than 1000 questionnaires were distributed randomly among Western province households during a three month period. As a result, a total of 393 (39.3%) of questionnaires were returned. Of the 393 questionnaires collected, the completed ones were used in the analysis. This response rate is considered sufficient considering that, according to (Sekaran U., 2003), a response rate of 30% is acceptable for surveys. Then, the questionnaires were screened and incomplete questionnaires were rejected. Accordingly, 384 questionnaires were forwarded for the data analysis. The data were analyzed using Structural Equation Modeling (SEM) with the aid of AMOS (Analysis of Moment Structures) 23.0.

Measures

The questionnaire comprises 28 questions to measure the 5 constructs (Relative Advantage, Perceived Behavioural Control, Perceived ease of use, Awareness of the technology, Perceived cost). The Part (A) includes questions formulated in order to obtain a general understanding of demographic information of the respondents, such as their gender, age, highest education qualification, occupancy status and establishment size. The Part (B) includes adoption factors related information. All questions used in the study were from pretested questions used by other researchers, for example, Kim et al and Alam et al. The Part (B) was developed by drawing on existing scales. All constructs were measured using multiple items.

Data Analysis and Results

A pilot survey was conducted using 30 respondents to identify and eliminate potential problems in the questionnaire design (Malhotra & Peterson, 2006) and to examine the validity and reliability of the measures used in the questionnaire (Sekaran & Bougie, 2009). The Cronbach's

alpha coefficient of the pilot survey was greater than 0.7 for all constructs which is an acceptable value for a pilot test (Hair, et al., 1998).

After the pilot survey, all data were winsorized at 95% level to remove outliers and the 384 cases were forwarded for missing value analysis. In this study, there were no missing values in the 384 questionnaires. After missing value data analysis and outlier detection, there were 9 outliers found and removed. The data were tested for multivariate assumptions such as normality, linearity, homoscedasticity and multicollinearity. Normality was tested by skewness and kurtosis where the values were within + 2.0 (Garson, 2009). To measure linearity and homoscedasticity normal probability plots (p-plots) and scatter plots were drawn respectively (Hair, et al., 2010) and no deviations were identified. Finally, multicollinearity was assessed using a correlation matrix and all inter-correlation values were less than 0.9. Summarizing the results of multivariate assumptions, all variables were assured of normality, linearity, homoscedasticity and multicollinearity. The Kaiser-Meyer-Olkin (KMO) was used to measure the adequacy of the sample of the study. KMO results showed that the sample adequacy of all constructs is greater than 0.5 which indicates that the sample is adequate (Malhotra & Dash, 2011). The unidimensionality of all constructs was ensured using Exploratory Factor Analysis (EFA). Cronbach's alpha was used to measure the reliability of all constructs and its value is greater than 0.7, and thus, it can be concluded that the reliability is established for all constructs. Thereafter, data were forwarded for multivariate analysis.

The Measurement Model

The measurement model "specifies the indicators for each construct, and enables an assessment of construct validity" (Hair, et al., 2010). Based on the conceptual model, there are 5 latent variables, namely, relative advantage, perceived behavioural control, perceived ease of use, awareness of the technology and perceived cost. As the initial measurement model portrayed a poor fit, the model was improved using modification indices. Stepwise deletion of items below 0.5 factors loading was applied to further refine the initial model. During the modification process, further, covariance were drawn between the error terms of several items for improvement purposes. The final measurement model showed acceptable fit.

Table 1: Model-fit statistics of measurement model**Source: Survey Data**

<i>Absolute</i>					<i>Incremental</i>		<i>Parsimony</i>
<i>CIMIN/DF</i>	<i>GFI</i>	<i>AGFI</i>	<i>RMSEA</i>	<i>IFI</i>	<i>TLI</i>	<i>CFI</i>	<i>PRATIO</i>
1.167	.911	.875	.046	.977	.973	.926	.922

According to Hair et al., (2010), CMIN/DF (X^2/df) value close to one and not exceeding 3, Comparative Fit Index (CFI) value close to 1, Tucker- Lewis Index (TLI) value close to 1 and Root Mean Square Error of Approximation (RMSEA) value of about 0.08 or less indicates a good model fit. As further recommended by Hair et al., (2010), the stated GOF (goodness of fit) indicates must include at least one absolute measure (X^2/df / p value/GFI/RMSR/RMSEA), one incremental measure (NFI/CFI/TLI/RNI) and one parsimony (PRATIO/PCFI/PNFI) fit measure. As shown in Table 1, the CIMIN/DF of the measurement model is close to 1 and below 3, the RMSEA is 0.046, thus providing absolute model fit. Also, all incremental and parsimony indices depicted in the Table 1 are close to 1, assuring satisfactory model fit.

Table 2: Convergent and discriminant validity**Source: Survey Data**

<i>Construct</i>	<i>Measurement</i>	<i>RA</i>	<i>PBC</i>	<i>PEU</i>	<i>Awareness</i>	<i>Cost</i>
<i>Relative Advantage</i>	<i>RA</i>	0.717	0	0.001	0.004	0.002
<i>Perceived Behavioral Control</i>	<i>PBC</i>		0.747	0.053	0.001	0.022
<i>Perceived ease of use</i>	<i>PEU</i>			0.708	0.044	0.002
<i>Awareness</i>	<i>Awareness</i>				0.866	0
<i>Cost</i>	<i>Cost</i>					0.822

Note: Diagonal entries (in bold) are the square root of AVE for all constructs; sub-diagonal entries are the correlation coefficients estimates between each construct

The Confirmatory Factor Analysis (CFA) was used to further test convergent and discriminant validity of the constructs. As explained by Malhotra & Dash (2011) 0.5 or higher factor loading and 0.5 or greater Average Variance Extracted (AVE) assures satisfactory convergent validity.

In addition, Composite Reliability (CR) must be 0.7 or higher. Generally, discriminant validity can be ensured if the square root of the AVE is larger than the correlation coefficients (Malhotra & Peterson, 2006). Further, in ensuring discriminant validity, Maximum Shared Variance (MSV) and Average Shared Variance (ASV) must be less than AVE (Hair, et al., 2010). Moreover, the correlation coefficients among the study constructs do not exceed 0.85 (Kline, 2011). Thus, all the constructs in the study represent different concepts. As all of the above requirements are fulfilled, the convergent and discriminant validities are satisfactory, as shown in Table 2.

The structural model

The structural model defines the relationships among the latent (unobserved) constructs (Byrne, 2010). The proposed structural model is composed of six major latent constructs, of which five are exogenous (relative advantage, perceived behavioural control, perceived ease of use, awareness & cost) and one endogenous (intention to adoption). All hypotheses were tested at the 95% confidence level.

Table 3: Model-fit statistics of structural model

Source: Survey Data

<i>Absolute</i>					<i>Incremental</i>		<i>Parsimony</i>
<i>CIMIN/DF</i>	<i>GFI</i>	<i>AGFI</i>	<i>RMSEA</i>	<i>IFI</i>	<i>TLI</i>	<i>CFI</i>	<i>PRATIO</i>
2.440	.868	.807	.063	.931	.907	.938	.904

Model fit statistics for the structural model 1 are summarized in Table 3. Accordingly, model fit statistics values of structural model 1 shows a good model fit. (CIMIN/DF 1.148, GFI .903, RMSEA .031, IFI .988, TLI .985, CFI .988). CIMIN/DF is less than 3. GFI is greater than 0.9 and RMSEA shows a good absolute model fit. Further, incremental measures (IFI, TLI, CFI) also shows a good model fit. In addition, parsimony indices confirm the satisfactory level of model fit.

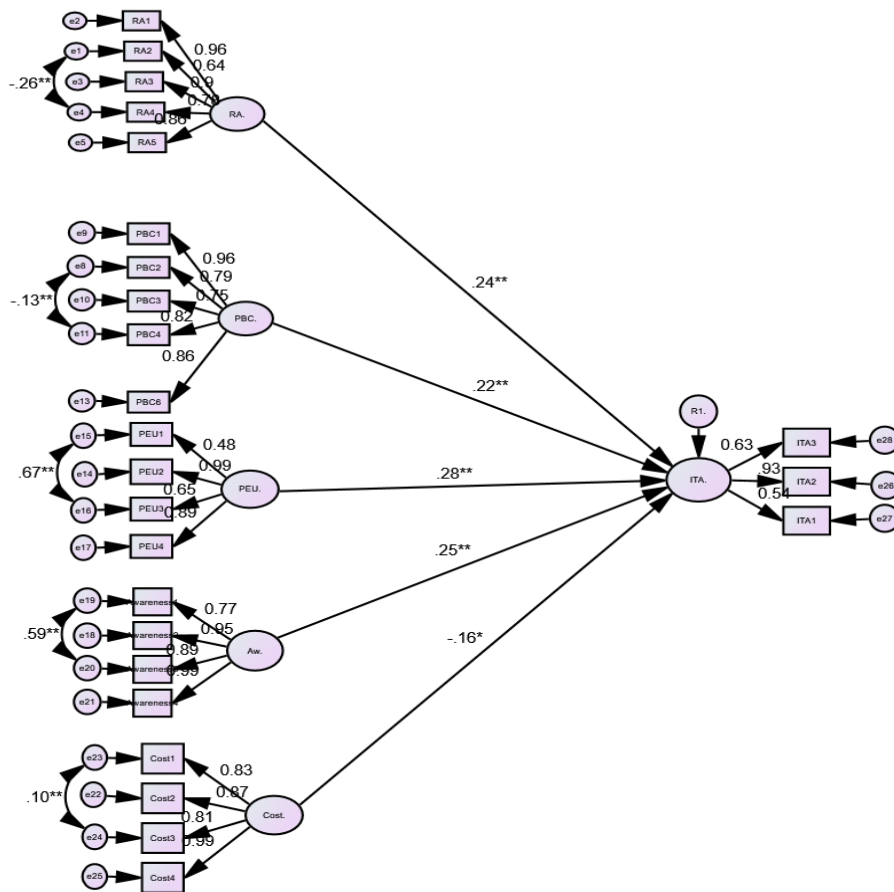


Figure 2 - The structural model
Source: Author Construct

Hypothesis 1 investigated the relationship between relative advantage (RA) and intention to adopt solar energy (ITA). It was hypothesized that there would be a significant effect on the adoption of solar energy technology with relative advantage. The results, demonstrated positive and significant paths from perceived ease of use and intention to use solar energy technology. ($\beta = 0.24, p < 0.008$). Thus, hypotheses 1 was supported.

Hypothesis 2 tested the impact with perceived behavioural control (PBC) and intention to adopt with solar energy technology. (ITA). It was hypothesized that there would be an impact on intention to adoption and perceived behavioural control are positive and statistically significant ($\beta = 0.22, p < 0.009$). Thus, hypothesis 2 was supported.

Hypothesis 3 tested the impact with perceived ease of use (EU) and intention to adopt solar energy technology. (ITA). It was hypothesized that there would be an impact on intention to adopt due to the perceived ease of use of the technology. The results suggested that the impact on intention to adopt and perceived ease of use are negative and statistically significant ($\beta = 0.28, p < 0.008$). Thus, hypothesis 3 was supported.

Hypothesis 4 tested the impact with awareness (Aw) and intention to adopt with solar energy technology. (ITA). It was hypothesized that there would be an impact on intention to adoption due to the awareness of the technology. The results suggested that the impact on intention to adoption and awareness on technology are positive and statistically significant ($\beta = 0.25, p < 0.026$). Thus, hypothesis 4 was supported.

Hypothesis 5 tested the impact with perceived cost (Cost) and intention to adopt solar energy technology. (ITA). It was hypothesized that there would be an impact on intention to adopt due to the perceived cost of the technology. The results suggested that the impact on intention to adopt and cost of the technology are negative and statistically significant ($\beta = -0.16, p < 0.057$). Thus, hypothesis 5 was supported.

DISCUSSION

The first research question addressed is the impact has the relative advantage on solar energy technology. Specifically, relative advantage has a positive influence on adoption of solar energy technology, and also concerns of environmental benefits, environmental involvement, environmental involvement benefits over individual, air pollution decrease due to solar consumption, decrease on carbon foot print production, reducing pressure on energy production and competitive advantage to the country have an effect on solar energy adoption. This study also reveals relative advantage as the second-most important factor.

The second research question addressed the impact on solar energy technology has with the perceived behavioral control. The results of this study revealed that perceived behavioral control has a positive impact with solar energy technology adoption. Thus, perceived behavioral control increase the influence to adopt with the solar technology. This finding is consistent with recent research by (Shah Alam, et al., 2014) and (Alam & Rashid, 2012) reported that, the influence on perceived behavioral control and an intention to adopt a solar energy technology has a positive influence. These findings are also consistent with the Technology acceptance model (TAM), and Diffusion of Innovation theory of (Rogers, 1983)

where the individuals behavioral patterns are observed. This study also reveals perceived behavioral control as the least important factor.

The third research question addressed the impact solar energy technology has on the perceived ease of use. Four items to measure ease of use were, ease of installation, its understandability, ease of in operation and skills on handling. Perceived ease of use is influenced by users' opinion regarding installation, regular use, maintenance and recycling of the new technology. (Shah Alam, et al., 2014) The perceived ease of use was identified as an influencing factor for the adoption of solar energy technology. It could be argued that the greater the ease of use the new technology is perceived to have, the more likely it is that it would be adopted.(Stephenson & Loannou , 2010.) To enhance users' intention to purchase solar energy for household usage, manufacturers and suppliers of solar energy can provide a simple and easily used product. This study also reveals perceived ease of use as the most important factor in adoption.

The fourth research question addressed the impact solar energy technology has with the awareness of the technology. The results show that awareness of the technology has a big impact of adoption with solar energy technology. Specifically, awareness has a positive influence on adoption of solar energy technology. Consequently people will associate this technology with solar power and recognize it immediately. It will increase people's concern of a recalling power of the technology, recognition, and imaging.

The findings of this study revealed that perceived cost has an impact on intention to adopt solar energy. Further, these results suggest that, perceived cost does have a statistically direct negative effort on adoption of solar energy in the Western province. Specifically, perceived costs reduce the intention to adopt solar technology. Further if the cost is the high adoption of the technology will reduce.

These findings are consistent with the findings of previous research in Malaysia, for renewable energy technologies.(Shah Alam, et al., 2014), (Alam & Mamunur, 2012)

THEORITICAL CONTRIBUTIONS

The study provides inferences made from an instrument that is valid and reliable for the current study's context for evaluating the relative advantage, perceived behavioural control, and perceived ease of use, awareness and cost. Further, the study provides a research framework that identifies significant relationships between them. This framework provides a foundation and insight for future researchers in the area of solar energy related researches. Although several previous studies discussed the challenges on implementing renewable energy sources

they have not spoken about the impact of solar energy technology adoption specifically. Therefore, the instrument developed in this study captures three important factors that affect solar energy technology adoption. The new instrument provides better guideline for researchers in exploring solar energy issues, and thus, can be considered as a strategic management tool.

LIMITATIONS AND FUTURE DIRECTIONS

Although this research has made significant contributions from both theoretical and practical points of views, it also has some limitations, which are described below. The examination of those limitations will assist future researchers to work around them.

The main limitation in this study is geographical unfairness. The population of the Western province was taken into consideration and compared, to get an idea for the whole of Sri Lanka. However, the findings of this study may not represent the views of all potential consumers of Sri Lanka due to the geographical differences and social cultural differences. Their life style differences may also affect. Therefore, it may not be appropriate to generalize the results to all potential solar consumers in Sri Lanka.

Due to the limited number of observations collected, data may be limited to the area tested through the survey questionnaire. New mailing lists and research methods can be used to improve the response rate. The way we collected data for this research was through google forms and distributed forms among Western province households. But if its' possible to distribute questionnaires among random households in a more appropriate manner with high frequency, that would be more effective.

CONCLUSION AND RECOMMONDATIONS

The research has shown the five important factors that have an impact on solar energy adoption. The analytical results prove that there is an impact on solar energy adoption with all the factors. Generally all the results gained were are consistent with previous studies. It would be interesting to study the same factors with a more average solar energy user population with different user patterns.

The aim of this study was to examine the factors affecting the intention to use solar energy in Western province households. This study also enhances our knowledge and expands it about solar energy as a source of green energy for small-scale household use in urban areas. This

examines the rationales of accepting or rejecting the use of alternative energy sources i.e solar. From a managerial perspective, these findings provide support for investment decisions for the investors who are interested in the green energy concept with the environment friendliness, as well as for decisions concerning the improvement of renewable energy, which could be taken into consideration for residential needs.

This research was performed under a theoretical framework that was developed based on theories of Technology acceptance model (TAM), Theory of planned behavior (TPB) and Diffusion of Innovation (DOI). The data analysis interpreted by AMOS shows that perceived ease of use and is the most important elements of intention to use solar energy for household purposes. As a good sign of improvement the Sri Lankan government has focused its attention on developing renewable energy technologies in Sri Lanka like wind, solar and geo thermal. This is a good sign for future endeavors in green energy.

Regardless of certain limitations, this research has put forward some important contributions. Firstly the researcher reviewed the existing literature in the solar energy adoption area and found there is a small gap for a research which has not yet been filled by any researcher. Then combining a few established theories along with the literature a theoretical framework was built. We lastly examined the factors contributing to the usage intention of solar energy.

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Impact of Green Supply Chain Management Practices on Organizational Performance of the Manufacturing Sector In Sri Lanka

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Abstract

The present study explores the impact of implementing Green Supply Chain Management Practices on Organizational performance, in terms of environmental, operational and financial performance among manufacturing firms in Sri Lanka. Further the researcher examined the impact of Green Supply Chain Management (GSCM) Practices on three types of organizational performance dimensions (environmental, operational, and financial) separately to identify which performance dimension has the highest impact from the green supply chain management practices in Sri Lanka, especially concerning on manufacturing industry. Survey data were collected from 150 manufacturing firms which have already implemented GSCM Practices and manufacturing industry covering a variety of sectors including automobile, garments, food and beverage, electronics, chemicals. Structural Equation Modeling (SEM) was used to analyze the relationship between variables. The empirical evidence verifies that, a significant positive relationship between GSCM practices and organizational performance is observed. It can be concluded that higher the adaptation of GSCM practices, higher will be the organizational performance in Sri Lankan Context. Further, operational performance dimension has highest impact from GSCM practices. It is also concluded that higher the adaptation of GSCM practices, higher will be the operational performance. This suggests, this means impact of GSCM practices lead to increase amount of goods delivered on time, decrease inventory levels and scrap rate, promote products quality, reducing and eliminating waste, increased product line and finally improved capacity utilization under the operational performance.

Key Words: Green Supply Chain Management, Green Supply Chain Management Practices, Organizational Performance, Structural Equation Modeling (SME)

INTRODUCTION

Today's business environment is more global and competitive than it has been in the past. The modern business is characterized with shorter product life cycles, rapid new product

introductions, sophisticated customers who are increasingly knowledgeable and well informed. In this situation, there has been increasing emphasis on environment-friendly corporate activity in today's business world and many progressive companies are embracing green supply chain management. Increase in globalization in every corner of the world has led most of the firms to recognize the importance of pursuing Green Supply Chain Management (GSCM) practices especially in relation to supply chain management which not only result in environmental benefits but also business benefits (Laosirihongthong, Adebajo & Tan 2013).

Throughout the 1990s, researchers and policy-makers increasingly are concerned with the environment and climate change and have become enthusiastic about greening supply chain (Walker Sisto & McBain 2008). Also companies have realized that environmental management is a key strategic issue with the potential for a lasting impact on organizational performance. For example, more than 40,000 companies have implemented ISO14001, the environmental management system standard (Zhu & Sarkis 2006).

It is important for organizations to well manage its supply chain activities to contest successfully and to testify long term survival. Also due to the today's complex and dynamic business environment, organizations need to focus more on Green Supply Chain Management Practices on a regular basis as customers are shifting towards environmental concerns than ever before.

Zhu, Sarkis & Lai (2012) argue that increasing in both institutional and technical pressures have made firms to focus on GSCM practices. If Organizations fail to implement this type of GSCM Practices, It may result in negative consequences for the entire business because of heavy competition and availability of substitutes. Moreover, scholars argue that "balancing economic and environmental performance had become increasingly important for organizations facing competitive, regulatory and community pressures" (Shultz & Holbrook 1999). Depending on the above we can realize that the importance of practicing GSCM practices in order to enhance the organizational performance and also to be sustainable.

As far as the Sri Lankan business context is concerned there is less evidence in terms of adaptation of green supply chain management practices and the influence of GSCM practices on organizational performance, though Sri Lanka has been noted as one of the important Countries to investigate the above noted areas by some scholars (e.g. Zhu & Sarkis 2004;

Mitra&Datta 2013). That means there is a significant requirement to carry out a research on impact of Green Supply Chain Management Practices on Organizational Performance in Sri Lankan context.

Under that, research objectives are drawn to study the impact of GSCM practices on organizational performance, in terms of environment, financial and operational since less previous studies were found in relation to the Sri Lankan context. Further to examine which performance dimension has the highest impact from the GSCM practices.

Based on that, concept of Supply Chain Management is the basic concept in this study. Supply chain management (SCM) has directed its attention to the role of the supply chain that impacts on the natural environment. A supply chain can be described as a network that consists of all departments such as procurement, buyer, supplier, manufacturer, finance, distributor, forwarded wholesaler, retailer or even customer that can be classified as upstream and downstream through physical product distribution or flow of information. The main focus of SCM is to provide the right product to the right customer, with the right form at the right cost, within the right time and quality. In addition, the major focus of SCM is to reduce cycle time and inventory and thus increase productivity, while the long term goal is to enhance profit through improved market share in the industry and the ability to fulfill customer satisfaction. By adding green concept to the supply chain, it has created a new concept where supply chain will have a direct relation to the environment. With that situation we can identify Green Supply Chain Management as a new systematic environmental approach in supply chain management. That is the main concept in this study. Therefore, we can identify that GSCM has emerged as an important new archetype for enterprises to achieve profit and market share objectives by lowering their environmental risks, and the impacts, while raising their ecological efficiency (Gupta 1995, p. 200). However, Green Supply Chain Management practices (GSCM) can be described as a set of green activities in procurement, manufacturing and distribution.

In specific, the Sri Lankan manufacturing industry has been selected since it contributes towards a relatively higher level of resource consumption and waste release.

In fact, according to Frosa&Venili (2002), manufacturer has been identified as the best person to study in the supply chain, since it utilizes resources to a greater extent. Also it is pointed out that since a major portion of world manufacturing will be taken place in Southeast Asia in the coming decade. Sri Lanka being one of the Asian suppliers for some international markets has

not been given much attention in the literature to investigate the GSCM Practices and its impact on organizational performance. Therefore this study has been considered especially on manufacturing industry in Sri Lanka.

The rest of the paper is structured as follows: In the following section, the literature review is presented. Then the research method and the results of the statistical analysis are given. Finally, the paper concludes with the discussion, implications of the findings and directions for future research.

