



16th International Research Conference on
Management and Finance (IRCMF 2021)



CONFERENCE PROCEEDINGS 2021

*“Strategic Resilience, Reinvention
and Digital Disruption in Business
Management”*



Faculty of Management and Finance
University of Colombo, Sri Lanka



CONFERENCE PROCEEDINGS

**The 16th International Research Conference on
Management and Finance (IRCMF – 2021)**



22nd October 2021

**Faculty of Management and Finance
University of Colombo
Sri Lanka**

PROCEEDINGS OF THE 16TH RESEARCH CONFERENCE
ON MANAGEMENT AND FINANCE – 2021

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MESSAGE FROM THE VICE CHANCELLOR

It gives me great pleasure to write this message of felicitation for the 16th International Research Conference on Management and Finance (IRCMF, 2021) organised by the Faculty of Management & Finance, University of Colombo. The chosen theme “Strategic Resilience, Reinvention and Digital Disruption in Business Management” is well aligned to the critical issues faced by small and medium entrepreneurs and corporate leaders alike, since March 2020. Research furthers knowledge creation and guides learners towards problem solving. I congratulate Faculty of Management & Finance, University of Colombo, for their excellent track record in addressing time appropriate issues, faced within Sri Lanka and the South Asian region, in a pragmatic manner. I congratulate the Dean, Heads of Departments and all staff and students for giving their best to support the two co-chairs of the Conference in sustaining this practice, despite the perpetual pandemic related problems that afflict our country. The sustained provision of a scientific forum that encourages staff and students to deliberate on an evidence-based approach to policy formulation, planning and implementation of the related fields in Management & Finance is a key objective of your conference. This year brings forth an added purpose to formulate a cohesive strategy to ensure real-time economic and development processes to be put in place during the threat of disease and disruption of all sectors, particularly the business sector. I am confident that this conference will enable appropriate discussions for recommending the government and corporate sectors a scientific and pragmatic approach to mitigate the impact of COVID-19 on the most vulnerable sectors of our society. I take this opportunity to thank the Dean and Faculty for encouraging our university community to develop an ethos of entrepreneurship across multiple disciplines and ensure that the products of our university are the “best of the best” in the related fields. I wish you happy and fruitful deliberation and discussion and a highly successful scientific session in parallel with the best of health and safety.

Yours truly,

Senior Professor Chandrika N. Wijeyaratne

Vice-chancellor

University of Colombo

Sri Lanka.

MESSAGE FROM THE DEAN

I am delighted to send this message for the 16th Annual International Research Conference on Management and Finance (IRCMF 2021) of the Faculty of Management and Finance of the University of Colombo.

The IRCMF 2021 is organised around the major theme of “Strategic Resilience, Reinvention and Digital Disruption in Business Management” within various disciplinary approaches, creating an outlet for academics, researchers, and practitioners to present their scholarly works. This conference is coupled with the Doctoral Colloquium, which provides a unique opportunity for doctoral students to discuss their work and highlight theoretical and methodological problems/issues for further discussion and inquiry with scholars and colloquium participants.

Today, it is essential to have a growing body of management research to answer complex problems and to gain a coherent understanding of complex issues in the real business world. In this sense, IRCMF is a platform for academics, researchers, and practitioners to discuss and debate scholarly dilemmas from different theoretical, methodological, and practical lenses by bringing different ideologies under one roof for exchanging ideas face to face to cater to those needs. The research papers submitted here are fitted with the overarching objective of our research conference and had a peer-reviewed process to maintain the quality of the articles.

I am sure that the conference of this type will inculcate the much-needed research culture among the academics and trigger interactions among researchers to exchange the ideas of recent advances in management. My thanks go to the conference and colloquium co-chairs, track coordinators, reviewers, organising committee, conference secretariat, and especially authors who contributed papers to this conference and colloquium.

I wish the Annual International Research Conference on Management and Finance (IRCMF 2021) a grand success.