LITERATURE REVIEW

This section commences with the broader concept of Green supply chain management and then narrows down to the topic of interest, which is Green Supply Chain Management Practices with Descriptions of five practices which is used to this study and finally discusses the organizational performance based on the past Literature.

Green Supply Chain Management (GSCM)

The concept of Green Supply Chain Management (GSCM) has been observed as a recent and novel managerial principle. GSCM is an environmental concept that is gaining popularity in the world. For many businesses in the world, adopting GSCM is a way to demonstrate their sincere commitment to Sustainability. Environmental consideration in the context of SCM has taken a leading attention from multinational enterprises as public pressure grew, for better products. Pressures from consumers, regulators, and other communities led companies to re-think their strategy on environmental SCM which brought about the establishment of the new concept, green supply chain management (GSCM).

Following the journal Webber 1982, the new GSCM concept has taken great attention, describing GSCM as “Integrating environment thinking into supply chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers, and end-of-life management of the product after its useful life”. As per Many authors have rendered their viewpoints.

According to Zhu & Sarkis (2004), GSCM is an integrated supply chain system consisting of suppliers, manufacturers, customers and reverse logistics management. Also Rao & Holt (2005), identify that GSCM as a form of Environmental improvement operational initiative that many businesses are adopting to address environmental issues.

Further Hervani et al. defined GSCM as follow:

GSCM = Green Purchasing + Green Manufacturing + Materials Management + Green Distribution+ Marketing + Reverse Logistics (Hervani et al. 2005).

In contrast Amit& Pratik (2012), have viewed GSCM to be functions of external (open system view of organization) and internal environment (management component). The external parties would be the requirements of governmental regulations, the domestic and foreign clients, competitors and neighboring communities which make firms to become aware of the importance of implementing GSCM practices for survival.

On the other hand, top management support, human resource capabilities, employees' involvement and shared expertise are some of the internal factors which are likely to impact GSCM practices. Following topic will be discussed on Green supply chain management Practices based on past literature.

Green Supply Chain Management Practices (GSCMP) in Manufacturing Firms

In the literature, the concept green supply chain practices (GSCMP) is commonly used for a variety of activities performed by an organization in order to minimize their impacts on a natural environment. Supply chains strive to maintain internal health and environmental sustainability using the capability to self-correct based on information from the external environment (Vochon&klessen 2007).

There is no doubt, that every organization must make effective and efficient use of resources. Hence manufacturing firms in particular play a vital role since those firms are of more potential to cause negative impact on the environment, when compared with service oriented firms. Literature on GSCM, further suggests that manufactures need to work with their suppliers of raw materials and component in order to produce environment friendly products (Dheeraj& Vishal 2012). Firms could use the power they possess to set environmental standards and criteria for their suppliers so that best raw material with minimal environmental harm will be provided for production.

As far as the global context is considered, many of the manufacturing firms have already adapted GSCM practices to ensure sustainability in the long run. How international firms adhere to these practices is via proper integration and coordination of all business processes; including purchasing, manufacturing, marketing, logistics, customer focus etc. (Muma et al. 2014).

The following research findings assist in understanding to what extent GSCM practices are being carried out in firms across the globe giving more emphasize to environmental protection and sustainability in the long run.

Depth study of Jordanian Food industry has pointed out that, activities such as cleaner production, environmental management systems and eco efficiency have been adapted in order to be eco-friendly. Further the government had also been considering on imposing green investment and other green related laws for the betterment of the economy (Diab, Bourini&Rumman 2015).

In addition to that research findings by Muma et al. (2014), four different GSCM practices related to the Kenyan Tea processing industry: green purchasing, green manufacturing, green material management, green distribution as well as reverse logistics have been identified. According to Diab, Bourini&Rauman (2014), firms operating in the food and beverage sector are more likely to focus on GSCM concepts like internal environmental management, green purchasing and warehousing and green building. In contrast, this study further presents that practices of eco designing and packaging have no impact on the environment.

Furthermore, other industries like logistics are more likely to adapt GSCM practices if they perceive that adaptation of such practices result in improving performance and better reputation (Lin & Ho 2011). As far as the paper and pulp industry is concerned, firms believe that economic and financial advantages influence firms to adapt GSCM practices.

The above findings from various research studies reveal that GSCM practices vary among different industries. However, less supportive literature was available in the Sri Lankan context within the scope reviewed.

Though increasingly focused and gained attention in the global area, as well as in the Asian context, the green concept is considerably a new phenomenon as far as the Sri Lankan context is considered, though the significance of studying GSCM practices in the Sri Lankan context has been highlighted in the literature (Zhu &Sarkis 2004)

Many Researchers had identified Multiple Dimensions of GSCM Practices. Upon undertaking a strong review of literature it was clear that there are certain dimensions which are being repeatedly used by scholars in measuring the influence of GSCM practices. For the purpose of this study, here consideration is made on the most commonly used dimensions by scholars in measuring the level of GSCM practices adaptation Including green purchasing, eco design, internal environmental management, reverse logistics and investment recovery.

Green Purchasing:-

Green purchasing is a common GSCM practice initiated by firms. As per the literature of Xiao (2006), the increasing environmental consciousness and commitment of businesses, governments and individuals have inspired the development of procurement and purchasing policies incorporated with environmental requirements. In addition to that, Diab, Bourini&Rumman (2015), define green purchasing as environmental plans for a firm's long term material, component or eco system requirements.

Eco Design:-

Firms which practice eco design and packaging, intend to manufacture products and packaging in a way that minimal consumption of materials and energy is utilized. In addition, firms are encouraged to facilitate the reuse, recycle and recovery of component materials and parts (Diab, Bourini&Rumman 2015).

Moreover, research suggests that early eco design work primarily focused on technical improvements to products and processes to mitigate environmental costs (Kumar &Chandrakar 2012). However, firms nowadays realize the fact that designing stage of the manufacturer alone cannot result in an environmentally friendly product. Hence it is important that firms focus on relationships with both direct and indirect parties including suppliers, consumers, recyclers and government authorities.

Internal Environmental Management:-

Internal environmental management is the practice of developing green supply chain management as a strategic organizational imperative through commitment and support of the imperative from senior and mid-level managers (Zhu et al. 2008a)

Further Internal Environmental Management (IEM) or environmental management refers to how organizations address and mitigate the adverse impact of its operations on the environment (Rao 2008).

Reverse logistics:-

Reverse logistics is one of the other main dimensions used by researchers. It is generally associated with recycling and waste management (Onyango et al. 2014). Further the researchers state that activities involved in reverse logistics include repair of failed items, recycle and reuse of materials and packing materials etc.

Investment Recovery:-

In literature, Kumar & Chandrakar (2012) define investment recovery (IR) as 'the organizations strategic use of reverse logistics recycling, redeployment, reselling and similar Techniques. Through investment recovery organizations tend to derive better value from materials and products which they produce.

Organizational Performance in Manufacturing Firms

Performance of a firm is one of the key indicators of how well a firm operates in a given environment. Performance is a measure for assessing the degree of a corporation's objective attainment (Amit & Pratik 2012).

Organizational performance measures can be classified under several categories by reviewing past literature. The main sources were obtained via journal articles of Zhu, Sarkis & Lai (2012); Zhu & Sarkis (2004); Zhu, Sarkis and Geng (2004); Laosirihongthong, Adebajo & Tan (2013). Based on those categories, Under Organizational performance, three dimensions were used to assess the level of GSCM performance in Sri Lanka. A brief description of those dimensions can be presented as follows.

Environmental Performance:-

Environmental Performance includes and concentrates on reduction of air emission, reduction of waste water, reduction of solid wastes, in addition to decrease of consumption for hazardous/harmful/toxic materials, decrease of frequency for environmental accidents, and improve an enterprise's environmental situation (Alvarez 2001).

Further Yang et al. (2013) defined environmental performance as the impact that the enterprise's activity has on the natural milieu.

Operational Performance:-

In general any manufacturing organization despite its scale of operation, needs to be successful in its operation (Diab, Bourini&Runnan 2015). According to Hasan (2013), some of the operational initiatives which firms would thrive to achieve via GSCM include cost savings, increased efficiency, product quality improvement, increase in market share, new market opportunities and increase in sales etc.

Financial Performance:-

According to Melnyk (2002), Financial Performance includes and concentrates on Positive economic performance, decrease of cost for materials purchasing, decrease of cost for energy consumption, decrease of fee for waste treatment, decrease of fee for waste discharge, and at the same time trying to eliminate the negative economic performance, such as, increase of investment, increase of operational cost, increase of training cost, increase cost of purchasing environmentally friendly materials.

Impact of GSCM Practices on Organizational Performance

The majority of previous studies on the effect of GSCM studies on performance identify the fact that there is a positive relationship which exists between the two constructs. Some of the research findings can be summarized as follows.

When the Kenyan Tea Processing industry, it had been found that there exists a positive relationship between GSCM practices and environmental performance (Muma et al. 2014). Similar results were also found by Diab et al. (2015) whose research was based on the Jordanian Food industry. Seman et al. (2012), further stresses some previous studies of GSCM in relation to manufacturing firms.

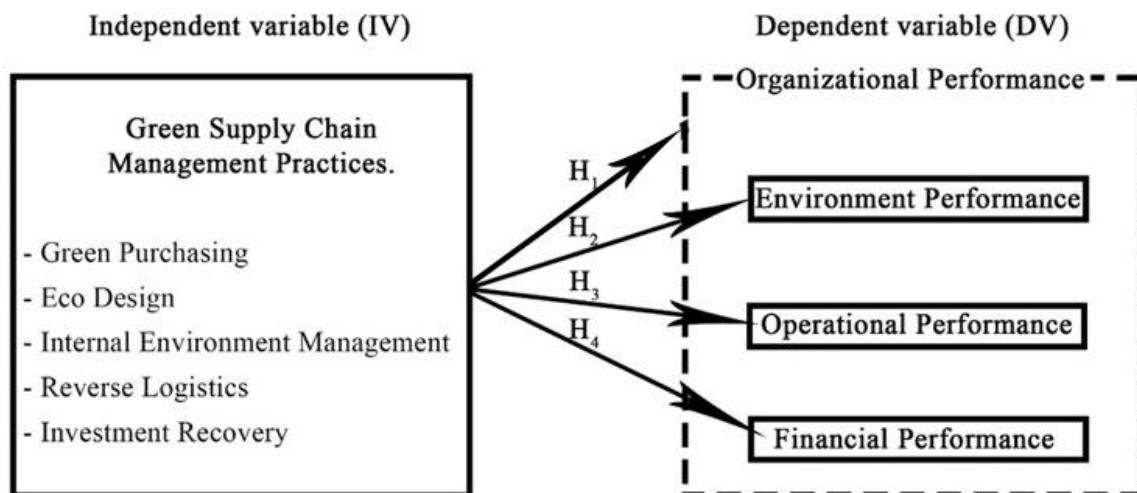
In one of his findings it had been pointed out that there is a direct influence of green supplier assessment and collaboration on environment performance. Further it had been found that greening the suppliers leads to green innovation and competitive advantage, thereby ultimately resulting in higher performance.

Also there are several studies that have attempted to link practices of GSCM with firm performance. While some studies such as Zhu & Sarkis (2004); Rao & Holt (2005); Green et al. (2005) found positive relationships, Giovanni & Vinzi (2012); Huang et al. (2012) showed there is no significant relationship between such practices and organizational performance. However, Azevedo et al. (2011); Wu & Pagell (2011) found a combination of positive and other relationships while Zhu & Sarkis (2007) recommended that economic performance remains the top priority for manufacturers.

METHODOLOGY

Conceptual Framework and Hypotheses Development

The framework shown in Figure 1 had been developed to investigate the primary objectives of this study, which is to identify the influence of GSCM practices on organizational performance and to study which performance dimension has highest impact from GSCM practices.



Source: Researcher constructed

Figure 1: Conceptual Framework with Hypotheses

Based on the above conceptual framework following hypotheses are developed. The Research Hypotheses of this study are derived with respect to the research objectives. First Hypotheses (H1) is derived based on the first objective which is to study the impact of green supply chain management practices on organizational performance.

Hypothesis 1: Green Supply Chain Management Practices have an impact on Organizational Performance

According to the above findings from literature, it is clear that there is less published literature on the influence of GSCM practices on organizational performance in the Sri Lankan context. However, there are a considerable number of research studies which point out that there is a positive relationship which exist between the GSCM practices and performance of the firms in the Asian context (e.g. India, China) (Laosirihongthong, Adebajo & Tan 2013; Zhu, Sarkis & Lai 2004).

Following research hypotheses (H2, H3, and H4) are derived based on second objective. Those hypotheses are aimed to study which performance dimension has the highest degree of impact from GSCM Practices. Also when referring to past literature there are various western research studies considered that the impact of Green supply chain management practices on organizational performance dimension separately.

Zhu & Sarkis argued that that economic performance remains the top priority for manufacturers and also Amit & Pratik (2012) argued that environmental performance remains the top priority. But in Sri Lankan Context less supportive literature was available on that. Therefore following hypotheses are focused to investigate on it.

Hypothesis 2: GSCM practices have an impact on the Environmental performance

Hypothesis 3: GSCM practices have an impact on the Operational performance

Hypothesis 4: GSCM practices have an impact on the financial performance

Operationalization

Operationalization refers to the process by which a Conceptual domain is translated to an analytical domain which is measurable and observable. The constructs, dimensions and related indicators were drawn from previous studies. The first step of the conceptual domain is to define the concept solely based on previous studies since there is few analytical tools which can be used to ensure content validity. As far as this study is concerned the constructs could be identified as GSCM practices and Organizational performance. The Operationalization process is to develop indicators which are measurable and observable behaviors of the dimensions

identified above. In order to operationalize the two constructs: GSCM practices and Organizational performance a survey in the form of a questionnaire was carried out.

The questionnaire consists of thirty one indicators to measure the adaptability of GSCM practices in manufacturing firms in Sri Lanka and twenty one items for measuring the Organizational performance. The indicators of GSCM practices were solely based on past literature (Zhu, Sakis& Lai 2012; Zhu &Sarkis 2004; Zhu, Sarkis&Geng 2004; Laosirihongthong, Adebanjo& Tan 2013). A total of nine items of green purchasing, four items of eco design and eight items of internal environmental management were used in developing the questionnaire. Further the dimensions of reverse logistics and investment recovery included five items each. In addition, twenty one items about the GSCM performance were presented in terms of environmental, operational and financial performance each dimension having six, six and nine items respectively.

The questions of the Questionnaire were measured against a five point likert scale ranging from 1=strongly disagree, 2 = somewhat disagree, 3 = neutral, 4 = somewhat agree and 5= strongly agree.

Participants and Procedure

As per the nature of the objectives, this study falls under the positivist paradigm. This is because, the researcher is working with observable social realities and the end result can be generalized to similar circumstances (Remenyi, D 2002). In this study, the population of this study is all manufacturing firms which operate GSCM practices in Sri Lanka.

According to statistics (Annual Survey of Industries 2013) there are 2554 manufacturing firms operating under the industry sector in Sri Lanka.

From this, simple random sampling technique was employed to draw the sample from the population. A representative sample of 150 of the population was selected for the purpose of this study which is covering a variety of sectors including automobile , garments , food and beverage , electronics , chemicals and other. The target respondents were top management (owner, general manager, Operations manager, supply chain manger) of the organization.

Both personal and online methods were used in administering the survey. Accordingly, 30 questionnaires were personally distributed by the researcher among the sample. More than 180 online questionnaires were sent to randomly selected respondents via e-mails. The response rate for the personal method was 80%, which is a good response rate, while the response rate for the online method was significantly lower, as only 161 responses out of 180 were received. Then, the questionnaires were screened and incomplete questionnaires rejected. Accordingly, 150 questionnaires were forwarded for the data analysis. The data was analyzed using Structural Equation Modeling (SEM) with the aid of AMOS (Analysis of Moment Structures) 23.0.

DATA ANALYSIS AND RESULTS

A pilot survey was conducted using 30 respondents to identify and eliminate potential problems in the questionnaire design (Malhotra & Peterson 2006) and to examine the validity and reliability of the measures used in the questionnaire (Sekaran & Bougie 2009). The Cronbach's alpha coefficient of the pilot survey was greater than 0.7 for all constructs which is an acceptable value for a pilot test (Hair, Black, Babin, & Anderson, 2010).

After the pilot survey, the data collected for this study were first entered in to the IBM Statistical Package for Social Science (SPSS) software version 23.0. The 150 cases were forwarded for removing outliers and missing value analysis. In this study, there were no missing values and outliers in the 150 questionnaires.

After missing value data analysis and outlier detection, the data was tested for multivariate assumptions such as normality, linearity, homoscedasticity and multicollinearity. Normality was tested by skewness and kurtosis. In this study, skewness values of less than 2 and kurtosis values less than 7 suggest that there are no serious violations of the normality assumption. To measure linearity and homoscedasticity normal probability plots (p-plots) and scatter plots were drawn respectively (Hair et al., 2010) and no deviations were identified.

Finally, multicollinearity was assessed using a correlation matrix and all inter-correlation values were less than 0.9. Summarizing the results of multivariate assumptions, all variables were assured of normality, linearity, homoscedasticity and multicollinearity. The Kaiser-Meyer-Olkin (KMO) was used to measure the adequacy of the sample of the study. KMO

results showed that the sample adequacy of all constructs is greater than 0.5 which indicates that the sample is adequate (Malhotra 2011).

The unidimensionality of all constructs was ensured using Exploratory Factor Analysis (EFA). Cronbach's alpha was used to measure the reliability of all constructs and its value is greater than 0.7, and thus, it can be concluded that the reliability is established for all constructs. Thereafter, data was forwarded for multivariate analysis.

The Measurement Model

The measurement model "specifies the indicators for each construct, and enables an assessment of construct validity" (Hair et al., 2010). Based on the conceptual model, there are 8 latent variables, namely, Green Purchasing (GP), Eco Design (ED), Internal Environment Management (IE), Reverse Logistics (RL), Investment Recovery (IR), Environmental Performance (EP), Operational Performance (OP), and Financial Performance (FP). As the initial measurement model portrayed a poor fit, the model was improving using modification indices. Stepwise deletion of items below 0.5 factors loading was applied to further refine the initial model.

During the modification process, following items were removed due to low standardized regression weights. Further, covariances were drawn between the error terms of several items for improvement purpose.

Green Purchasing (GP)

GPd- Suppliers ISO 14000 certification

GPf- Adapting just in time logistic system for supplier cooperation

GPg- Selecting suppliers using environmental criteria

GPi- Requesting suppliers to use environmental packaging

Internal Environment Management (IE)

IEd- Total Quality Management

Investment Recovery (IR)

IRE- Establishing a recycling system for used and defective products

Financial Performance (FP)

FPA- Decrease of cost for materials purchasing

FPc- Decrease of fee for waste treatment

FPd- Decrease of fee for waste discharge

FPh- Decrease in cost of raw materials or components

After removing those items the complete final refine model showed as following figure 2.

Result (Default model)

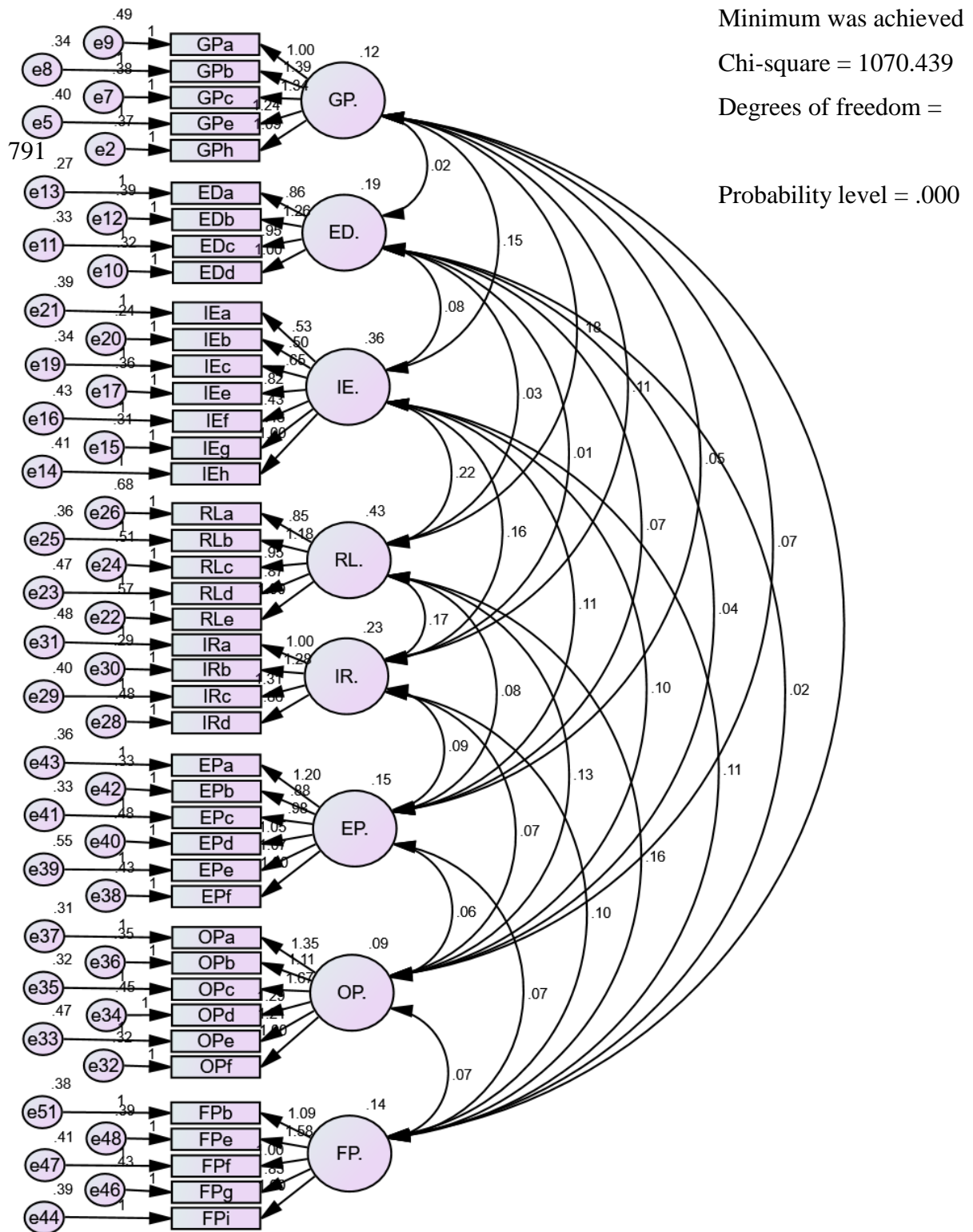


Figure 2: Refine Model

After the testing the refine model, it shows acceptable fit. According to Hair et al., (2010), CMIN/DF (X^2/df) value close to one and not exceeding 3, Comparative Fit Index (CFI) value close to 1 and Root Mean Square Error of Approximation (RMSEA) value of about 0.08 or less indicates a good model fit. As further recommended by Hair et al., (2010), the stated GOF (goodness of fit) indicates must include at least one absolute measure ($X^2/df/ p$ value/GFI/RMSR/RMSEA), one incremental measure (NFI/CFI/TLI/RNI). As shown in following tables, the CIMIN/DF of the measurement model is close to 1 and below 3, the RMSEA is 0.052, thus providing absolute model fit.

Table 1: CMIN value

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	112	1070.439	791	.000	1.353
Saturated model	903	.000	0		
Independence model	42	2423.168	861	.000	2.814

Table 2: GFI value

Model	RMR	GFI	AGFI	PGFI
Default model	.045	.918	.727	.667
Saturated model	.000	1.000		
Independence model	.129	.362	.331	.345

Table 3: CFI value

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.558	.519	.829	.805	.921
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 4: RMSEA value

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.041	.056	.608
Independence model	.110	.105	.116	.000

The Confirmatory Factor Analysis (CFA) was used to further test convergent and discriminant validity of the constructs. As explained by Malhotra& Dash (2011), 0.5 or higher factor loading and 0.5 or greater Average Variance Extracted (AVE) assures satisfactory convergent validity. In addition, Composite Reliability (CR) must be 0.7 or higher. Generally, discriminant validity can be ensured if the square root of the AVE is larger than the correlation coefficients (Malhotra, 2008).

Table 5: Convergent Discriminant Validity Results

	AVE	CR	GP	ED	IE	RL	IR	EP	OP	FP
GP	0.503	0.86	0.503104							
ED	0.628	0.97	0.008417	0.628116						
IE	0.653	0.93	0.263314	0.04538	0.652911					
RL	0.512	0.83	0.34962	0.004185	0.180738	0.512242				
IR	0.58	0.85	0.226903	0.005733	0.154646	0.148438	0.57977			
EP	0.53	0.89	0.075828	0.088195	0.111822	0.051611	0.124414	0.526294		
OP	0.53	0.89	0.243389	0.061253	0.160402	0.216879	0.107112	0.122766	0.534728	
FP	0.53	0.94	0.216295	0.009967	0.100864	0.232165	0.167263	0.110354	0.193935	0.529477

The Structural Model

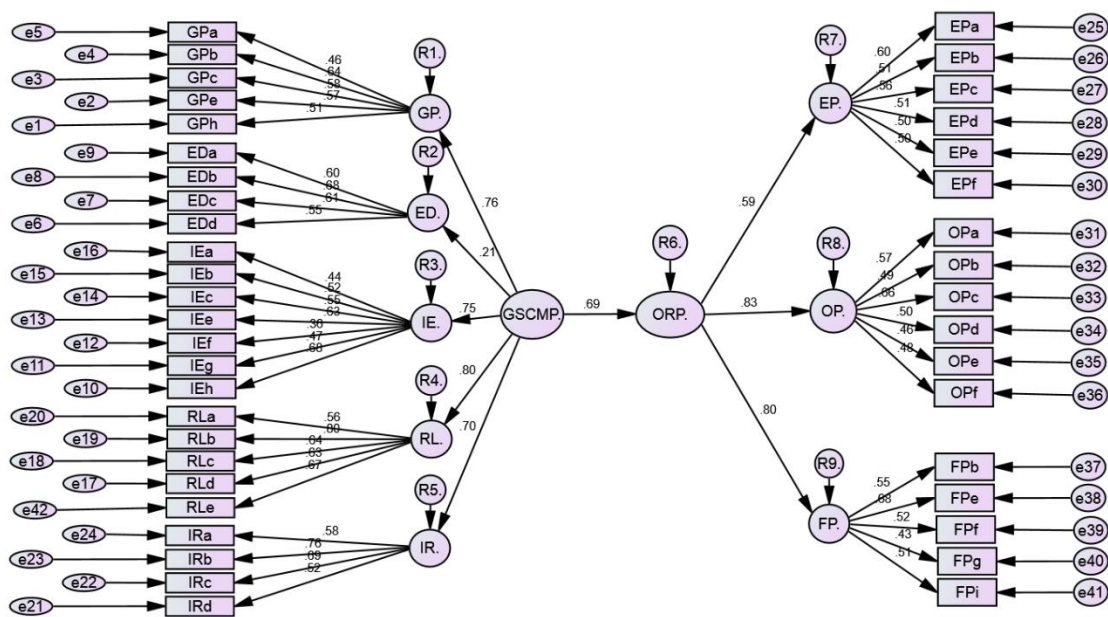
The structural model examines the direct relationships among the constructs. Structural model 1 was developed to test the impact of GSCM Practices on Organizational Performance in Sri Lankan manufacturing firms.

Minimum was achieved

Chi-square = 800.615

Degrees of freedom = 528

Probability level = .000



Source: Survey data
Figure 3: Structural Model 1

It shows that there is a significant impact of GSCM Practices on Organizational Performance. The results demonstrated positive and significant paths from GSCM Practices to Organizational Performance ($\beta = 0.69, p < 0.000$).

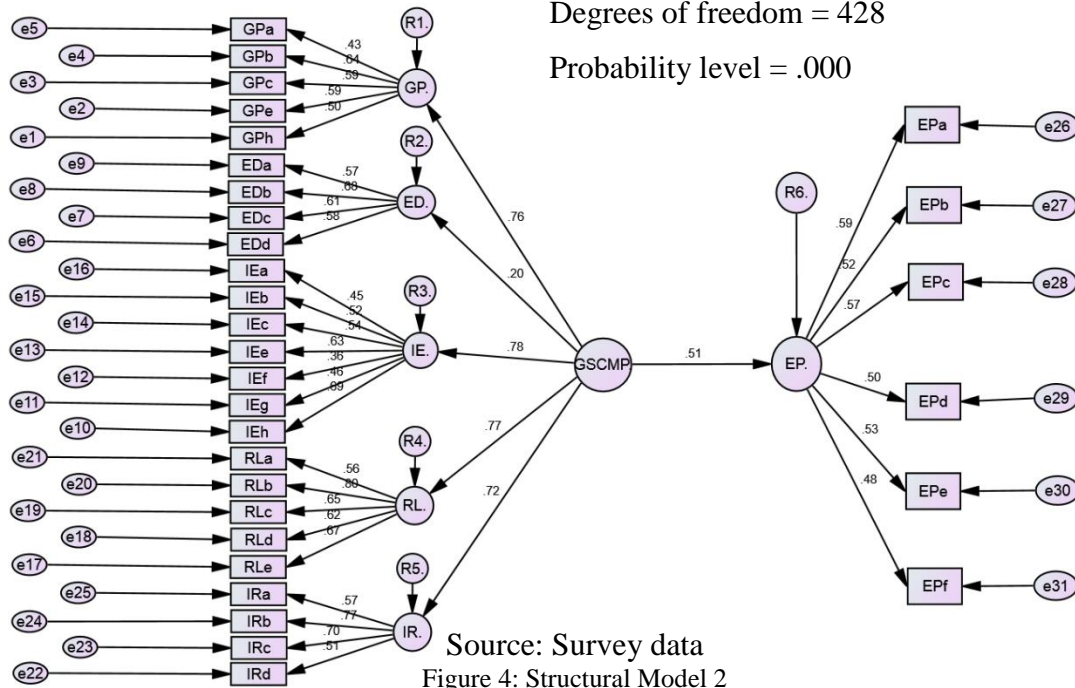
Structural Model 2, 3, 4 are built to identify which performance dimension has the highest degree of impact from the GSCM Practices in Sri Lankan context.

Minimum was achieved

Chi-square = 603.615

Degrees of freedom = 428

Probability level = .000



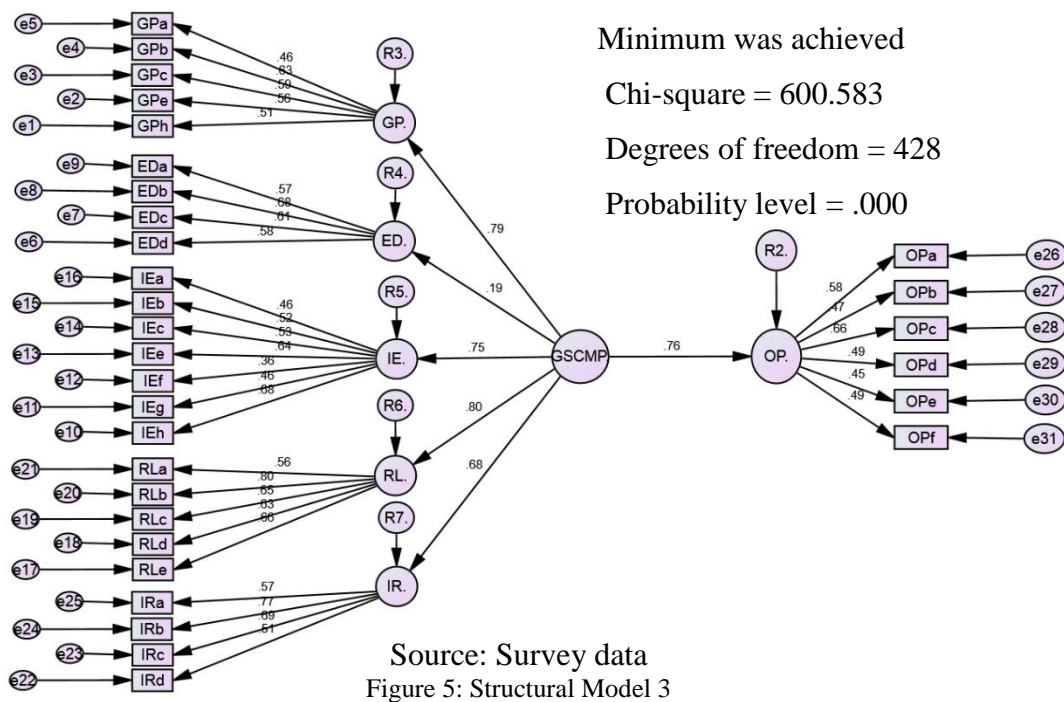
According to the above figure results will be positive and significant paths from GSCM Practices to Environmental Performance ($\beta = 0.51, p < 0.000$).

Minimum was achieved

Chi-square = 600.583

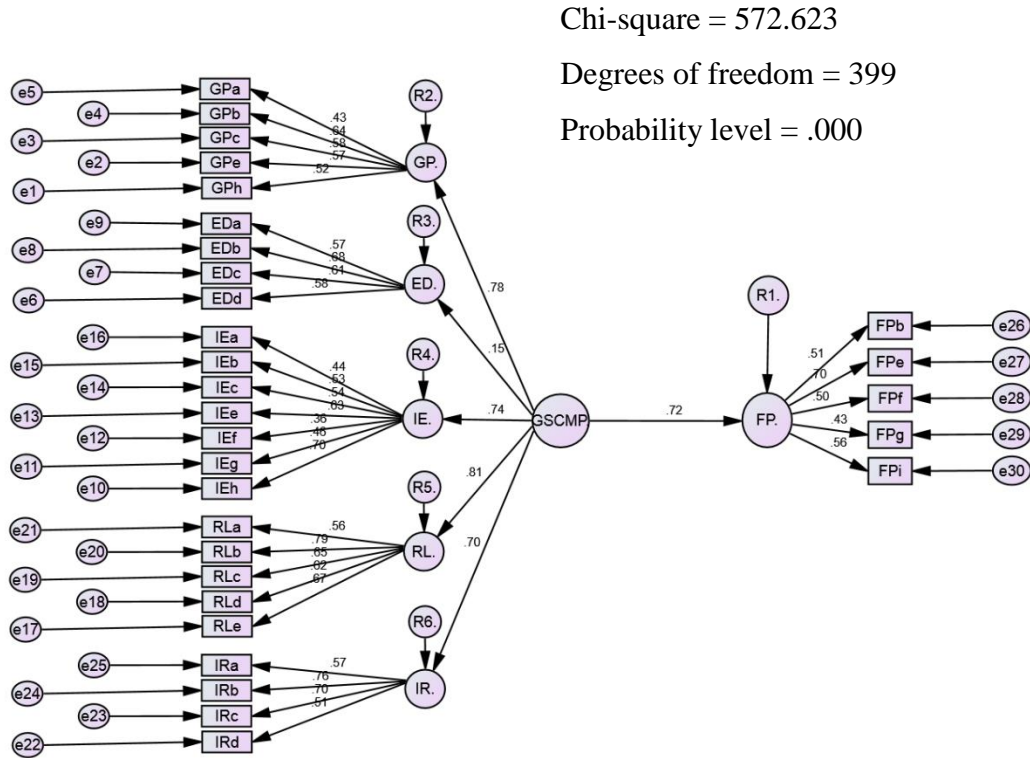
Degrees of freedom = 428

Probability level = .000



According to the above chart results will be positive and significant paths from GSCM Practices to Operational Performance ($\beta = 0.76, p < 0.000$)

Minimum was achieved



Source: Survey data
 Figure 6: Structural Model 4

According to the above chart results will be positive and significant paths from GSCM Practices to Financial Performance ($\beta = 0.72, p < 0.000$).

DISCUSSION

The above findings revealed that under structural model 1, there is a 69% significant positive impact of GSCM practices on Organizational performance in Sri Lankan Context regarding Manufacturing Sector. Based on those results we conclude that Sri Lankan Manufacturers are highly engaged with the Green Supply Chain Management Practices. Higher the adaptation of GSCM practices, higher will be the organizational performance in Sri Lankan Context. This claim is highly supported by previous research studies which have been conducted based on several industries, including Automobiles, Food and Beverages, Tea Processing and Pharmaceutical etc. The majority of the studies indicate that there is a positive relationship between the two constructs.

It had been argued that firms around the globe are becoming aware of the green concept and hence tries to focus on adapting green practices for the betterment of the firms, as the top management realizes the importance of adapting GSCM to cope with the future.

Muma et al. (2014) in one of their studies based on the tea processing industry had observed that GSCM practices have a positive influence on performance. In addition, as far as the food industry is concerned, Diab et al. (2015) had proven similar results. Further research suggests that collaboration with all parties of the supply chain is likely to influence positively on performance of firms (Seman et al. 2012). According to the Zhu & Sarkis (2004), Rao & Holt (2005), Green et al. (2005) suggest that There is also a positive relationship with GSCM Practices and the Organizational Performance.

Also past studies include that some Asian countries identified positive relationship with GSCM Practices and Organizational Performance (Laosirihongthong, Adebajo & Tan 2013; Zhu, Sarkis & Lai 2004). But despite the lack of research studies based on the green concept of Sri Lanka, the results of this analysis ensure its applicability in this country.

Structural Model 2, 3, 4 are built to identify which performance dimension has the highest degree of impact from the GSCM Practices in Sri Lankan Manufacturing Industry. But according to the Muma et al. (2014), found highest priority for Environmental Performance by his study and Diab et al. (2015), Seman et al. (2012) also gave priority for Environment Performance from the overall organizational performance dimensions.

Further Amit & Pratik (2012) discussed in his study that both Environmental Performance and Financial Performance having priority among overall organizational performance dimensions. As per Zhu & Sarkis (2007), disclose that financial performance having the more impact of GSCM Practices. That means financial performance remains top priority among manufacturing sector.

According to the current study, it can be finalized that Operational Performance dimension has the highest impact from GSCM Practices which related to the manufacturing sector in Sri Lanka. Most of respondents are realizing that higher the adaptation of GSCM practices, higher will be the operational performance in Sri Lankan Context. This suggests that impact of GSCM practices leads to increase the amount of goods delivered on time, decrease inventory levels and scrap rate, promote products quality, reducing and eliminating waste, increased product line and finally improved capacity utilization under the operational performance. Normally effectiveness, efficiency, quality, timeliness, productivity and safety are the main factors that considered under the operational performance. According to the results it confirms that using GSCM Practices, organizations can reduce and eliminate waste, resource recovery, cost savings & increased efficiency and product quality improvement rather than other performance dimensions. Based on final results, we can finalize that all the green practices considered in this study lead to increase operational performance rather than other performance dimensions related to the manufacturing industry in Sri Lanka. When considering the green purchasing, it facilitates firms to preserve the environment and to enhance the effectiveness and efficiency. Eco design also leads to minimal consumption of materials and energy is utilized. Also involves designing products to avoid or reduce the use of hazardous products, with that product quality improvement will take place. Repair of failure items, recycle and reuse of material, logistics in product returns, source reduction and waste disposal can be achieved through the reverse logistics. Those are the benefits that can be achieved through engaging GSCM Practices to enhance operational performance. Therefore most of respondents are realizing that higher the adaptation of GSCM practices, higher will be the operational performance in Sri Lankan Context.

MANAGERIAL IMPLICATIONS

This study will play an important role for managers and firms, also this study is contributing in increasing the sales through understanding the green supply chain management and got the highest benefits from it. Higher the adaptation of GSCM practices, higher will be the GSCM performance. As such it is important for managers to formulate and implement strong supply chain management strategies in order to cope with severe competition which is dynamic in nature.

Managers also need to understand the importance of the roles played by every member of the supply chain for ensuring performance. GSCM practices cannot be implemented only with the support of the internal parties of a firm.

Rather, there needs to be integration between different stakeholders including suppliers (first tier, second tier), distributors, customers etc. Therefore, it is important for managers to regularly monitor the performance of its suppliers and make improvements in every possible way for the betterment of the entire supply chain.

RECOMMENDATIONS

There are some recommendations, which are Continuing coordination between the different administrative levels to implement the green supply chain, in order to achieving the highest level of quality in this area, trying to find the most friendly environmental raw materials and continuing in Safety environmental design and packaging, create an annual training plan according to the workers training needs related to the green supply chain, increased the budget allocated for scientific research in the field of green supply chain, and finally activate the Governmental rules and regulations to be more careful about the safety of the environment.

LIMITATIONS

There are limitations to this study when interpreting the study results. The study focused on firms in the manufacturing sector in Sri Lanka. Because these findings are specific to the manufacturing sector. Therefore the findings may not be applicable to other sectors in Sri Lankan context.

The data collection was collected by Likert scale questionnaires which might have biases of the respondents reflected in the results. Therefore there is a possibility that if respondents were different, the results might be different. Moreover, data collection was another challenge because some firms were not ready to participate, due to the lack of time.

The impact of GSCM Practices in the long run, is not captured since this cross-sectional study has been done only for a short period of time.

FURTHER RESEARCH

Crucially, this study has some limitations that have the potential to lead to future research and the significance of the study can be further enhanced by the future implication of the study. This study limits its findings to the relationship between GSCM practices and environmental, operational and financial performance. Further research could be done to study the influence of GSCM practices on other dimensions of performance. Similarly different aspects of GSCM practices other than green purchasing, eco design, investment recovery, internal environment management and reverse logistics can be evaluated.

A longitudinal study with a much larger sample, focusing on the influence of other factors such as top management commitment, organizational learning and level of Training and Development on GSCM performance can be studied in depth. In addition, the influence of sustainable green supply chain management on performance can also be studied in depth, since firms are emphasizing more on the sustainable aspect of the firms, without being profit oriented. Moreover, this study has only considered the manufacturing sector of Sri Lanka. An exploratory study can also be done to examine the influence of GSCM practices on GSCM performance based on the services sector of Sri Lanka.

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Industry 4.0 and Lean based Operational Performance Improvement Approach: A Conceptual Framework for the Banking Sector

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Abstract

With the advancement of technology, Industry 4.0 concepts have been thrived up to a state where the applications can be utilized in a wide variety of industries with the focus of improving operational performance. In order to gain market share, as well as to sustain in the economic crisis, operational performance improvement is highly crucial to the banking sector. This study is concerned with the application of industry 4.0 technologies in a lean based environment within the banking sector of Sri Lanka. When considering banking processes, the main question that arises is, the inefficiencies occurred at different stages of conducting business. Hence, the **application of lean tools is a viable solution to address these inefficiencies. Banking processes can be streamlined in order to improve resource utilisation with the elimination of wasteful practices while shortening time and cost to serve, thereby improving the productivity.** With some degree of modifications, concepts and technologies comprised in industry 4.0, can be applied to service sectors such as banking. Combining these advanced technologies with lean principles, may result a better operational performance than application of these concepts distinctly. Therefore, integration of industry 4.0 technologies within a lean based environment can be proposed as a viable solution to improve operational performance of the banking sector. This scrutiny presents findings of a comprehensive and systematic review of literature based on the areas of operational performance improvement, industry 4.0, lean management and banking sector. The article will offer an insight to current state of knowledge available in the corresponding areas and will suggest the path for future research.

Keywords: Industry 4.0, Lean Management, Operational Performance Improvement, Banking Sector

INTRODUCTION

In order to succeed in the new business environment while ensuring sustainable profitability, banks are focusing on adapting new management strategies that provide more efficient and cost effective services without reducing quality from the customer perspective (Santos and Cabrita, 2016). Banks deliver their value to customers and stakeholders through operational processes. Therefore, enhancement of operational performance is significant for banks to achieve operational excellence. When considering banking operations, several loop holes can be identified such as physical dispersion of information, rework, process loopbacks, excessive verification points, duplication of information and etc. Lean can be considered as a significant approach in addressing these challenges. Streamlined banking processes can improve operational efficiency by reducing costs and wastes.

The basic idea behind lean management is the elimination of waste from a process to maximise amount of gain while utilizing least amount of capital or other investments through continuous improvement (Nordin et al., 2016). Manufacturers have applied lean concepts to their manufacturing processes to reduce operational complexity and to improve performance, they can be treated as a basis for operational excellence by standardizing processes while eliminating non value adding activities. However, these concepts were suggested as possible applications for service industries as well.

For the last few decades, technological advancements have been thrived up to a state where the applications can be utilized in a wide variety of industries to achieve operational excellence. Technology evolves from first industrial revolution as steam power, water power and mechanization to mass production, assembly line and electricity. Then it evolves as third industrial revolution, the introduction of computerization and automation, though the fourth is the move towards digitization (Deloitte, 2015). Industry 4.0 is the concept of automation and data exchange in the manufacturing technologies, which enables the use of Internet of Things (IoT), Cyber-Physical Systems (CPS), big data analytics, cloud computing and cognitive computing to move towards a smart world (Hercko and Hnat, 2015).

A successful integration of industry 4.0 technologies in to the business processes are vital to gain competitive advantage in any business. Even though to integrate these technologies to business processes it is significant that the processes are streamlined in advance to reduce additional resource consumption and reduce costs. Industry 4.0 can be applied to service sectors

such as banking with a certain degree of modifications in its concepts and technologies. With the risen expectations of the customers, banking sector is focusing on adapting new technological solutions to automate processes in order to offer a better service. Hence to get optimal output from the investment of industry 4.0 technologies it is important that processes are streamlined with lean tools with the aim of improving operational performance. Therefore, the objective of this study is to comprehensively and systematically analyze the literature published in the context of industry 4.0, lean management and operational performance of banking sector to identify theoretical research gaps in the above context.

The remainder of this paper is organized as follows: the methodology applied for this study, an overview of research approaches used in the examined articles, the results of the systematic literature review, closure of the paper by offering conclusions and an attempt to provide some perspectives on future research.

METHODOLOGY

Content analysis is the approach employed to capture the state of knowledge in the classified areas that explicit sequence of steps methodically and organize the elements of texts. Thus it enables an investigator to meaningfully interpret and make inferences about the patterns in the content of the overall study (Bowen and Bowen, 2008). The initial step of this study is to collect the articles related to the areas of Industry 4.0, Lean Management and Operational Performance of the Banking sector. The accumulated articles were screened according to title and abstract and further referred which resulted in 26 articles. The full text of each paper was reviewed with the aim of eliminating the articles which are not within the scope of the study. Incongruities were discussed by researchers and 24 articles were considered for the review by removing duplications. Hence, in total of 24 articles were included in this study. The selection process of the study is shown in the Figure 1. The list of references listed at the end of this paper comprises all studied articles. It is believed that the selected and screened articles for this study involves a reasonable representative of the broad body of research work accomplished in this area. A comprehensive literature review was conducted with the purpose of acknowledging the effect of industry 4.0 and lean management on the operational performance of the banking sector thus revealing the research gap in the corresponding area. The contemporary articles which have been published within the years of 1990 and 2018 were chosen for the review. The contents of the articles were classified based on the factors that have been studied by the researchers and suggested models / frameworks also analysed.

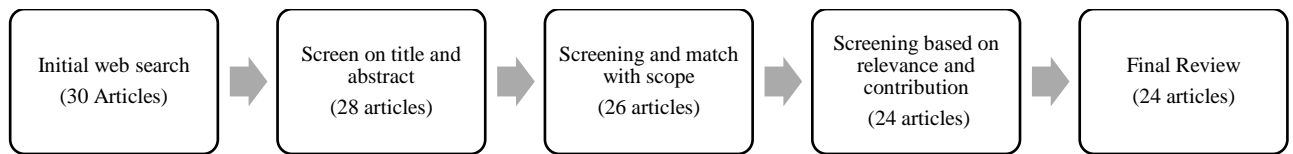


Figure 7: Literature screening process

MAIN RESULTS OF THE REVIEWED STUDIES

This section provides an insight into the current state of knowledge. (Refer Table 1 for the summary of the reviewed studies)

The phenomenon of industry 4.0 was first introduced in 2011 in Germany thus it is based on the concepts and technologies namely: cyber-physical systems, Internet of Things, and Internet of services, Industrial Internet of Things, Big Data analytics and etc. These concepts enhance perpetual communication via internet which allows a continuous interaction and exchange of information not only between humans, human and machine and the machines themselves (Roblek et al., 2016). Hercko and Hnat (2015), argues the concept of industry 4.0 creates a new orientation for the production companies. The successful implementation of this strategy depends on the use of the principles of the concept. Industry 4.0 is based on six basic principles: Interoperability (CPS and people connected via IoT and IoS), Virtualization (creates a copy of the physical world in a virtual environment), Decentralization (decentralized control systems), Capacities in real time (collect data in real time), Service orientation (CPS and people are available through IoS), Modularity and re-configurability (modular systems adapt to changing requirements).

As Schumacher et al. (2016) argued, manufacturing companies focussed on adapting industry 4.0 to increase their operational performance while being competitive. Thus it is important for them to measure their industry 4.0 maturity to identify and improve competing factors. Schumacher et al. (2016), proposed a model to assess industry 4.0 maturity of an enterprise in the domain of discrete manufacturing based on nine dimensions. Even though the concept of industry 4.0 firstly limited to manufacturing sector thus it started to evolve in service sectors as well. As modern customer expectations have risen with the technology improvements, they value relationship centric experience that hinges on trust and personalization while receiving unlimited accessibility, convenience and speed of service. So it is significant for the service sector to integrate these technologies to offer a better customer satisfaction.

The main question arise in this context is that, the investment of industry 4.0 applications to the service sector actually returns optimal output if the processes are not properly streamlined. There are several process inefficiencies can be identified in banking sector such as physical dispersion of information, rework, process loopbacks, excessive verification points, duplicate of information and etc. (Santos and Cabrita, 2016). Thus lean tools are a significant solution to identify process loopholes and to streamline processes while reducing wastages. Santos and Cabrita (2016) mentioned, lean is a beholding paradigm which creates more value for customers using less resources. Thus lean aims to minimize waste, along value streams to provide products with greater quality and variety at lower costs and shorter lead times by incorporating a collection of principles, concepts and tools into business processes.

Karlsson and Ahlstrom (1996) proposed nine determinants in lean management such as elimination of waste, continuous improvement, zero defects, just in time, pull instead of push, multifunctional teams, decentralized responsibilities, integrated functions and vertical information systems. According to the authors the nine determinants can be used to streamline processes.

Shah and Ward (2007) developed a conceptual framework to assess lean based performance of an organisation which consists of ten dimensions. As Tortorella et al. (2016) said, there are three bundles of lean management practices that used to measure the level of lean implementation such as JIT, TQM, and TPM. According to Putri et al. (2018), Lean Six Sigma is a methodology that focuses on quality management and business process improvement by managing customer requirements.

Nordin et al. (2016) developed a framework to measure lean based performance of a manufacturing plant. The model assesses behaviour of five lean aspects against the waste elimination. According to Leite and Vieira (2013), lean manufacturing philosophy is based on the principles that guide the “lean thinking”, namely: value specification, value stream mapping, flow optimization, pull production system and perfection or continuous improvement.

Therefore, according to the literature, lean tools is significant in streamlining business processes. Thus streamlined business processes can be automated using advanced technologies to improve performance. Hence some studies focus on integrating industry 4.0 technologies to lean optimised business processes. Kolberg and Zuhlke (2015), mentioned industry 4.0 is a

networking approach where components and machines are becoming smart and a part of a standardized network based on the well proven internet standards. The integration of Just in time or Kanban systems with industry 4.0 is called as lean automation. Tortorella and Fettermann (2018) conducted a study to examine the relationship between lean production practices and the implementation of industry 4.0 in Brazilian manufacturing companies. The results indicate, lean practices are positively associated with industry 4.0 technologies and their concurrent implementation leads to large performance improvements in any organisation. As Ward and Zhou (2006) mentioned, firms who have integrate information technology in lean/just-in-time manufacturing practices have been succeeded in improving their operational performance as exemplified in North America.

Lean IT is a new approach for optimizing IT-enabled business processes with the focus on quality improvement, waste elimination, reduce lead time and cost. According to Jeong and Yoon (2016), IT firms can apply value stream mapping to standardize its processes as a Lean-IT approach. Jackson et al. (2011) investigates the requirements and possible solutions in lean to increase the efficient use of automation in the Swedish manufacturing industry as a lean-automation approach.

Buer et al. (2018) carried a study which reveals four aspects of research streams, such as industry 4.0 supports lean manufacturing, lean manufacturing supports industry 4.0, performance implications of an industry 4.0 and lean integration, and effect of environmental factors on industry 4.0 and lean manufacturing integration. According to Rauch et al. (2016), Lean Product Development and an industry 4.0 oriented Smart Product Development are not contrarily, but go hand in hand. Thus both shares the advantages.

Although the studies published in the area of integrating industry 4.0 into lean based environment were mainly focussed on the manufacturing process automation thus limited studies focussed on integrating this concept to service sectors such as banking. There were several studies published revealing knowledge areas of industry 4.0 applicability in the banking sector. KPMG Banking Systems Survey (2018), Ratings direct (2018), Deloitte (2015), Hyman (Fintech Focus) are studies which discloses the applicability of new advance technologies comes under industry 4.0 to banking systems.

Hyman (Fintech Focus), discusses about digital banking experience that modern customer demanded today. Innovation leads to easier customer satisfaction through fully digital reimagining and digitizing banking operations and processes, and improvement in core

infrastructure. The concepts of personalization, frictionless, accessible and consistent across devices, connected to customer life events, and enabling intelligent data-driven decision making are achieved through digitalisation.

KPMG Banking Systems Survey (2018), talks about the concept of open banking which is known as *Payment Service Directive II*. It facilitates bank to share customer transaction and account data with third parties, including, retailers, telco providers, payments services and financial account aggregators. PSD2 is a trigger to open up the current banking landscape to new players in financial arena. Ratings direct (2018) reveals of the usage of new concepts like *cryptocurrency* in Banking. Cryptocurrencies are digital currencies that use encryption techniques to regulate the generation of units of currency and verify the transfer of funds.

Biometric technology improves the user experience of banking customers, by providing a simple process to verify existing customers or to enhance KYC (Know Your Customer) onboarding methods. Customers can create their own set of biometric credentials and then use a combination of these biometrics to log in, verify their accounts and authenticate transactions (Cook, 2017).

Mobile wallet is another new concept of industry 4.0, which enables electronic payment transfer from customer-to-customer, linking the citizens' identity (ID) and mobile phone numbers to bank accounts. This provides a convenient mode for the customers to transfer and receive funds through the use of citizen ID numbers and mobile phone numbers instead of bank account numbers (Wonglimpiyarat, 2017).

Hence published studies distinctly reveals the relationship between lean banking and industry 4.0 banking, thus it is important to investigate the linkage within the areas of industry 4.0 and lean for the banking sector for better operational performance improvement. Based on the results of the study lean automation in the banking sector can be identified as a viable solution to improve its performance.

Even though to improve industry 4.0 performance some studies suggest that training and knowledge is a considerable factor. According to Wilkesmann and Wilkesmann (2017), designers of Industry 4.0 have to take responsibility for underlying results of digitalized work. Hence, to achieve successful transformation to digitisation, professional, vocational and academic training will be a key factor. Training and performance measures required to take up

the theoretical aspects of industry 4.0 thus to link with practical aspects of complex technologies.

Table 45: Findings of the reviewed studies

Reference	Design Method/s	Key findings
(Roblek et al., 2016)	Literature review	Analysis about the concepts of industry 4.0 such as cyber-physical systems, the Internet of things (IoT), and the Internet of services, Industrial Internet of Things (IIoT), Big Data analytics. The importance and influence of internet connected technologies for the creation of value added for organizations and society was highlighted.
(Wilkesmann and Wilkesmann, 2017)	Conceptual framework	Emphasizes on the factors affecting to the success of digital transformation of an organisation such as the designer's responsibility for underlying results of digitalized work into account and must jointly find socially acceptable solutions. To achieve successful transformation to digitisation, professional, vocational and academic training will be a key factor.
(Hercko and Hnat, 2015)	Literature review	Analysis of the basic principles of Industry 4.0; Interoperability, Virtualization, Decentralization, Service orientation, Modularity and re-configurability.
(Schumacher et al., 2016)	Model	Proposed a model to assess industry 4.0 maturity of an industrial enterprise in the domain of discrete manufacturing based on nine dimensions. The dimensions such as products, customers, operations and technology have been created to assess the basic

		enablers. Additionally, the dimensions like strategy, leadership, governance, culture and people allow for including organizational aspects into the assessment.
(Deloitte, 2015)	Analysis	Introduction to industry 4.0, history, knowledge areas and new innovations in financial sector.
(KPMG Banking Systems Survey, 2018)	Report	Introduction to the concept of Payment Services Directive II (PSD2) where banks will now share customer transaction and account data with third parties, including, retailers, telco providers, payments services and financial account aggregators.
(Ratings direct, 2018)	Report	Introduction to cryptocurrencies. Cryptocurrencies are digital currencies that use encryption techniques to regulate the generation of units of currency and verify the transfer of funds. Cryptocurrencies are independent from central banks, and the risk of them penetrating the traditional financial systems
(Hyman, Fintech Focus)	Report	Digital banking experience enhanced by Artificial Intelligence (AI). Digital banking offers application of behavioural economics, predictive analytics, artificial intelligence (AI) and machine learning to anticipate customer needs and get smarter over time about what to offer them rather than being an elegant, consistent interface to customer accounts.
(Cook, 2017)	Report	Biometric technology helps to improve the user experience of banking customers, by providing a simple process to verify existing customers or to enhance KYC (Know Your Customer) on-boarding methods. Customers can create their own set of biometric

		credentials and then use a combination of these biometrics to log in, verify their accounts and authenticate transactions.
(Wonglimpiyarat, 2017)	Case study	Evaluation of new technologies developed by FinTech. Explained the concept of mobile wallet which enables electronic payment transfer for customer-to-customer (C2C), linking the citizens' identity (ID) and mobile phone numbers to the customers' bank accounts. This provides a convenient mode for the customers to transfer and receive funds through the use of citizen ID numbers and mobile phone numbers instead of bank account numbers.
(Karlsson and Ahlstrom, 1996)	Model	A model which contains nine measurable determinants for lean assessment. The proposed nine determinants are elimination of waste, continuous improvement, zero defects, just in time, pull instead of push, multifunctional teams, decentralized responsibilities, integrated functions and vertical information systems.
(Santos and Cabrita, 2016)	Case study	Application of lean principles to banking services and its critical success factors. Introduce five lean principles that can be applied to banking sector such as specifying value from customers' perspective, understanding the value stream, improving the flow, producing based on customers' pull and striving for perfection.
(Shah and Ward, 2007)	Conceptual framework	Measure relationships between lean production and firm performance through a framework that recognises most noticeable ten dimensions in lean implementation such as flow, total preventive maintenance, employee involvement, customer involvement,

		setup time reduction, statistical process control, pull production systems, JIT delivery by suppliers, suppliers feedback, and supplier development.
(Tortorella et al., 2016)	Empirical analysis	Introduce three bundles of LM practices that used to measure the level of LM implementation such as JIT, TQM, and TPM. JIT practices are related to the improvement of material and information flow efficiency, TPM includes practices that are focused on creating basic stability for the production processes, TQM stand for practices that aim to improve and mitigate quality issues by consistently problem-solving activities.
(Putri et al., 2018)	Empirical analysis	Application of lean six sigma into front line processes of a bank. Provide analysis of the two six sigma concepts DMAIC (Define, Measure, Analyse, Improve, Control) and DMADV (Define, Measure, Analyse, Design, Verify). DMAIC is used to improve current business process, whereas DMADV is used to design the process of new product to deliver zero defects performance.
(Nordin et al. 2016)	Framework	Assessment of lean manufacturing (LM) practices in a production plant. Investigation of the concepts of process improvement models such as Just in Time (JIT), Total Productive Maintenance (TPM), Total Quality Management (TQM), Lean Six Sigma (LSS)
(Leite and Vieira, 2013)	Literature review	Lean principles and its applicability in service sector. Emphasize on five main principles of lean manufacturing, namely: value specification, value stream mapping, flow optimization, pull production system and perfection or continuous improvement.

(Kolberg and Zuhlke, 2015)	Literature review	Analysis of lean automation practices in manufacturing sector. Lean Automation refers to the combination of automation technology with Lean Production. With the term Low Cost Intelligent Automation, the applications for automation should be developed with easy to realize instruments. Standardized, cost-efficient solutions should be favoured over individualized solutions.
(Tortorella and Fettermann, 2018)	Empirical analysis	Assess the relationship between lean production and implementation of industry 4.0 in Brazilian manufacturing companies.
(Ward and Zhou, 2006)	Empirical analysis	Integration of lean / JIT practices with IT tools to improve lead time performance in the manufacturing companies. The concept was tested using North American manufacturing companies.
(Jeong and Yoon, 2016)	Case study	Application of value stream mapping to an IT firm as a Lean-IT approach resulted performance improvement. Value Stream mapping (VSM) is a significant Lean tool to identifying waste and improvement areas and it is a standardized way of documenting the process steps and flow of work items, and then applying a systematic way to analyse these processes to develop an improvement plan.
(Jackson et al., 2011)	Case study	Analyse requirements and possible solutions for efficient use of automation in the Swedish manufacturing industry. Investigate about the requirements on automation

		solutions within small and medium-sized manufacturing companies and possible solutions for increased flexibility and re-configurability of robotic systems.
(Buer et al., 2018)	Literature review	Analyse the link between industry 4.0 and lean manufacturing. Results of the study indicate positive relationship between the two areas and operational performance of a manufacturing firm.
(Rauch et al., 2016)	Analysis	Smart Product Development provides better results in cost and quality when it integrates with Lean Product Development. Lean Product Development is mainly focussing on reducing wastes in the product development process and to concentrate on value adding activities.

DISCUSSION

The categorization of factors studied in the selected articles are discussed in the following sections of impact of industry 4.0 on banking, impact of lean on banking, integration of industry 4.0 and lean and other factors.

Impact of industry 4.0 on Banking

Under this category, studies focused on the impact of industry 4.0 on Banking sector. These impacts can be a competitive advantage for the banks while sometimes having implications in the practical context such as requirement of a higher investment, resources and need for process changes.

The fourth industrial revolution, creates new stage in organizing and managing the entire value chain more efficiently. Thus it addresses highly personalized customer requirements while satisfying customers via associated services. The availability of the real time information establishes a basement for value creation, by networking of all related entities in to a single platform with optimal value flow at any time. Association between people, objects, real-time and self-organizing systems affected by the facts of cost, availability and resource consumption (Wilkesmann and Wilkesmann, 2017).

Industry 4.0 consists of the concepts of cyber-physical systems, Internet of things (IoT), and the Internet of services. Perpetual communication via internet is important to allow continuous interaction and exchange of information between human, human and machine and machines themselves (Roblek et al. 2016). Industry 4.0 is mainly based on six basic principles such as Interoperability, Virtualization, Decentralization, Capacities in real time, Service orientation, Modularity and re-configurability (Herko and Hnat, 2015).

In today, digital banking considered to be a popular concept as customer expectations have risen with the technological advancements and they are more depend on technical devices. According to Hyman (Fintech Focus), innovation leads to easier customer satisfaction through digital reimagining and digitizing banking operations and processes, and improvement in core infrastructure. Thus it offers application of behavioural economics, predictive analytics, artificial intelligence (AI) and machine learning to anticipate customer needs and get smarter over time about what to offer them rather than being an elegant, consistent interface to customer accounts.

For the past decades, banks made heavy investments in technology and attempts to improve the efficiency of financial services. There are several new innovations in banking landscape like electronic fund transfer at the point-of-sale, ATM cash dispenser, internet banking, international electronic fund transfer, Electronic Data Interchange, mobile banking, Bitcoin wallet, Blockchain banking, crowd funding to improve customer satisfaction as well as to be competitive(Wonglimpiyarat, 2017).

As Cook (2017) said, biometric technology helps to improve the user experience of banking customers, by providing a simple process to verify existing customers or to enhance KYC (Know Your Customer) on-boarding methods. This will eliminate the use of passbooks, passwords in login or identification purposes in banking system. Customers can create their own set of biometric credentials to log in, verify their accounts and authenticate transactions.

KPMG Banking Systems Survey (2018) introduce Payment Services Directive II (PSD2) as a new concept of industry 4.0, which facilitates ‘Open Banking’ where, banks will share customer transaction and account data with third parties, including, retailers, telco providers, payments services and financial account aggregators. PSD2 will be a trigger to open up the current banking landscape to new players in financial arena, with moving towards new customer experiences, bringing possible disruption to banks.

According to the literature the concepts and technologies of industry 4.0 such as Payment Services Directive II, biometric identification, internet banking, international electronic fund transfer, Electronic Data Interchange, mobile banking, Bitcoin wallet, Blockchain banking, crowd funding, predictive analytics, artificial intelligence (AI) and machine learning, cryptocurrencies could be incorporated with banking processes to improve efficiency. Even though the investment to apply these concepts is really high, it is important to get optimal output for the investment. If the existing processes are not properly streamlined, application of these concepts distinctly may not result actual performance improvement. Hence these advance technical applications can be integrated to streamlined banking processes to reduce lead time, improve customer satisfaction and as a competitive advantage to survive.

Table 46: Impact of Industry 4.0 on Banking

Study	Competitive advantage for the user organization	Issues and difficulties in practical application	Relevance for Banking sector	Industry 4.0 application for Banking	Key findings
(Wilkesmann and Wilkesmann, 2017)	*		*	Intelligent adaptive assistance systems	Mobile integrated system to assist employee work.
(Herko and Hnat, 2015)	*	*	*	-	Industry 4.0 concepts such as CPS, IoT, IoS, Smart Factory
Hyman (Fintech Focus)	*	*	*	Use of artificial intelligence (AI)	Use of AI to analyse behavioural economics, predictive analytics and machine learning to anticipate customer needs
(Wonglimpiyarat, 2017)	*	*	*	EFTPOS, ATM , Internet banking, Interbank Telecommunication ,International electronic fund transfer, EDI, mobile banking, Bitcoin wallet, crowd funding	Facilitates banking operations and provide extensive customer satisfaction.
Cook (2017)	*	*	*	Biometric technology	Used to verify existing customers or to enhance Know Your Customer on-boarding methods

KPMG Banking Systems Survey (2018)	*	*	*	Payment Services Directive II	share customer information with third parties to personalising its service offerings
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Impact of Lean Management on Banking

Under this category, studies focused on the impact of lean management on the Banking sector.

Lean banking is significant approach in addressing operational performance. Lean applicability is important to minimise wastages in banking processes like delay/waiting, duplication and over processing, unnecessary movement, unclear communication, incorrect inventory, lost opportunity, and defects in service. Putri et al. (2018) conducted a study to implement lean Six Sigma in banking processes which delivers recommendations to minimize the seven wastes.

Santos and Cabrita (2016), mentioned five lean improvement areas of banking sector such as working method, technology, bureaucracy, innovation and quality. The study suggests ten critical success factors for holistic lean implementation in banking. Karlsson and Ahlstrom (1996) proposed nine determinants in lean management, such as elimination of waste, continuous improvement, zero defects, just in time, pull instead of push, multifunctional teams, decentralized responsibilities, integrated functions and vertical information systems which used as a tool to follow progress in an effort to introduce lean production.

According to Leite and Vieira (2013), there are five main principles of lean manufacturing, namely: value specification, value stream mapping, flow optimization, pull production system and perfection or continuous improvement. Thus lean does not have a single model of tools or practices and standards for services. Shah and Ward (2007) suggested a framework that recognises ten dimensions in lean implementation in an organisation such as flow, TPM, employee and customer involvement, setup time reduction, statistical process control, pull production systems, JIT delivery by suppliers, suppliers feedback and development.

According to Tortorella et al. (2016), there are three bundles of Lean practices such as JIT, TQM, and TPM. JIT is related to the improvement of material and information flow efficiency, TPM focuses on creating basic stability for the production processes, as zero defects, quality assurance, product and process quality planning and TQM aims to improve and mitigate quality issues by consistently problem-solving activities, such as maintenance systems, workplace organization and etc.

The selected studies focus on different lean management tools as possible solutions to streamline banking processes while reducing wastes along value stream to improve performance. Hence technology can be incorporate with these lean tools for better performance

improvement as lean automation approach. Thus lean automation can be applied to service sectors such as banking.

Table 47: Impact of Lean Management on Banking

Study	Applied Industry			Key Findings
	Banking	Other services	Production	
(Putri et al., 2018)	*			Lean banking is significant in addressing operational performance while improving quality at lower cost.
Santos and Cabrita (2016)	*			Mentioned five lean improvement areas of banking sector such as working method, technology, bureaucracy, innovation and quality.
Karlsson and Ahlstrom (1996)			*	Proposed nine determinants in lean management to assess changes towards lean implementation.
Leite and Vieira (2013)		*		Five main principles of lean manufacturing : value specification, value stream mapping, flow optimization, pull production system and continuous improvement.
Shah and Ward (2007)		*	*	Ten dimensions that affects lean implementation.
Tortorella et al. (2016)			*	Three bundles of Lean implementation practices such as JIT, TQM, TPM

Integration of Industry 4.0 and Lean

Literature suggest that integration of industry 4.0 and lean will result actual performance improvement than application of these concepts distinctly. In this section the study focus on integration of industry 4.0 and lean concepts.

Lean Automation refers to the combination of automation technology with Lean Production. However, according to the context of Industry 4.0, new solutions are available for combining automation technology with Lean Production. With the term Low Cost Intelligent Automation, the applications for automation should be developed with easy to realize instruments. Standardized, cost-efficient solutions should be favoured over individualized solutions (Kolberg and Zuhlke ,2015).

Lean IT is a new approach for optimizing IT-enabled business processes with the focus on quality improvement, waste elimination, reduce lead time and cost. Value Stream mapping is a useful lean tool to document the process steps and flow of work items, to analyse the processes and bottlenecksto develop an improvement plan. Even though the visualization of the process flow, increases the visibility of identifying waste and other limits on value chain (Jeong and Yoon, 2016).

Ward and Zou (2006) examines the relationships among inter-firm IT integration, intrafirm IT integration, lean/JIT practices, and lead-time performance using data from real world application through a case study. The results of the study show two main considerations such as implementing lean/JIT practices significantly reduces lead time and lean/JIT practices mediate the influence of IT integration on lead-time performance.

Tortorellaand Fettermann (2017) carried-out a study to implementindustry 4.0 and lean production in Brazilian manufacturing companies. Findings of the study indicate that lean production practices are positively associated with industry 4.0 technologies and their concurrent implementation leads to larger performance improvements in manufacturing sector. Although lean production is claimed as a socio-technical and low-tech continuous improvement approach, its benefits can be enhanced if digital technologies are properly incorporated. According to Jackson et al. (2011), European manufacturing industry is focussing on increasing the level of automation and use of industrial robotics. However, robot automation investments are expensive and too technically advanced, Jackson et al. investigates the requirements and possible solutions to overcome the challenges. Results from the study

indicated that automation through lean implementation will results cost and waste reduction in manufacturing sector.

Buer et al. (2018) presents an insight into the available knowledge on the areas of industry 4.0 and lean manufacturing. The results of the study indicate positive relationships between the two areas and operational performance of a manufacturing firm.

As the literature suggests there is a positive impact on operational performance of a manufacturing organisation when incorporating the concepts of lean automation to its business processes. Therefore, these concepts can be identified as a viable solution to service sectors as well. Even though lean can support to minimise wastages in banking processes like delay/waiting, duplication and over processing, unnecessary movement, unclear communication, incorrect inventory, lost opportunity, and defects in service, thus lean tools can be used to identify process inefficiencies in order to streamline the processes. Hence application of technical solutions to streamlined business processes give better operational performance improvement in banking sector.

Table 48: Integration of Industry 4.0 with Lean Management

Study	Applied industry			Key findings
	Banking	Other services	Production	
(Kolberg and Zuhlke ,2015)			*	Combination of automation technology with Lean Production
(Jeong and Yoon, 2016)		*		Lean IT approach for optimizing IT-enabled business processes with the focus on quality improvement, waste elimination, reduce lead time and cost
(Ward and Zou, 2006)			*	Integration of IT with JIT manufacturing practices
(Tortorellaand Fettermann, 2017)			*	Integration of industry 4.0 in lean manufacturing paradigms

(Jackson et al., 2011)			*	Integration of lean to automotive robotics technology.
(Buer et al., 2018)			*	There are positive relationships between the industry 4.0, lean management and operational performance of a manufacturing firm

Other Factors

According to the literature there are some other factors that influence on the implementation of lean and industry 4.0 in a firm.

Schumacher et al. (2016) consider external and internal factors that affect the assessment of industry 4.0 maturity such as Leadership, customers, culture, people, governance and etc. Deloitte (2015), mentioned there are challenges in implementing industry 4.0 in an organisation such as data security, integrating customers, IT infrastructure requirements and expertise knowledge. As to the changing expectations of the customers with the risen technological developments, the existing technology should be up to date with latest versions. Wilkesmann and Wilkesmann (2017), Roblek et al. (2016) mentioned the requirement of expertise knowledge and empowerment of employees to take independent decisions in implementing industry 4.0. As Cook (2017) mentioned, there is a risk of security in associating with open banking concept. Cook suggested the use of biometric technologies to overcome such challenges.

Karlsson and Ahlstrom (1996) identifies the importance of multifunctional teams when implementing lean management in a manufacturing firm. Leite and Vieira (2013), Putriet al. (2018) identifies the human factor is more important in lean implementation to provide better customer service.

Even though as literature suggests the factors like leadership of the organisation, customers, culture, people, governance, data security, IT infrastructure requirements, expertise knowledge, empowerment of employees, resources are critical when implementing industry 4.0 and lean in an organisation. Hence these factors should be considered in transforming to lean automation, unless it could result process inefficiencies.

Table 49: Other factors affecting lean and industry 4.0 implementation

Study	Focussed Factors
(Schumacher et al., 2016)	Leadership, customers, culture, people, governance
(Deloitte, 2015)	Data security, integrating customers, IT infrastructure requirements, expertise knowledge
(Wilkesmann and Wilkesmann, 2017), (Roblek et al., 2016)	expertise knowledge, empowerment of employees
(Cook, 2017)	Security concerns
(Karlsson and Ahlstrom, 1996), (Leite and Vieira, 2013) and (Putri et al., 2018)	Human factors

MODELS/Frameworks

Models and frameworks presented in the selected articles are discussed under this section (Refer to the Table 6). The developed conceptual framework is further discussed in this section of the study.

Wilkesmann and Wilkesmann (2017) suggested a framework which describes an organizing continuum for analysing digitalized work in the context of industry 4.0 from reproducing and improving routines (exploitation) against enabling inventions and innovations (exploration).

Schumacher et al. (2016) developed a maturity model to assess industry 4.0 maturity in manufacturing enterprises. The model assesses industry 4.0 maturity, based on nine dimensions, such as products, customers, operations, technology, strategy, leadership, governance, culture and people.

Karlsson and Ahlstrom (1996) proposed a new operationalise model to assess lean based performance of an organisation. The model consists of nine determinants in lean management such as elimination of waste, continuous improvement, zero defects, just in time, pull instead of push, multifunctional teams, decentralized responsibilities, integrated functions and vertical information systems.

Shah and Ward (2007) suggested a framework that recognises ten dimensions in lean implementation such as flow, total preventive maintenance, employee and customer involvement, setup time reduction, statistical process control, pull production systems, JIT delivery by suppliers, suppliers feedback and development. The framework is used to assess lean based performance improvement of an organisation. Nordin et al. (2016) developed a framework to measure waste elimination factor of a manufacturing plant against five criteria such as process and equipment enhancement, production rules and discipline, workforce engagement, suppliers' integration, customer focus.

Wonglimpiyarat (2017) developed a systemic innovation model that provides a better understanding on the systemic characteristics, progress and pattern of technology development and diffusion. This research study provides useful applications of technologies to support banking industry, developed by FinTech. Table 6 gives an overview of the models and frameworks found in the literature.

Table 50: Models / Frameworks

Reference	Model/Framework	Applied Field of Study			Advantages/ Uses
		Industry 4.0	Lean	Banking	
(Wilkesmann and Wilkesmann, 2017)	Framework to analyse digitalized work in a firm	*			Analyse connection between reproducing and improving routines and enabling inventions and innovations of industry 4.0.
(Schumacher et al., 2016)	Model to assess the industry 4.0 maturity of enterprises	*			Assessing industry 4.0 maturity of an organisation based on nine dimensions.
(Karlsson and Ahlstrom, 1996)	Model to assess lean based performance of an organisation.		*		Assessing lean performance of a manufacturing firm using nine determinants.
(Shah and Ward, 2007)	Framework to measure relationships between lean production and firm performance		*		Assessing lean based performance of an organisation under ten dimensions.
(Nordin et al., 2016)	Conceptual framework to assess lean performance.		*		Measure waste elimination against five lean aspects of a manufacturing plant.
(Wonglimpiyarat, 2017)	Model to assess the success of industry 4.0 innovation and market diffusion.	*		*	Provides an understanding on systemic characteristics and progress pattern of technology development and diffusion

According to the literature, a positive relationship can be identified in between operational performance and implementation of advance technologies in a lean based environment of an

organisation. Thus authors developed following framework to summarised the key findings of the study.

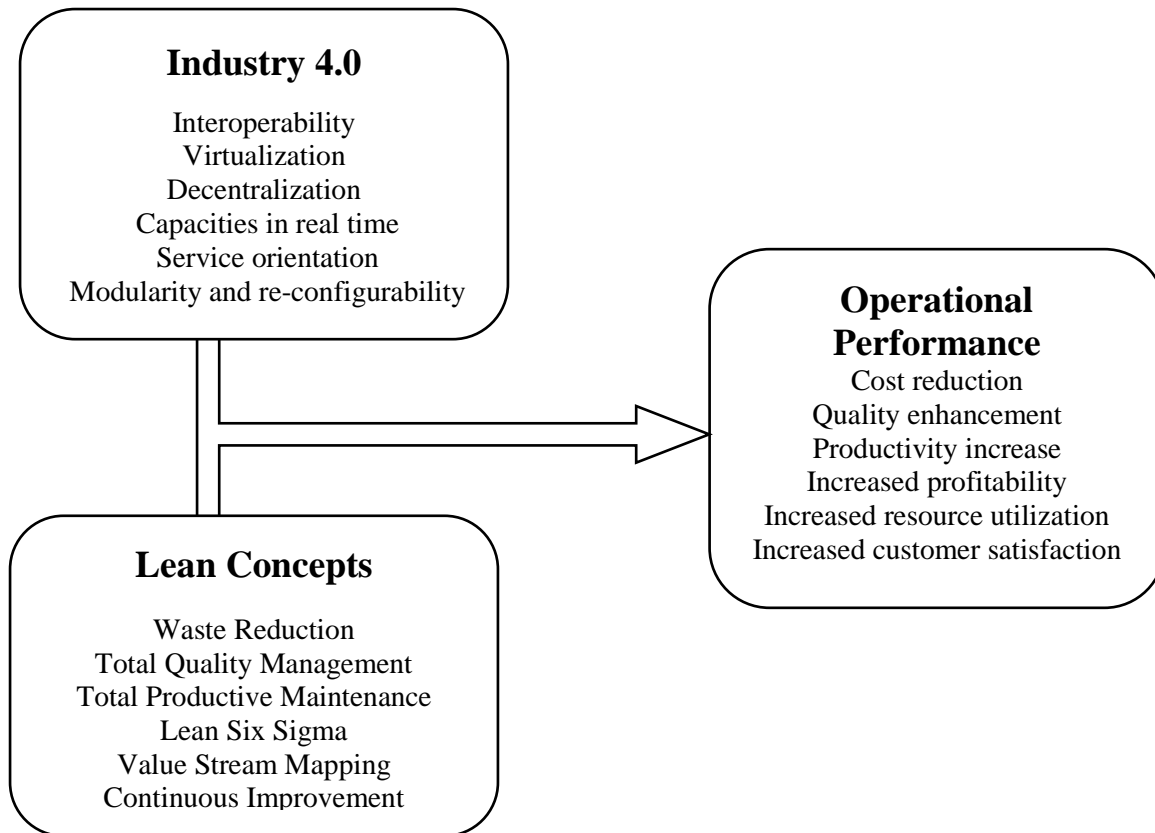


Figure 16: Conceptual Framework

Figure 2 presents the developed framework by integrating lean concepts with industry 4.0 principles in order to improve operational performance of an organisation in the aspects of cost reduction, quality enhancement, productivity increase, increased profitability, increased resource utilization and increased customer satisfaction. Industry 4.0 consists of six main principles such as Interoperability, Virtualization, Decentralization, Capacities in real time, Service orientation, Modularity and re-configurability. These principles were resulted through application of industry 4.0 technologies. There are several approaches to implement lean in an organisation thus a combination of these lean approaches with industry 4.0 technologies will result actual performance improvement in any organisation.

CONCLUSION

Lean is a beholding paradigm which has a potential to create more value for customers using less resources. Thus lean aims to minimize waste, along value streams to provide products/services with greater quality and variety at lower costs and shorter lead times while improving performance. According to literature there are several studies that assess lean based performance of organisations (Karlsson and Ahlstrom (1996), Shah and Ward (2007), Nordinet al. (2016)). Literature suggest several approaches to implement lean in an organisation such as Total Quality Management, Total Productive Maintenance, Lean Six Sigma, Value Stream Mapping, Continuous Improvement, JIT, wastes elimination and etc. (Santos and Cabrita (2016), Karlsson and Ahlstrom (1996), Shah and Ward (2007), Tortorella et al. (2016)).

For the past few decades, vast transformations of the technology has created massive changes in the way of industries performing their operations. Industry 4.0 is a concept which enables the use of advance technologies namely: Internet of Things, Cyber-Physical Systems, big data analytics, cloud computing and cognitive computing to move towards a smart world. These concepts were previously limited to manufacturing sector, but now it evolves to service sector as well. According to the literature, industry 4.0 technologies have created massive development in financial sector as well. There are new concepts emerging in the financial sector such as Open Banking, Mobile Wallet, Cryptocurrencies, Biometric Technologies, Artificial Intelligence an etc. (Deloitte (2015), Cook (2017) KPMG Banking Systems Survey (2018), Ratings direct (2018), Hyman (Fintech Focus)).

Even though implementation of these concepts of industry 4.0, doesn't result actual performance improvement due to reasons like process inefficiencies, improper resource utilisation, lack of organisational change, wasteful processes, lack of knowledge and expertise and etc. Hence, lean management is a viable solution to address these inefficiencies. According to the literature it is evident that firms who have implemented industry 4.0 concepts within a lean based environment has been succeeded. Lean tools can be used to eliminate all kinds of waste in the processes by identifying unnecessary activities, streamlining the process, and creating standardised routines. Therefore, implementing industry 4.0 concepts to standardised and streamlined processes will reduce wastes and unnecessary investments. The concept of integrating lean and industry 4.0 technologies is still new to service sector thus very limited applications in the banking sector. Hence, this study focusses on identifying the gap of knowledge exists in the areas of integrating lean and industry 4.0 technologies in the banking sector. The developed conceptual framework described the relationship between lean and

industry 4.0 concepts with the operational performance of an organisation in different aspects. Though the implementation of the principles of industry 4.0 can be strengthened by incorporating lean tools to streamline the processes.

According to the literature there are few other factors that affect the implementation of industry 4.0 such as requirement of higher investment, IT infrastructure requirement, expertise knowledge and human resources, security concerns and etc. Human factor is considered as important in implementing lean as well.

Though there are only few studies which were conducted to analyse and evaluate industry 4.0 and lean based performance of an organisation and there are limited studies to apply these concepts to banking sector. So it is important to analyse and assess lean and industry 4.0 based performance improvement of the banking sector.

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Minimizing Carbon Footprint from Road Freight Transportation: A Systematic Review of Literature

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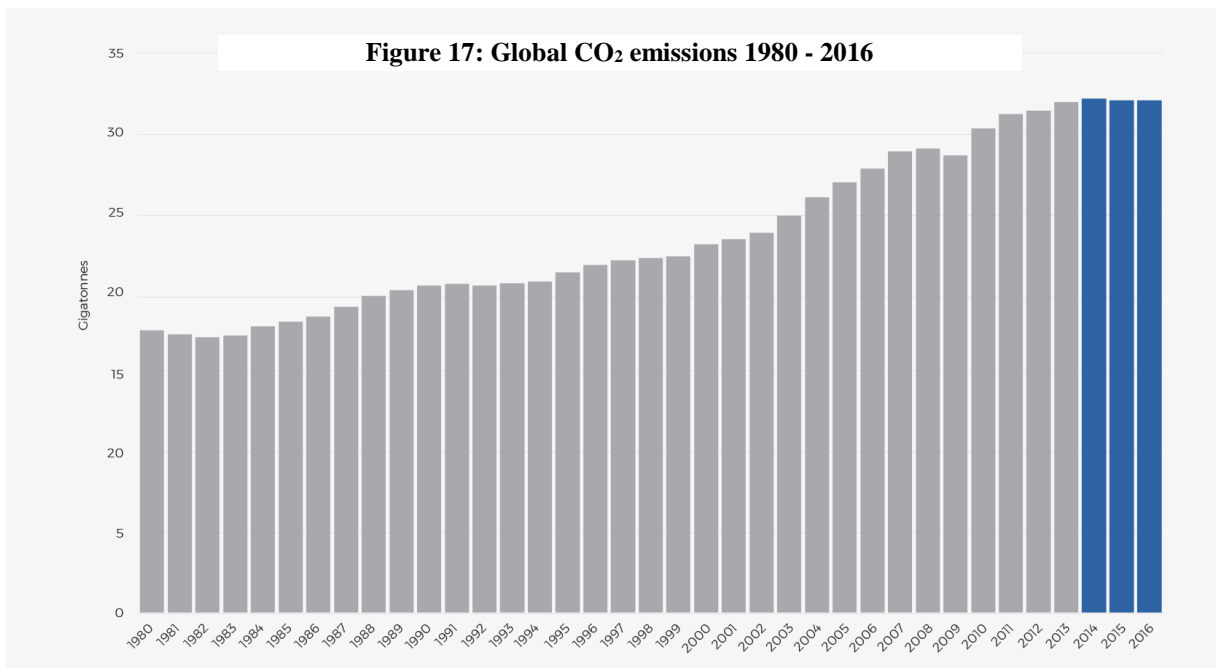
Abstract

Over the years with the rapid industrialization, the percentage of Greenhouse gas (GHG) emissions has increased drastically. Among the GHGs in the atmosphere Carbon Dioxide has accounted for the highest percentage. Within the past few decades, the atmospheric Carbon concentration has shown a rapid increase thus grabbing the attention of the world population in moving towards emission minimizing strategies. Transportation is accounted as one of the highest contributors of Carbon emission across different regions of the globe. Globalization has allowed the businesses to function as a single unit thus lengthening the supply chains and making it a strong contributor to the increasing Carbon footprint by means of transportation via different modes such as land, sea, air and pipeline. Inland freight transportation is mainly carried out either as road or rail transportation and when considering the breakdown due to agility and flexibility required in modern supply chains, road transportation is mainly practised worldwide. The amount of Carbon footprint left from the road freight transportation varies with many factors, starting from the vehicle type and fuel type up to changes in the business strategies of the firm. Hence most of the business organizations place an increased concern on their logistics activities in order to reduce the percentage of their emissions thus practising a sustainable organizational policy. Based on the literature review, it is supposed to identify the factors that affect the rate of Carbon emission from road freight transportation and the currently available reduction measures that are practised within organizations. This study presents a conceptual framework for carbon emission reduction and factors that affect the rate of carbon emission from road freight transportation, through a comprehensive and systematic review of literature. Hence, the paper will provide an insight in the current available knowledge in the research area and will act as a guide for future research.

Keywords: Carbon Footprint, GHG Emissions, Transportation, Road Freight

INTRODUCTION

Carbon Footprint; “The Carbon Footprint is a measure of the exclusive total amount of Carbon Dioxide emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product”(Wiedmann & Minx, 2008). Carbon footprint has significantly increased over the years as seen in Figure 1 and thus this has led to major climatic changes and environmental imbalance.



Source - (IEA, 2017)

Over the past decade the concern on the Carbon Footprint has drastically increased within the world community. Various researches have been carried out by global and regional environmental organizations as well as by academic community, in relevance to the topic, its effects on the global climate and the mitigation practices. Hence various global goals are set to be achieved within the next upcoming decades. According to recommendations from the Intergovernmental Panel on Climatic Change (IPCC), the accepted level of atmospheric Carbon Dioxide (CO₂) concentration should be limited to 450ppm or below with the globally acknowledged increase in the world temperature, limited to 2⁰C, by 2100 relative to the pre-industrial levels (IPCC, 2014). The pathway for the achievement of this goal will require huge reduction in the total CO₂ emissions compared to previous emissions recorded.

Global surveys are carried out yearly to identify the percentage wise contribution from different economic sectors for the Carbon emission thus enabling the governments and the industry in planning proper practices to mitigate the emissions from each sector. Data from International Energy Agency (IEA), 2017 report of highlights from CO₂ emissions from fuel combustion as shown in Figure 2 Electricity and Heat as the highest sector with 42% contribution and Transport as the second highest with a contribution of 24%.(IEA, 2017)

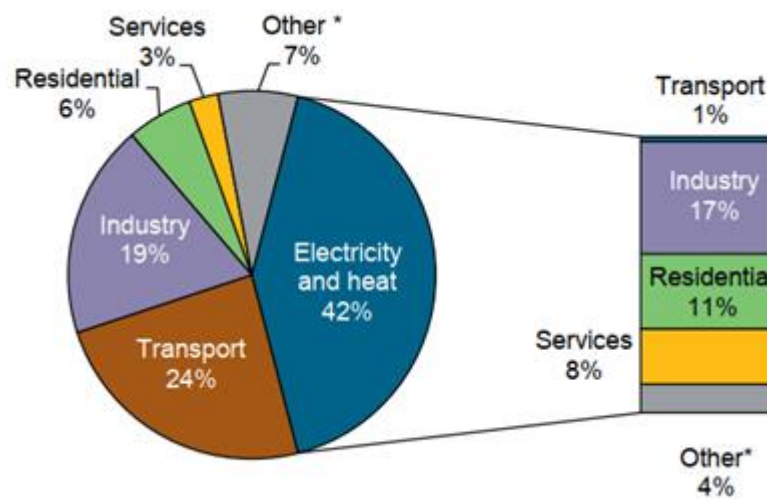


Figure 18: Economic Sector wise Global CO₂ emissions

Source - (IEA, 2017)

Despite of the various modes of transportation available such as road, rail, air, sea/ water ways and pipelines the mainly practised mode of transportation worldwide for both passenger and cargo transportation is by land. Specifically when focusing on the inland industrial cargo transportation, road ways are the most common medium used. (Ang-Olson & Schroeer, 2002)Hence business organizations are now focusing on the reduction of CO₂ emissions from their transportation activities and various researches have been carried out over the years to analyze the factors that contribute for the escalation of CO₂ emissions from road freight transportation. Many of the researches carried out have followed the qualitative approach to

find out the factors and their relative percentage effect on the emissions, while some researches have focused on forecasting the CO₂ emission amounts within the near future, thereby suggesting strategies to reduce the emission based on the factors found such as, structural considerations of the vehicles, commercial factors, operational factors, functional factors, product related factors and external factors like government policies etc. (Piecyk & McKinnon, 2010)

This study systematically analyses the available literature with the intention of ascertaining areas with knowledge gaps in factors that affect the rate of Carbon emission from road freight transportation. The findings of this study will assist in moving towards sustainability in transportation.

The paper is structured as follows; methodology of the study, review of literature, discussion of the factors identified and finally the conclusion of the study along with a guidance for future research.

METHODOLOGY

A productive literature review has the power to lay down the foundation for advancing knowledge while unveiling the unsought research areas for future studies (Webster & Watson, 2002). Hence, in developing a flourishing literature review, a prime importance should be given to the process of selecting research articles. First, articles were searched via a simple web search based on keywords related to the study area and based on the year of publication which is targeted to be between 1995 and 2017 in order to ensure the relevance of the study to current context. This resulted in a total of twenty-three articles. Then, the articles were screened based on their title and the abstract, to examine the applicability in the area of concern. This phase resulted in the rejection of eight articles. In the next step, full scripts of the remaining articles were thoroughly examined to identify the relevance and the contribution to the study area. This secondary screening process resulted in the rejection of five more articles thus leaving fifteen articles as the final sample taken for the literature review. The selection process followed is given in the Figure 3 and all the studied articles are stated in the list of references.

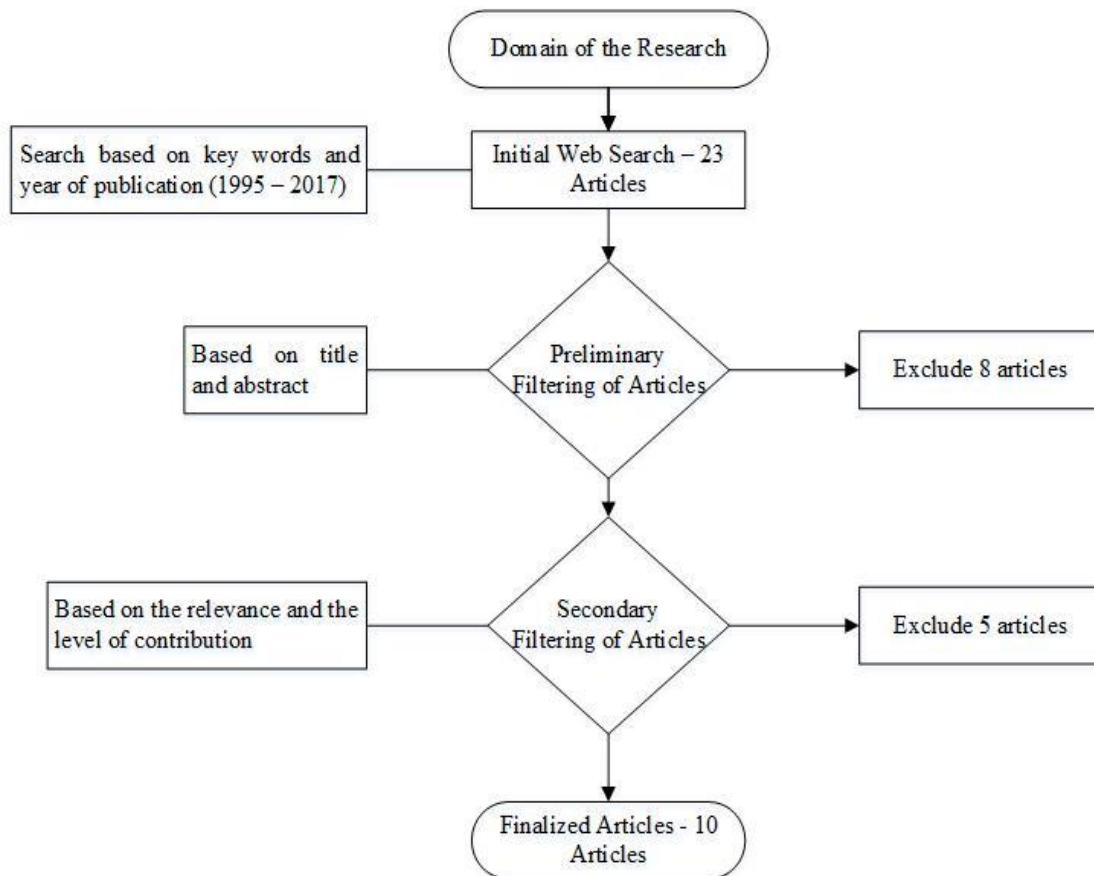


Figure 19: Screening Process

Selected pool of research papers were systematically analysed to identify the factors that affect the rate of Carbon emission from road freight transportation and based on the knowledge attained a conceptual framework was developed.

MAIN RESULTS OF THE REVIEWED STUDIES

Over the years, many researchers have contributed to literature on Carbon emission from road transportation. These researches have covered; the factors that can affect the rate of Carbon emission, emission mitigating techniques and the units of measuring Carbon emission from vehicles.

An empirical assessment has been carried out by McKinnon & Woodburn (1996) for logistical restructuring in order to reduce the growth of road freight traffic. In this research, they have identified four major factors in logistical decision making that have a direct impact on the demand for road freight transportation, thereby affecting the rate of Carbon emission from road freight transportation. First factor considered was the structure of the logistic system that prevails within the organization which in turn decides the number, location and the capacities of factories, warehouses and hubs of the organizations distribution channel. Patterns of sourcing and distribution practiced within the organization came up as the second factor with its ability of changing the total upstream and downstream transportation movements with a change in the policies practiced for sourcing and distribution. Also the process of sub-contracting intermediate stages of production such as quality assurance testing has increased the amount of transportation movements within the supply chain thus causing a higher rate of Carbon emission. Third factor identified was the way how the product flow was scheduled. This governs the number of vehicle movements that has to be done in upstream of the chain for sourcing requirements and downstream of the chain for product distribution. The final factor considered was the manner in which the transport resources i.e. vehicles, delivery routes were managed. The way in which the transportation is carried out meaning the mode of transportation, vehicles used, planning of the loads and the vehicle routing has a higher impact in the rate of Carbon emission during the transportation. When considering the authority associated over the four factors, the first two factors discussed comes from the senior managerial decisions while in the last two factors logistic manager has a higher influence in decision making. (McKinnon & Woodburn, 1996)

In the research article '*Energy Efficiency Strategies for Freight Trucking: Potential Impact on Fuel Use and Greenhouse Gas Emissions*' researchers have identified various vehicle

maintenance, driving habits and driver related factors that have an effect of energy losses during transport and thus have an impact on the rate of Carbon emission. The primarily identified factor is the availability of improved aero dynamics of the vehicle which is proved to have a very high impact on the truck fuel efficiency. Improving aero dynamics has been practiced since 1970s and currently many of the major truck manufactures offer aero dynamic models that come with sloped hood and a streamlined front along with a set of add-on devices.

Another factor identified during this research is the use of wide based tyres instead of the dual tyres used in the truck's drive and the axle. Usage of wide based tyres reduces the rolling resistance and the tare weight thus increasing the fuel efficiency. Though researches has proved the fuel efficiency of using wide based tyres, drivers shows a less interest due to the lack of redundancy offered by the usage of wide based tyres instead of dual tyres which are mounted on the axle hence it do not prevent a truck from driving to a required destination even with a one flat tyre whereas the wide based tyres leaves a concern about getting immobilized.

Maintaining the tyre inflation amount at a proper rate as suited for the vehicle is also identified as a factor that can affect the fuel efficiency via its ability to reduce the rolling resistance. In nowadays Automated Tyre Inflation (ATI) systems are used for achieving the accurate tyre inflation level. Another factor identified from this research is the tare weight of the vehicle. Tare weight is the empty weight of the vehicle and this can be reduce by using lightweight materials for the body of the vehicle and by eliminating unnecessary components of the vehicle. Usage of low- friction lubricants i.e. lubricants with low viscosity also helps in the process of increasing the fuel efficiency by reducing the friction losses in the engine. Low viscosity lubricants are mainly synthetic and are seen less commonly used in truck fleets due to the concern about the possibility of engine wear. Reduced engine idling time also has a direct impact on maintaining the fuel efficiency and hence in order to maintain optimal engine idling time as required by the truck to heat or cool the cab or to run the necessary electrical appliances, automated engine idling systems can be used. The efficiency of the optimization of engine idling time with the usage of automated idling system depends on the environment where the truck is operating in.

Researchers were also able to identify two human factors i.e. driving speed and driver training and monitoring as to affect the rate of fuel efficiency. When considering the driving speed fuel economy can be improved with the reduction of speed, and according to data, the fuel economy drops drastically with the increase of speed more than 55mph. Hence, various mechanisms

such as engine speed governors, initiating driver trainings for speed maintenance and usage of technical support such as electronic engine monitoring can be implemented for this process. Also providing drivers with proper training on acceleration practice, shifting techniques, route choice etc. also have a positive impact on increasing the fuel efficiency and follow up monitoring can be done with the usage of data coming from electronic engine monitors to assess the practices of the driver in relation to the afore mentioned areas. (Ang-Olson & Schroeer, 2002)

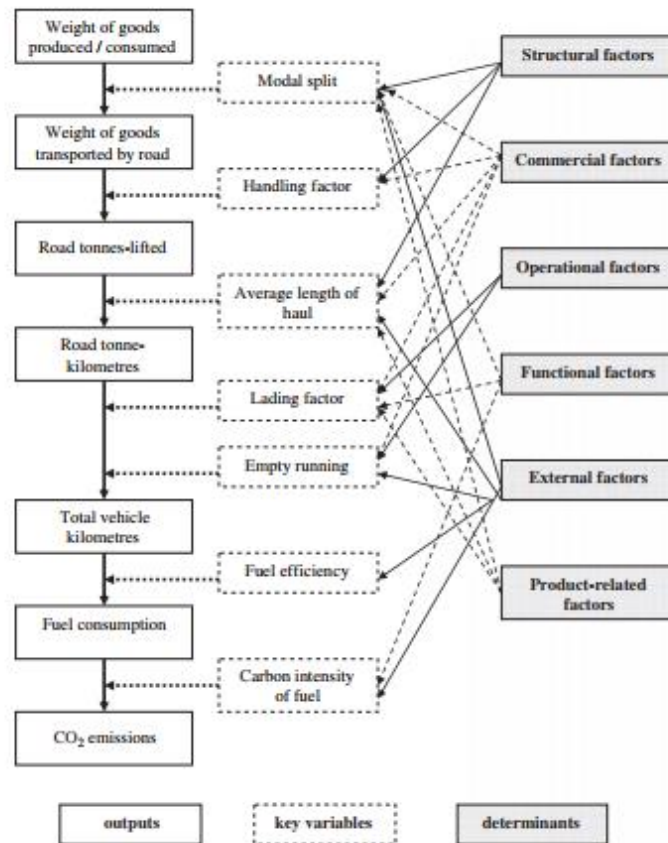


Figure 20: Relationship between logistical variables, determinants and environmental impacts

Source - (Piecny & McKinnon, 2010)

A research has been carried out in 2010 to forecast the Carbon footprint in 2020 by analyzing the responses of around 370 specialists from across the world based on an online Delphi survey. This research allowed the researchers to identify six factors coming from logistical decision making, product characteristics and external factors that have a direct impact on the rate of Carbon emission from road freight transportation. Based on the identified factors and their relevant influencing areas an analytical framework as depicted in Figure 4 has been developed

to illustrate the interdependencies. This model has been proposed as an extended version of the initial model proposed by McKinnon and Woodburn in 1996. (Piecnyk & McKinnon, 2010)

The first four factors stated in the above model i.e. Structural factor, Commercial factor, Operational factor and Functional factor links in with the four logistical decision making factors proposed by (McKinnon & Woodburn, 1996). In this research, the researchers have explored these factors considering the current trends in the world. When considering the structural factors, in relation to present scenario, some of the mainly followed practices are the centralization of economic activities, shifting to hub and spoke networks and the availability of primary consolidation centers in the distribution network. These trends can create different impacts to the Carbon emission percentages from road transportation depending on the type of business, for example within the retail industry, due to decrease in the size of storage, the number of deliveries increases resulting in an increased Carbon output. New trends anticipated in the commercial factors are the increase in the online trading and the increased amounts of product returns that are either for recycling or reuse. Organizations moving into global sourcing strategies prominent and has a direct impact on the discussed topic. In relation to operation factors with the usage practices such as Just In Time (JIT) manufacturing and reduced order lead times more frequent deliveries are required. Hence these have a direct impact on Carbon emission in transportation but can be reduced depending on the way the processes are being managed. When considering the final factor mentioned in the earlier model i.e. functional factor, with the use of new technologies such as the usage of double-deck/high cube vehicles, application of telematics and Computerized Vehicle Routing and scheduling Systems (CVRS), usage of online freight exchange and load matching services etc. will result in a savings in the fuel consumption thus leading to lesser emission of CO₂ to atmosphere.

Product related factors refer to the physical structure of the product which is developed following the store-ready approach and thus results in less space efficiency during transportation. Therefore logistical consideration should also be placed into the initial stage of product development process. When considering the external factors referred in this article, main one is the frequent rise of oil price which urge the need of practicing strategies for managing oil efficiency which in return will reduce the amount of CO₂ emissions during transportation due to high fuel efficiency. Also the article refers the government environmental policies placed for maintaining the vehicles, the availability of proper road infrastructure with less congestion, government tax policies on infrastructure usage etc. as to having an indirect

impact in regulating the logistic practices of an organization thus minimizing the Carbon emission from transportation. (Piecyk & McKinnon, 2010; Laursonne, et al., 2011)

Factors that affect the rate of Carbon emission from road freight transportation can be grouped into four major categories as vehicle, driver, environmental conditions and traffic conditions. Out of which, driver related factors and some of the vehicle related factors such as tyre pressure, transmission type etc. are not taken into consideration for most of the freight transportation vehicle emission models due to their unquantifiability. Rate of fuel usage is found to be high in lower speeds due to inefficiencies in the usage of fuel and tends to increase again after a certain speed limit due to aerodynamic drag. Also it is found that rate of Carbon emission is low for smaller vehicles as the rate of fuel usage is low due to smaller engines. (Demir, et al., 2011)

(Demir, et al., 2014) carried out a literature review on green road freight transportation in which the researchers were able to identify five major categories of factors that affect the rate of fuel consumption in vehicles that in turn affect the rate of Carbon emission as given in Figure 5. Among the numerous factors that affect the fuel consumption, speed is considered the most important as it can affect inertia, rolling resistance, air resistance and road slope. Optimum driving speed can assist in gaining high fuel efficiency but this optimum value varies depending on the geographical area due to the speed limits permitted by government and due to traffic density. Congestions contribute to the increase in fuel consumption due to the low non-optimal speeds practiced. A positive gradient of the road will increase the fuel consumption while a negative gradient will decrease the fuel consumption. With higher payload on vehicle the demand for engine power increases thus increasing the fuel consumption and also payload can affect the inertia forces, rolling resistance and road slope force thus again impacting the fuel consumption. Empty running results in a cost for the organization and also impacts the rate of Carbon emission. This is mainly seen in inbound transportation and majorly identified reason for cause is the lack of information integration among different stakeholders. *Green freight corridor* is a new concept developed in order to minimize the impact of environmental factors on the fuel consumption.

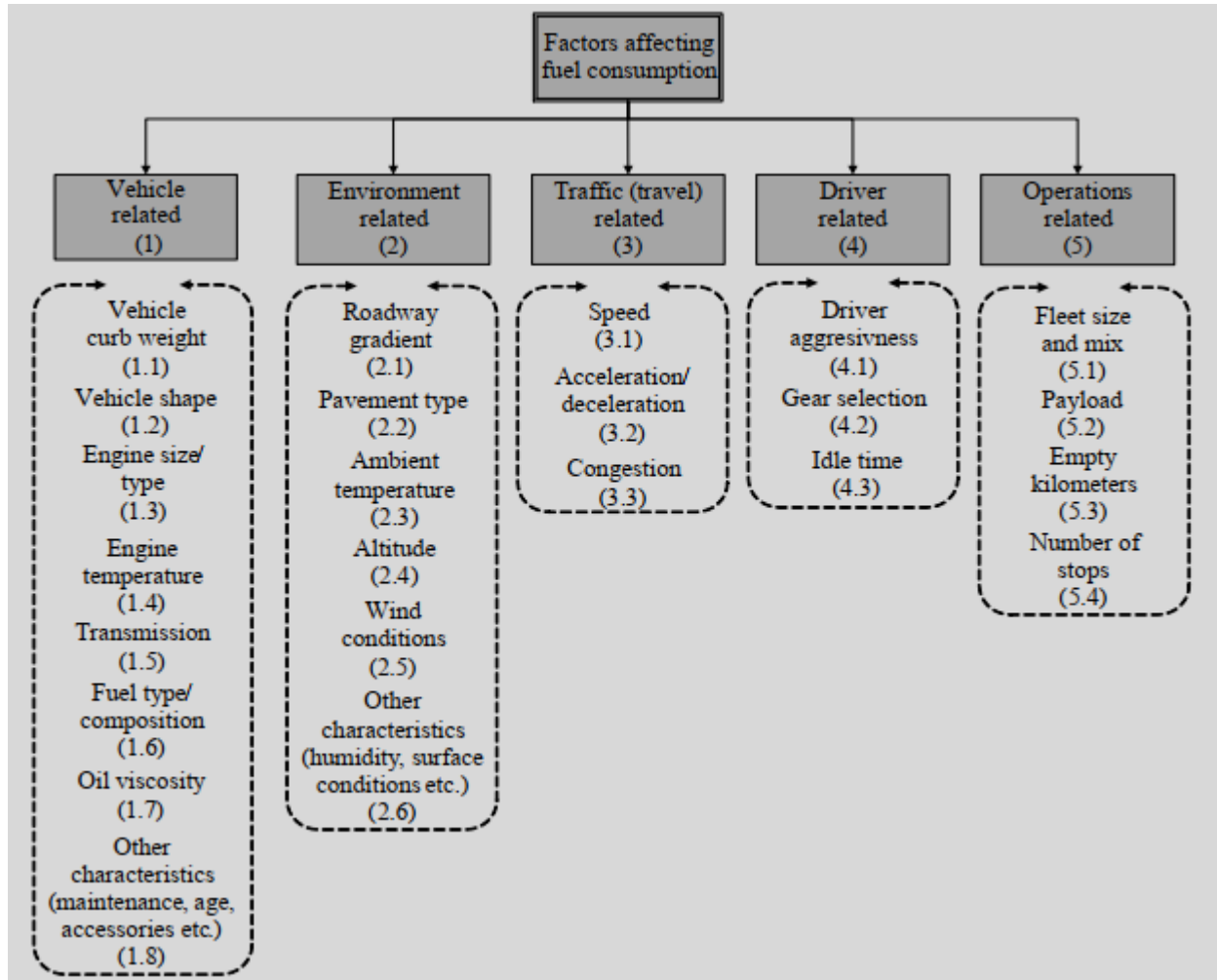


Figure 21: Factors affecting fuel consumption

Source - (Demir, et al., 2014)

In a report prepared for UNDP, (Arsalan, 2015) has concluded various best practices that can be implemented in order to reduce the rate of Carbon emission. Usage of clean and low Carbon fuels like B20 biodiesel fuel can improve the fuel efficiency and thus can reduce the rate of Carbon emission. Also these fuels are harvested from sustainable resources instead of the case in petroleum fuels that are harvested from finite fossil-fuel resources and these clean fuels will lead nations to be more energy independent. A major factor that affects the rate of Carbon emission from road freight transportation is the vehicle structure in terms of aerodynamic drag, tyre rolling resistance, weight of the auxiliary components of truck such as air conditioning compressor, hydraulic pump, fans etc., condition of the vehicle air conditioning system etc. It is also found out that vehicle idling has a positive impact on increase of the rate of Carbon emission. When considering operations and management relevant factors that can affect the rate of Carbon emission are truck loading efficiency, use of technologies to track traffic

congestions, use of *telematics* to optimize transportation networks, use of modal splits for transportation of freight etc. With proper use of technology and supply chain integration, these operation and management related factors can be used in order to achieve low Carbon emission levels. Driving habits also have a direct impact on the rate of Carbon emission. Hence, proper training and driver monitoring systems can be incorporated to manage these.

A research was carried out by (Lu, et al., 2007) to analyze the impact of changes in emission coefficient, vehicle fuel intensity, vehicle ownership, population intensity and economic growth on the rate of Carbon emissions from highways in Germany, Japan, South Korea and Taiwan during 1990-2002. Researchers have incorporated the *Divisia index* approach in carrying out the research. Overall research outcomes showcased that with the development of highways the rate of Carbon emission has increased drastically. This happens due to high aerodynamic drag that is resulted in driving in high speeds and hence higher amount of fuel consumption is resulted leading to increased Carbon emission.

In a research carried out in 2014, (Wang, et al., 2015) have identified the direct impact of the ICT practices used in logistics operation in reducing the rate of CO₂ emissions during transportation. Hence a framework has been modeled and tested in this research to benchmark the ICT strategies practiced and to identify their relevant impact on reducing the CO₂ emission from road freight transportation. Major ICT applications that are in current practice are the telematics systems, Transport Management Systems (TMS) and supplier management systems which helps in improving energy efficiency of vehicles, in routing and scheduling of vehicles and in managing collaborative transport arrangements.

Another research has been carried out in order to assess the impact of smart phone freight application service (Apps) in the reduction of Carbon emission from road freight transportation. Research was carried out in the form of a multiple-case-study approach and analyzed 7 of the available freight apps in Chinese market. Three types of freight apps were identified; apps to integrate demand and supply in time and space, apps to match cargo and available trucks and apps to optimize return route design. A framework has been developed as a modification to the previously available researches in order to show cases the impact of different freight applications. The identified factors that can affect the rate of Carbon emission from road freight transportation are as given in Figure 6. (Li & Yu, 2017)

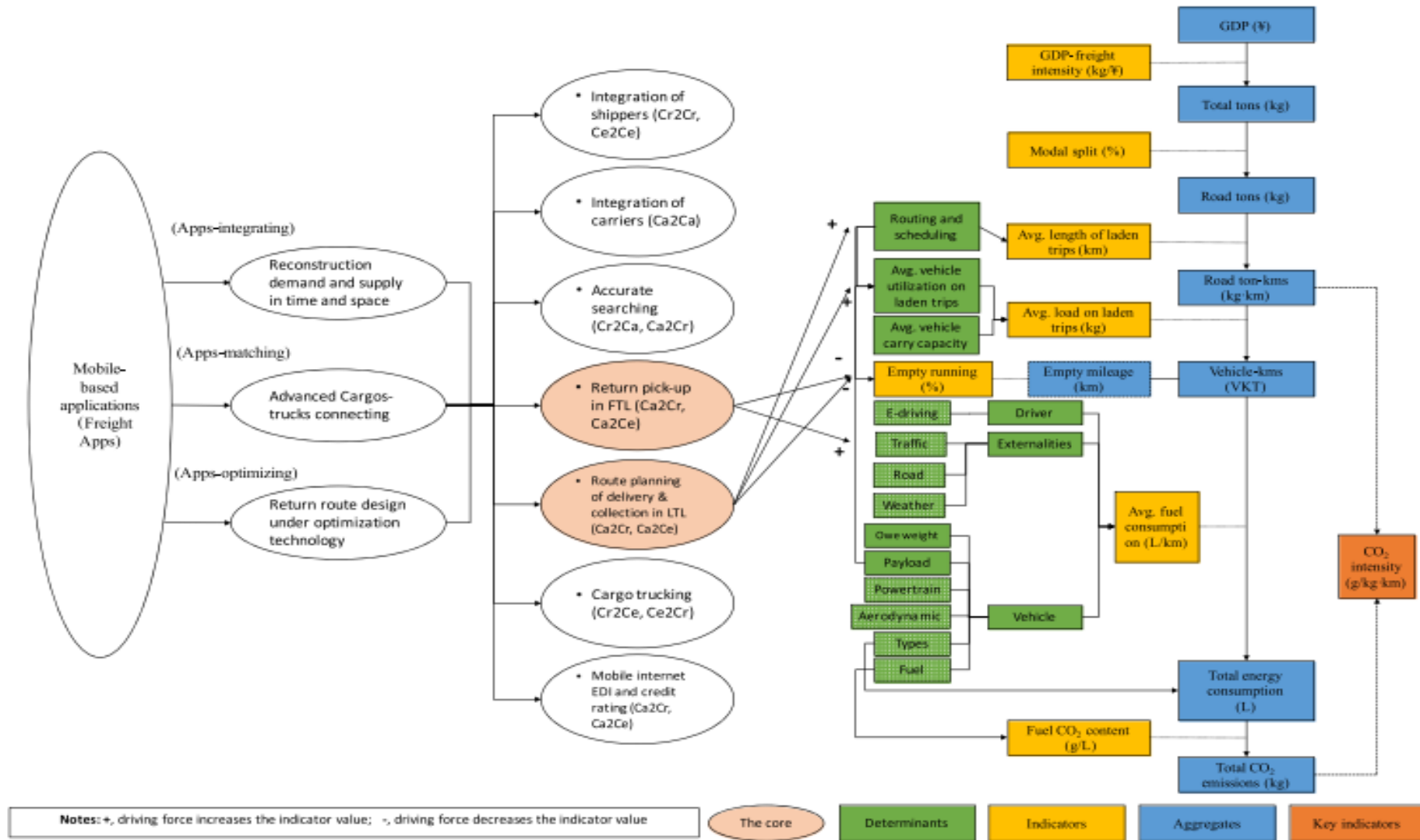


Figure 22 - Framework for analyzing freight apps for CO₂ reduction

Source - (Demir, et al., 2014)

DISCUSSION

Following section analyses the identified factors affecting the rate of Carbon emission from road transportation.

Factors that Affect the Rate of Carbon Emission from Road Freight Transportation

Table 1, depicts the major categories of factors that have been identified in the reviewed studies as to having an effecton the rate of Carbon emission from road transportation.

Table 51- Major categories of factors that affect Carbon emission

Study	Structural	Commercial	Operational	Functional	Product-related	External	Vehicle Structure	Human Resource	Technology/ ICT	Environmental	Traffic
(McKinnon & Woodburn, 1996)	*	*	*	*							
(Ang-Olson & Schroeer, 2002)							*	*			
(Piecyk & McKinnon, 2010)	*	*	*	*	*	*					
(Laurson, et al., 2011)	*	*	*	*	*	*					
(Demir , et al., 2011)							*	*		*	
(Demir, et al., 2014)			*				*	*		*	*
(Arsalan, 2015)			*			*		*	*		
(Lu, et al., 2007)										*	
(Wang, et al., 2015)									*		
(Li & Yu, 2017)									*		

Structural factors focus on the overall structure of the supply chain and its impact on the rate of Carbon emission. Decisions made on the structural factors of the supply chain have been conducted at higher levels of the organization and includes decisions such as the level of centralization and decentralization of the supply chain processes. These decisions in turn decide the number, capacity and the location of the

factories, warehouses, hubs etc. (McKinnon & Woodburn, 1996). Nowadays most of the supply chains expand overseas. Thus it is predicted to have a growth in the usage of hub-and-spoke networks and also in port and airport centric logistics. These two factors affect the rate of Carbon emission oppositely and the overall outcome of these two activities moderates the carbon emission rate. (Piecyk & McKinnon, 2010; Laurusone, et al., 2011) Fewer freight miles can be achieved by fully optimizing the vehicle in transportation and by practicing switching between different modes of transportation (modal splits). (Laurusone, et al., 2011)

Commercial factors focus on the sourcing and distribution strategies of the organization and thus impact the number and the nature of links in upstream and downstream supply chain. With the globalization of the world, supply chains have lengthened and most of the organizations are moving towards sources of cheap raw materials and labour and this results in relocating the sourcing, production and inventory handling to countries outside of the mainland. Currently, most of the non-core activities such as value-added and quality testing are outsourced leading to additional linkages to supply chain and resulting in more transportation and more Carbon emissions. Today online retailing industry is blooming due to its availability of providing fast service and high customer satisfaction with doorstep delivery. This industry requires frequent small scale transportation and leads to a higher rate of Carbon emission.

Operational factors emphasize on the operational strategies of an organization. These strategies can have an indirect impact on the rate of Carbon emission from freight transportation. Implementation of JIT practices have led to the requirement of minimum storage facilities and frequent deliveries. Also organizations are focusing on shortening the order lead times which allows the reduction in inventory and increase in transportation. (Piecyk & McKinnon, 2010) Operational activities related to transportation such as delivery time, selected vehicle mix, number of stops made during a trip, payload and vehicle empty running should be carefully analysed before taking any decisions in order to reduce the impact on the rate of Carbon emission. (Demir, et al., 2014)

Functional factors are affected by the decisions made at managerial level of an organization. (McKinnon & Woodburn, 1996) Technology has been developed to facilitate faster and optimized vehicle scheduling to match demand and supply and telematics; to monitor the delivery journey. Another major strategy that can be

implemented is the back loading where you utilize the remaining space within a vehicle to carry the returned products of company's own or from its customer or a third party. This will reduce the amount of empty running or altogether the use of separate vehicle for return handling.

When focusing on the *product-related factors* it mainly concerns the availability of efficient packaging in order to get maximum space utilizations in transportation. Currently customers demand more and more store-ready packaging and hence it is predicted on the inability of full vehicle utilization thus causing smaller amount of products per journey and higher amount of journeys causing more emissions to environment. In order to mitigate these effects considerations should be taken early on the product development stages and hence requires proper integration throughout the supply chain.

External factors are affected from the immediate macro environment of the organization and are mostly out of control by the organization. These are majorly decisions taken by government in the areas of fuel prices, regulations and policies on transportation vehicles, roads, pricings etc.(Piecyk & McKinnon, 2010)Higher fuel prices can force the organizations to move towards modal splits in transportation or to move towards more clean alternative fuels. Governments can impose pricing for the usage of road structure for freight transportation thus redirecting the traffic to less consumed hours of the day and to less optimized roads. Differential pricing schemes depending on the hours of the day and on the road structures used will redirect and reduce the traffic congestions in busy hours.(Arsalan, 2015)

Vehicle structure has a high and direct influence towards the emission minimization. Starting from the vehicle engine type that decide the fuel efficiency up to add-ons that can minimize the Carbon emission, *vehicle structure related factors* identified from the review of literature are stated in Table 2.

Table 52-Considerable Vehicle factors

Factor	Remedies
Vehicle Type	- Hybrid trucks
Fuels	- Clean fuels (e.g.: B20 biodiesel fuel)
Aero-dynamic drag	-Use of cabin top deflector, sloping hoods, cabin side flares - Closing and covering the gap between cabin and trailer

	<ul style="list-style-type: none"> - Trailer or van leading and pneumatic trailing edge curvatures - Pneumatic aerodynamic drag reduction - Planer boat tail plates on tractor-trailer - Vehicle load profile improvements
Tyre rolling resistance	<ul style="list-style-type: none"> -Use of Automatic Tyre Inflations Systems (ATIS) - Wide based tyre - Low rolling resistance tyres - Weight (tare weight) and accessory weight reduction - Light-weight materials -Electric auxiliaries - Fuel cell operated auxiliaries
Engine idling	<ul style="list-style-type: none"> - Off-road truck stop electrification - Truck-board truck stop electrification - Auxiliary power units - Direct fired heaters
Air conditioning system improvements	<ul style="list-style-type: none"> - Alternative refrigerants
Transmission Improvement	<ul style="list-style-type: none"> - Low viscosity lubricants

Driving practices of the truck drivers have a huge impact on the rate of Carbon emission from vehicles despite of the technologies implemented on the vehicle. Higher frequencies in acceleration or deceleration, vehicle speed, frequency in break usage are some of the *vehicle driver related practices* that affect the rate of fuel consumption thus leading to higher Carbon emissions.(Demir, et al., 2014) These effects can be mitigated with proper training provided to vehicle drivers on timely basis and with the use of driver monitoring systems to track truck idling, speed of driving, route taken etc.

Many *technologies* have been developed in order to facilitate the monitoring of Carbon emission rates and their affecting factors. Driver monitoring systems and application, telematics and apps to integrate demand and supply in time and space, to match cargo and available trucks and to optimize return route design are some of these technologies that are currently in practice. Though developments are available in the field, the frequency of usage of these resources are still at a very low level due to unawareness of general crowd on these technologies and due to deficiencies in the knowledge of handling the devices.

When considering the environmental consideration, this is taken as two types; road infrastructure and environment. When considering impacts from road infrastructure, rate

of Carbon emission has risen due to development of highways which allows driving at high speeds that increase the aerodynamic drag and high fuel combustion leading to more carbon emissions. When considering the impacts of external environment it was found that factors such as temperature, wind speeds, road surface conditions has a direct impact on the rate of Carbon emission from vehicles. As a remedy to *environmental factors* affecting the Carbon emission rate a concept called ‘green corridors’ has been developed.(Demir, et al., 2014)

Traffic congestions cause driving at low speeds than the stated optimal speeds resulting in the reduction of fuel efficiency and hence lead to higher Carbon emissions. Hence freight transportation should be more focused towards less traffic hours or to less congested roads in order to avoid delays and to reduce Carbon emissions. This can be again supported with government policies regarding pricing on road usage.

CONCLUSION

Global temperature is predicted to rise over the years due to industrialization that resulted in the emission of higher percentage of CO₂ emissions to the atmosphere. Breakdown of CO₂ emissions showcase transportation as the second highest contributor. For business organization, transportation execution plays a major role in delivering the right products to the right customer at the right time and hence is a key feature that enables the sustainability of the business. Nowadays, emphasis is not only placed on cost effectiveness of the deliveries but also on decreasing the environmental footprints left behind from transportation. Various strategies are implemented by business organizations to minimize their CO₂ emissions from road freight transportation.

Review of literature elaborated how strategic decisions taken at higher managerial levels such as the product development strategies etc. can affect the rate of Carbon emission from transportation activities. Hence, when devising strategies considerations should be taken on the impact for transportation and proper integration of information across the supply chain which will assist in the process. Functional decisions taken at the floor level such as proper maintenance of trucks, driver training, proper truck utilization etc. have a higher direct impact to the rate of Carbon emissions. Vehicle manufacturers should also focus on strategies to minimize the Carbon emission early on the designing stages of vehicles and this requires the integration of sustainability concepts even within the vehicle manufacturing bodies. Finally, it can be concluded that the factors that affect the

rate of Carbon emission are influenced by numerous factors which ultimately requires the integration of different bodies i.e. business organizations, transport companies, vehicle manufacturing organizations, government and also the collaboration of vehicle drivers in moving towards the reduction of Carbon emissions.

With the higher focus gained by the study area during the recent years, many researches have been conducted, but still there are areas which lacks knowledge. One such area is the impact of ICT and technology towards the minimization of Carbon emission. Many of the ICT applications are been developed in recent years to assist in transportation and hence this area will have a higher impact on the rate of Carbon emission reduction. Another area that has lacked focus in earlier researches is the impact of driving habits of vehicle drivers towards the Carbon emission. This factor has a high qualitative aspect to it that prevent researches from analysing it due to difficulties in quantifying the impacts.

Most of the developing countries practise the use of re-conditioned vehicles for both freight and passenger transportation. Over the time with vehicle degradation the rate of Carbon emissions increases. Hence, it needs to be properly researched on correlations between vehicle age, condition and rate of Carbon emissions in order to implement policies on importing and maintaining vehicles. Also research needs to be conducted on integration of freight and passenger transportation within the existing road structures and during new road constructions in order to mitigate Carbon emissions.

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Significance of Meal Forecasting in Airline Catering on Food Waste Minimization

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Abstract

Forecasting demand for products and services in the airline industry is particularly important. Research objectives are to assess the relationship of meal demand variance and kitchen wise waste per meal and to identify the importance of having forecasted meal demands before 24 hours to the estimated time of departure (ETD). Initial meal demand, final meal demand, meal demand variance and number of meals catered per day are the independent variables, and the dependent variable is production waste per meal (kg). A combination of descriptive research, correlation research and applied research were used. The population of this study was all the airlines catered to from July to October 2017. The selected sample for the study was 75% percent of total meals and 80% of sectors during the research period. Irrespective of the month, the pattern of the average daily meal count for weekdays has continued throughout the period of the research. Each sub kitchens has reported the lowest average waste per meal on August which is the Peak period with highest meal demand of the research period.

The least waste per meal and the standard deviation were detected in the confectionery. Minimum waste per meal was achieved when the initial meal demand was 100% of the flight with zero meal demand variance. The highest portion of average waste per meal was generated by the vegetable room followed by the hot kitchen. The average meal demands of all the classes of the airlines have increased representing that the risk of the increasing of the meal demands within last 24 hours has transferred to the caterer by the airline. The company has to invest for a better forecasting system and should search for other options such as standard meals for the increases (Meal Bank), standard uplift with the agreement of the customer airline to uplift standard quantity of meals for each class.

Keywords: Food Waste, Flight Catering Industry, Meal Forecast, Variance, Initial Meal Demand, Final Meal Demand, Estimated Time of Departure

INTRODUCTION

The tourism industry is a highly variable industry and the seasonality has a significant impact on the demand for the airline industry with travel patterns being most unpredictable. The passenger airline industry operates on low profit margins with many competitors. Airline carriers sustain profitability through operational efficiency improvements and by maintaining or increasing market share (Jason, 1999). Catering Flights is an important part of an airline's operations. The meal service has a critical impact on customer service quality and represents significant costs. Unfortunately, due to high passenger load variability and minimum production lead-time requirements, it is difficult to get the

number of meals to exactly match the passenger count on each flight. (Morency,1999).The flight catering is a very large, global industry. The total market size is estimated to be around 12 billion euros. More than 1 billion passengers are served each year. It is probably one of the most complex operational systems in the world (Jones, 2007).

Forecasting demand for the products and services in the airline industry is particularly important. Importance of forecasting the meal demand for the passengers by seat class as the meal options, quality and number of meals needed vary between classes. Forecasting meal demand is a complex exercise as a number of factors influence, whether a passenger will consume a meal, including the type of airline, seat class, and time of the flight. Research conducted by the Travel Catering Research Centre found that the caterers made little contribution to innovations inflight catering. Furthermore, there has been a minimum focus on the food as an area for new product development (Jones, 2007).

There is a variability between the initial passenger loads and the final passenger loads provided by the customer airline within 24 hours to the estimated time of departure and this has created an uncertainty in the Production Floor of a flight catering company. The average daily Flight kitchen waste per meal fluctuate throughout the year and this affect average profit margin (Profit per Meal) significantly.A catering system has to be designed and organized to produce the right quantity of food at the correct standard, for the required number of people, on time and using the resources of staff, equipment and materials effectively and efficiently. A central constraint is that inflight catering, production is separated from service by distance and time(Jones, 2004).Significant lead time is required to produce a meal order. Meal provisioning involves preparation, cooking, assembling, blast chilling/ chilling and transporting the meal order, and in some airports, large flights depart within minutes of each other (Jason, 1999).There is a variation of the average daily waste per meal in a flight catering company. Production of the flight kitchen vary in terms of total Pax count, types of meals, airline classes, etc. The average daily kitchen waste is fluctuating throughout the year. The average profit margin (Profit per Meal) is significantly depending on the average waste per meal.This research will guidethe flight catering companies to identify the importance of having accurate forecasting system to identify, measure and control the production waste.

RESEARCH OBJECTIVES

The research was conducted in order to,

- Assess the relationship ofmeal demandvariance and kitchen wise waste per meal

- Identify the importance of having forecasted Meal demands before 24 hours to the estimated time of departure (ETD)

METHODOLOGY

The research was conducted in the Flight Catering Company in Sri Lanka. Initial meal demand, final meal demand, meal demand variance and the number of meals catered per day are the independent variables, and the dependent variable is production waste per meal (kg). A combination of descriptive research, correlation research and the applied research were used. The population of this study was all the airlines catered to from July to October 2017. Stratified and judgmental sampling techniques were used for sampling procedure. Primary data collection form which was developed to collect the daily kitchen waste (kg) was used as the main research instrument of the research. The passenger flight loads data were collected using a secondary data collection method which was found suitable to the context of the study.

The selected sample for the study was two Airlines which generated 75% percent of total meals demand and 80% of the sectors, catered by the Flight Catering Company during the research period. Meal demand data were collected using secondary data collection method from the Inflair ERP system and the production waste data was collected using primary data collection sheet. The data analysis was done using the MINITAB statistical software. The descriptive data analysis, simple linear regression, Pearson Correlation Coefficient techniques were mainly used in data analysis.

In the empirical analysis multiple linear regression analysis was employed. Using the regression analysis, function $y = f(x)$ was analysed.

$$\text{Daily Flight Kitchen Waste per Meal} = \alpha * \text{Meal Demand Variance} + \varepsilon$$

α : Coefficient, ε : Error, Meal Demand Variance = Final Meal demand – Initial MealDemand

Pearson - Correlation Coefficient

- No of Meals per Day Vs. Kitchen Waste Per Meal
- Meal DemandVariance Vs. Individual Kitchen Waste Per Meal

Research Hypothesis

- H_0 : Meal DemandVariance and Production Waste Per Meal(kg) are independent
- H_A : Meal DemandVariance and Production Waste Per Meal(kg) are associated

RESULTS AND DISCUSSION

Descriptive analysis was used to provide summary of the data collected from the sample of the study.

Table 1.1: Population of the Research

	July	August	September	October
Total Meal Count	613072	715675	627928	620676
No of flights	3082	3234	3134	3272
No of Sectors	4263	3694	3553	3703

The population of the research was all the regular and charter flights catered by the flight catering company in the period of July to October 2017. The purpose of selecting this

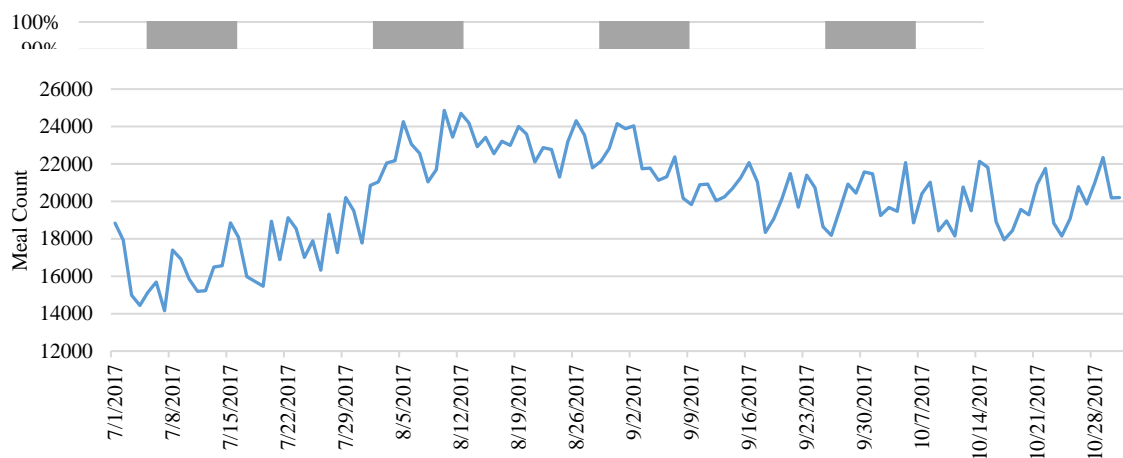


Figure 1.2: Daily Meal Demand Fluctuation

period was the period included both peak month (August- Total Meal Demand 715675) and off-peak months (July – Total Meal Demand 613072) for the company production. The selected sample flights meal demands, represent approximately 80% of the population of the Research. Approximately 80% of the total production is represented by the selected Sample for the Period of July to October 2017.

The figure 1.2 represent the daily meal demand fluctuation of the Period from July to October 2017. The daily meal demand has fluctuated from 24861 (maximum) on 10th August 2017 to 14156 (minimum) 07th July 2017.

The figure 1.3 represents the fluctuation of the total daily waste in each Sub-kitchen in the production department in kilograms (kg).

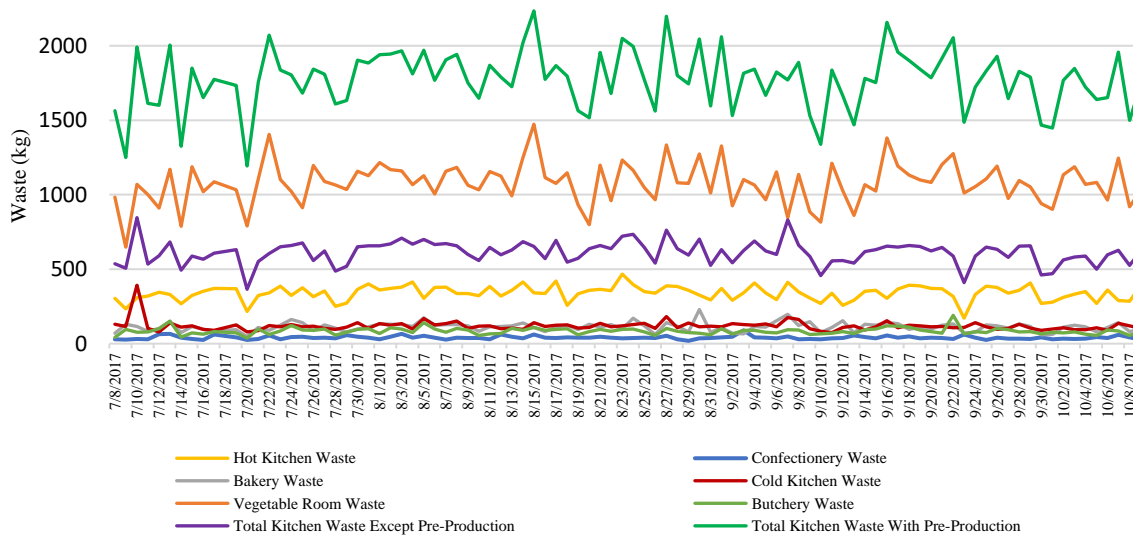


Figure 1.3: Total Daily Waste (kg) in Production Department

Irrespective of the month, the pattern of the average daily meal count for weekdays has continued throughout the period of the research (Figure 1.4).

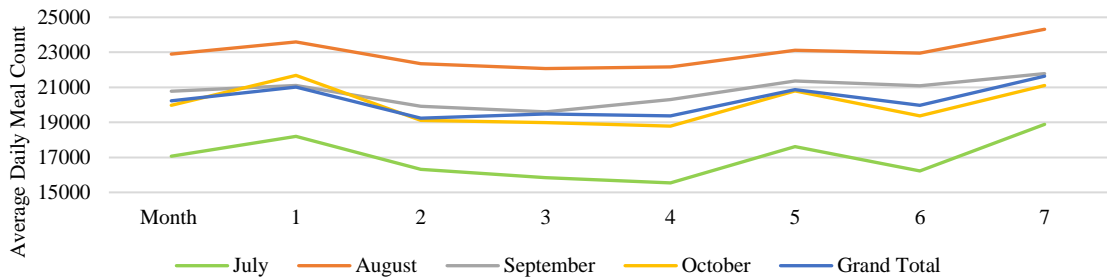


Figure 1.4: Daily Average Meal Count of the Population- Week Day Wise

The figure 1.5 represents the variation of the average waste per meal in kilograms from July to October 2017. Each sub kitchen has reported the lowest average waste per meal in August which is the peak period with highest meal demand of the research period. The highest waste has reported in the month of October. The provision for the potential demand increases has caused the increasing of the average waste per meal due to the uncertainty in the production line without accurate forecast of the final meal demand. The impact on the upstream of the supply chain has represented by the increasing of waste per meal significantly in the upstream (pre- production) due to the supply chain bullwhip effect.

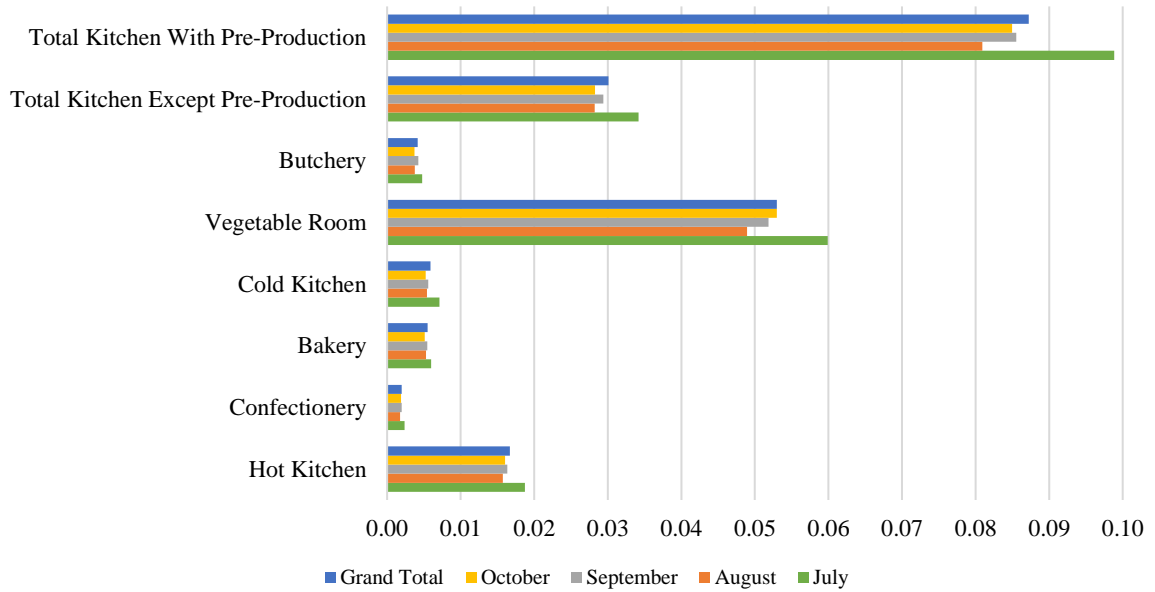


Figure 1.5: Daily Area Wise Average Waste per Meal - Monthly

The highest waste per meal and the standard deviation were detected in pre-production (Figure 1.6). The least waste per meal and the standard deviation were detected in Confectionery. The highest portion of average waste per meal has generated by the vegetable room followed by the hot kitchen. The Figure 1.6 graphically represents the daily area wise average waste per meal for the period from July to October 2017. According to the Figure 1.6 area chart the highest portion of the average waste per meal is generated by the vegetable room then the hot kitchen. Minimum proportion has incurred by the Confectionery

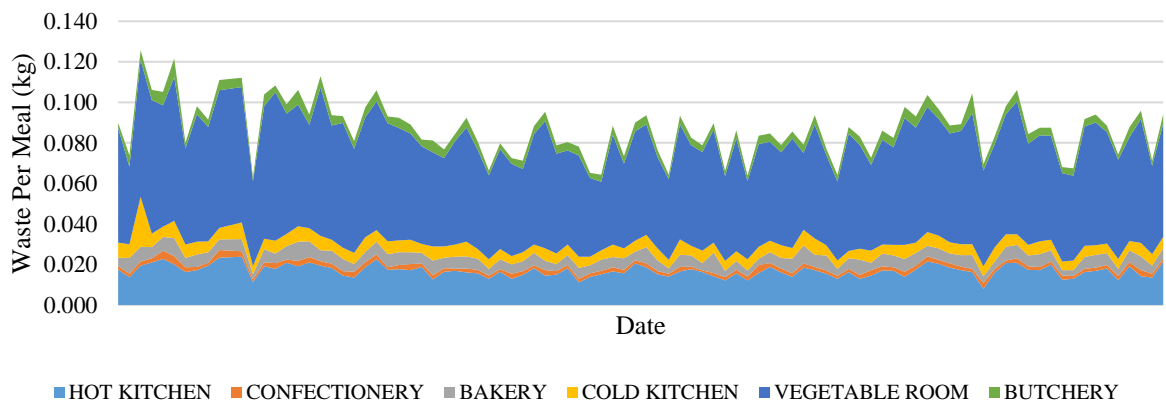


Figure 1.6: Daily Area Wise Waste per Meal

Referring to the figure 1.7 the comparison of the pre-production (vegetable room and butchery) and the production (hot kitchen, cold kitchen, confectionery and the bakery) contribution for the total average waste per meal has followed the popular Pareto Theory which is 80% of the average waste per meal was generated from the pre-production (vegetable room and butchery) and the balance 20% was generated from the other sub kitchens (hot kitchen, cold kitchen, Confectionery and the bakery). Sub kitchens represent the lowest average waste per meal on August which is the peak period with

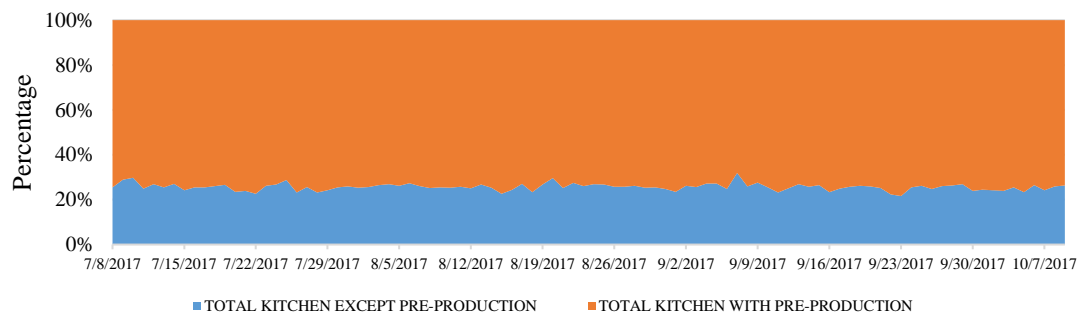


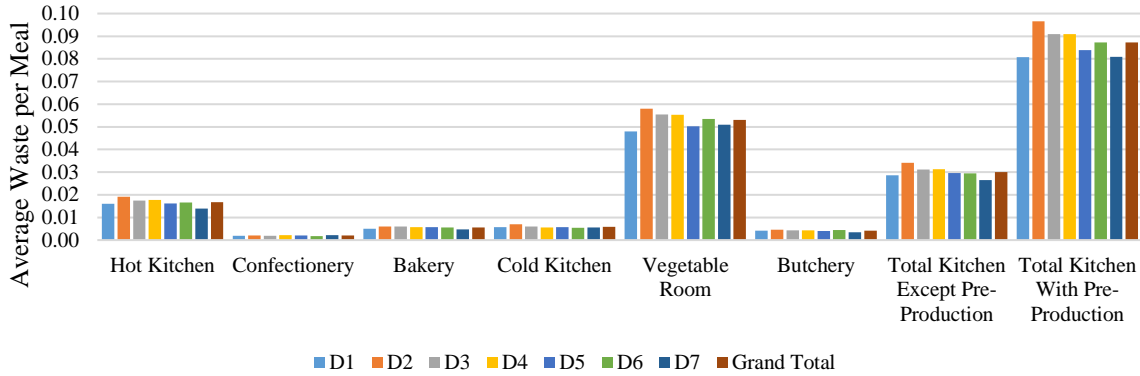
Figure 1.7: Total Waste Analysis - Per Production vs. Production

highest meal demand.

The figure 1.8 graphically represents the daily fluctuation of the average waste per meal in the period of July to October 2017 with respect to each week day for each sub kitchens. The highest average waste per meal 0.019 kg / per meal has generated on day number 2 (Monday) in hot kitchen, highest average waste per meal in Bakery has reported on day number 02/03/04/05/06 (Monday, Tuesday, Wednesday, Thursday and Friday) as 0.005 kg per meal, for cold kitchen the highest average waste per meal is generated on day number 2 (Monday), in vegetable room the highest average waste per meal 0.058 kg per meal on day number 02 (Monday), butchery the 0.005 kg waste per meal on day number 02 (Monday). The total average waste per meal with and without

pre-production has generated on day number 02 (Monday) following 0.034 kg per meal and 0.097 kg per meal.

Figure 1.8: Daily Average Waste per Meal – Week Day Wise



Minimum wastes per meal were reported as, hot kitchen day number 07 (Saturday) with 0.014 kg per meal, bakery day number 01/07(Saturday/ Sunday) with 0.005 kg per meal, vegetable room 0.048 kg per meal on day number 01 (Sunday), butchery day number 07(Saturday), total kitchen except pre-production on day number 07 (Saturday) with 0.027 kg per meal and finally total production with pre-production on day number 01/ 07 (Sunday and Saturday) with 0.081 kg per meal.

Linear Regression – First Class (FC)Meal Demand Variance

The below linear regressions summarize the relationships of average waste per meal in each sub kitchens with FC meal demand variance,except bakery all the other sub kitchens have negative linear relationships with the FC meal demand variance, indicating that the increasing of FC meal demand will marginally reduce the average waste per meal. This is due to the provision for the potential meal demand increased by the production staff when they receive the initial meal demand for the first class, and the possibility of share some product components for the increased meal demands which have currently prepared as bulk in pre-production.

$$\begin{aligned} \text{Average Waste per Meal in Hot} &= 0.016692 - 0.000124FC \text{ Meal} \\ \text{Kitchen} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in} &= 0.001996 - 0.000008FC \text{ Meal} \\ \text{Confectionery} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in} &= 0.005500 + 0.000000FC \text{ Meal} \\ \text{Bakery} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in Cold} &= 0.005906 - 0.000069 FC \text{ Meal} \\ \text{Kitchen} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in} &= 0.053026 - 0.000501 FC \text{ Meal} \\ \text{Vegetable Room} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in} &= 0.004172 - 0.000037 FC \text{ Meal} \\ \text{Butchery} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in Total} &= 0.030095 - 0.000201 FC \text{ Meal} \\ \text{Kitchen Except Pre Production} &\text{ Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in Total Kitchen} &= 0.087293 - 0.000738 FC \text{ Meal} \\ \text{With Pre Production} &\text{ Demand Variance} \end{aligned}$$

The number of components (separable components in the final product) in the bakery final product is less compared to the cold meal or hot meals where the bakery has to specifically produce the products for the first class meal which has led to an increase of the waste with the increase of meal demand in first class. All most all the kitchens have to specifically produce the components for the first class meal since the there is a Significant variance in the components in the first class. Also the production team commence the production once they receive the initial meal demand, since the number of meals are less and to avoid waste and the significant unpredictability in forecasting

the meal demands in first class. The First Class meal has led to an increase of waste, because kitchens produce customised products for first class meals with less standardization and the lack of mass production of such meals.

Linear Regression – Business Class (BC) Meal Demand Variance

$$\begin{array}{l} \text{Average Waste per Meal in Hot} \\ \text{Kitchen} \end{array} = 0.016670 - 0.000004 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Confectionery} \end{array} = 0.002001 - 0.000003 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Bakery} \end{array} = 0.005477 + 0.000014 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in Cold} \\ \text{Kitchen} \end{array} = 0.005840 + 0.000004 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Vegetable Room} \end{array} = 0.052895 - 0.000002 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Butchery} \end{array} = 0.004145 + 0.000006 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in Total} \\ \text{Kitchen Except Pre-Production} \end{array} = 0.029988 + 0.000011 \text{ BC Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in Total} \\ \text{Kitchen With Pre-production} \end{array} = 0.087027 + 0.000015 \text{ BC Meal} \\ \text{Demand Variance}$$

The BC meal demand variance has significantly negative correlate with the waste per meal in hot kitchen, confectionery and vegetable room sub areas in the production department. This represents that the pre-preparation of the meals in advance for the business class meal demands because if the meal demand increases the average waste per meal get reduced, vice versa. The minimum waste per meal has achieved when the BC meal demand variance was minimum in hot kitchen, confectionery and the vegetable room. Because the risk to the producer for potential increases is zero, because of that the producer can produce the exact quantity and the risk taken by the pre-production by producing the full configuration in advance is match with the initial meal demand received.

Linear Regression – Economy Class (EY) Meal Demand Variance

$$\begin{array}{l} \text{Average Waste per Meal in Hot} \\ \text{Kitchen} \end{array} = 0.016662 + 0.000002 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Confectionery} \end{array} = 0.001999 - 0.000000 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Bakery} \end{array} = 0.005486 + 0.000002 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in Cold} \\ \text{Kitchen} \end{array} = 0.005843 + 0.000000 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Vegetable Room} \end{array} = 0.052870 + 0.000012 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{array}{l} \text{Average Waste per Meal in} \\ \text{Butchery} \end{array} = 0.004146 + 0.000002 \text{ EY Meal} \\ \text{Demand Variance}$$

$$\begin{aligned} \text{Average Waste per Meal in Total Kitchen} &= 0.029989 + 0.000005 \text{ EY Meal} \\ \text{Except Pre-Production} &\qquad\qquad\qquad \text{Demand Variance} \end{aligned}$$

$$\begin{aligned} \text{Average Waste per Meal in Total Kitchen} &= 0.087005 + 0.000019 \text{ EY Meal} \\ \text{With Pre-production} &\qquad\qquad\qquad \text{Demand Variance} \end{aligned}$$

The linear regressions of EY-meal demand variance has indicated a positive correlation with the average waste per meal in all the sub- kitchens except confectionery. When the EY-meal demand has increased the average Waste per meal also has increased, vice versa, except the Confectionery. The increases in the meal demands in the last 24 hours to the estimated time, the average waste per meal has increased due to the discrepancies to the continuous production flow. Better forecasting of this factor will significantly control the average waste per meal in bakery.

The production waste per meal reduces with the increase in number of meal demand per day (Figure 1.9 & Figure 1.10). Demand uncertainty has significantly affected the increase of waste in the production area. Production uncertainty where the caterer has to take into account the risk of last minutes demand top-ups in advance and produce more than the initial order placed by the airline has created the supply chain bullwhip effect. Minimum waste per meal was achieved when the initial Meal Demand was 100% of the Flight.

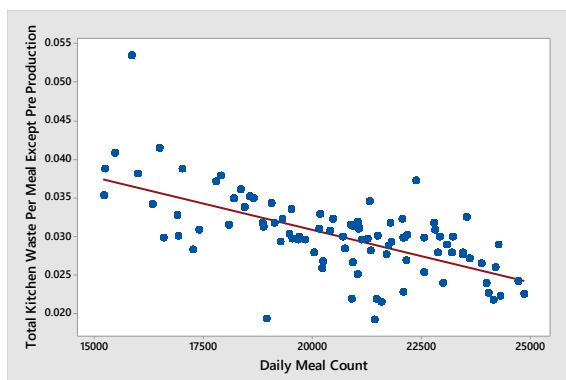


Figure 1.9: Scatterplot of Total Kitchen except Pre-Production Waste per Meal Vs Daily Meal Demand

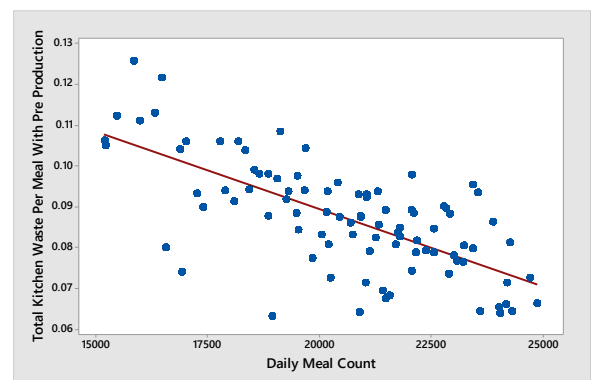


Figure 1.10: Scatterplot of Total Kitchen with Pre-Production Waste per Meal Vs Daily Meal Demand

CONCLUSION AND RECOMMENDATIONS

The current available literature in foodservices has little published on pre consumer food waste. There is also a gap in the current literature providing qualitative insight to the issue of food waste in organizations. Furthermore, the airline catering industry is an area with minimal publicly available waste research. The present study aims to assess the food waste in sub production kitchens of an airline catering company, explore the relationship with the meal demand Fluctuations. There is a variation of the average daily waste in the flight catering company, Sri Lanka. Production of the flight kitchen are vary in terms of total meal demand, types of meals, airline classes, etc. The average daily kitchen waste per meal has fluctuated throughout the year. The average meal demands for all the classes of the airlines has increased (positive variance), represent that the risk of the increasing of the meal demands within last 24 hours has transferred to the caterer by the customer airline. Airline has not given a significant provision for potential meal demand increases when they place the initial order (initial meal demand) to the caterer. This creates production uncertainty whereas the caterer has to take the risk of last minutes top-ups in advance and produce more than the initial order placed by the airline creating the Supply chain bullwhip effect. If the top-ups not received the caterer has to bear the cost of over-production. Each month the pattern of the meal demand fluctuation with the week day number can be observed. Irrespective of the month the pattern of the average daily meal demand of the week day has continued over the period of the research.

There is a variation of the variability of the meal demand variance from customer airline to airline. Because of that the impact to the waste is varying, therefore I is necessary tp consider in costing and pricing. The variability of the passenger meal demand is less in the peak months for all the classes. The meal bank inventory levels should be adjusted according to the month of the year. The Passenger meal demand variability is high in short haul flights compared to the medium haul and the long haul flights. This need to consider when calculating the inventory levels of the meal bank with standard meals. All the independent variables are scientifically significant (P- Value < 0.05) for the average waste per meal in total kitchen except pre-production (vegetable room and butchery) indicating that the importance of focusing on meal demand forecasting in order to reduce the production waste. The highest absolute value coefficient (-0.01677) is incurred by the

EY- final meal demand, which the company need to focus and forecast efficiently in order to reduce the average waste per meal in total kitchen with pre-production.

The provision for the potential increases might cause the average waste per meal due to the uncertainty in the production line without accurate forecast for the final meal demand. The impact of the upstream in the supply chain can be seen that the waste has increased significantly in the Upstream (Pre- production) due to the Supply Chain bullwhip Effect. The company has to invest for a better Forecasting system or search for another options such as standard meals for the increases (meal bank), standard uplift with the agreement of the customer airline to uplift standard quantity of meals for each class (E.g.: business class 5 Nos. and economy class 10 Nos.) by charging a standard percentage (E.g. – Cost of the meals) if the actual meal demands not increased, if increased the normal price of the meals.

Based on the research findings the economy class meal demand has a significant impact on the production waste per meal, propose to commence the meal bank with economy class meals initially. The company should decide the percentage of meals for the meal bank based on the total daily economy class meal demand to cater the meal demand increases within 24 Hours. But this should agree with the customer airlines to provide standard meal for the increases within 24 Hours to the departure. The company should check the possibility of reducing the cycle time of the process by identifying the current bottlenecks such as blast chilling which consume approximately 4 to 6 hours of the total cycle time of the meal production. It is recommended to restructure the production process to operate with 24 hours of production cycle time to eliminate the uncertainty in the floor due to the non-availability of the passenger meal demands to plan the production accordingly. The company should adjust the strategies which are required to manage the over-ordered and over-produced food. One way to achieve this would be to create more standardization between customer menus, especially for economy meals which make up the majority of meals produced. More standardization between menus would give more opportunities for over-produced or over-ordered food to be utilized, decreasing the amount of food wasted. This Research allowed the flight catering companies to identify the importance of having accurate forecasting system to minimize the production waste.

FUTURE STUDY POTENTIALS

Based on the available literature, there are very limited research studies have carried out in the flight catering industry which is abillion dollar business with high risk and responsibility due to the nature of the industry. The researcher propose to further study the below areas in order to provide more information for decision making and improve the industry as a whole.

- Evaluate the financial and operational impact of the meal demand variance
- Evaluate the feasibility of different meal demands forecast systems and the financial and operational impact of implementing the systems
- Financial and operational feasibility of static and mobile meal bank
- Analyze the waste with categorization of the waste which will provide more information for decision making on waste reduction
- Analyze the customer agreements and their impact on the waste generation and the load factor uncertainty, and identify the agreements/ terms which has created a win-win situation for both customer airline and the flight caterer by improving the flight catering industry as a whole.

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Notes