Professor M. P. P. Dharmadasa

Dean, Faculty of Management & Finance

University of Colombo

Sri Lanka

MESSAGE FROM CO-CHAIRS OF THE CONFERENCE

With great pleasure, we welcome you to the 16th International Research Conference on Management and Finance (IRCMF 2021) organised by the Faculty of Management and Finance, University of Colombo, Sri Lanka. IRCMF 2021 is themed “Strategic Resilience, Reinvention and Digital Disruption in Business Management.” Being resilient and reinventive through digital disruption is key for businesses to overcome challenges, particularly posed by the pandemic. We hope that the studies presented at this conference will provide necessary theoretical and practical insights into this aspect.

IRCMF 2021 includes three main components: the parallel sessions of the main conference, the Doctoral Colloquium, and the Industry Dialogue. In parallel sessions, full research papers are presented under five tracks: Accounting and Management Information Systems, Business Economics and Finance, Human Resource Management, Marketing and Hospitality Management, and Management, Organisation Studies, and Interdisciplinary Research. All presentations are followed by discussions with co-presenters and participants and feedback from a panel of eminent researchers and academics. The Doctoral Colloquium is an invaluable opportunity provided to Doctoral candidates to present their work-in-progress to obtain feedback and suggestions for improvement from renowned academics, researchers, and participants. Industry Dialogue, a special feature of IRCMF 2021, brings together experienced professionals and practitioners from Accounting, Finance, Marketing, Human Resource Management, and Information Technology to provide the practitioners’ perspective on applying theories to the practical business world.

One of the key highlights of IRCMF 2021 is the keynote speech. We are honoured and delighted to have Professor Craig Deegan, Professor of Accounting, College of Business & Economics, University of Tasmania, Australia as our keynote speaker. Professor Deegan, the author of three leading textbooks *Financial Accounting* (McGraw Hill, 9th edition 2020), *An Introduction to Accounting: Accountability in Organisations and Society* (Cengage, 1st edition, 2019), and *Financial Accounting Theory* (McGraw Hill, 5th edition) is one of the most cited researchers with over 28,000 Google Scholar citations.

IRCMF 2021 would not have been possible without the assistance and guidance of many. We would like to extend our gratitude to Professor M.P.P Dharmadasa, the Dean of the Faculty of Management and Finance, the conference secretaries, the chair and members of the editorial committee, the members of the IT support committee, media

coordinators, track chairs, and coordinators, session chairs and coordinators, internal and external reviewers, and panelists for their input. There is no conference without participants and authors. Therefore, we especially acknowledge, value, and thank all authors who submitted their research work to IRCMF 2021.

Dr. N. K. Jayasiri

Co-chair – IRCMF 2021

Senior Lecturer

Department of Accounting

Faculty of Management & Finance

University of Colombo

Sri Lanka

Dr. S. D. K. Wanninayake

Co-chair – IRCMF 2021

Senior Lecturer

Department of Human Resources Management

Faculty of Management & Finance

University of Colombo

Sri Lanka

MESSAGE FROM CO-CHAIRS OF THE DOCTORAL COLLOQUIUM

We are very pleased to warmly welcome you to the seventh Doctoral Colloquium (DC) of the Faculty of Management and Finance, University of Colombo, Sri Lanka (DC), organised in parallel to the 16th International Research Conference on Management and Finance (IRCMF – 2021).

In line with the previous doctoral colloquiums, the key intention of this year's DC is to provide Doctoral students, both in Sri Lanka and outside of Sri Lanka, an opportunity to present their doctoral work-in-progress and receive early and constructive feedback from an eminent panel of scholars. We have chosen the panel members with much care to provide feedback that will assist the presenters in refining and reshaping the studies that will be presented. The DC will also be an ideal platform for the attendees to listen to emerging research and work-in-progress in their respective disciplinary areas and network with other doctoral students, scholars, and academics. In addition, we have invited two eminent scholars; Professor Dilani Jayawarna, Management School, University of Liverpool, United Kingdom, to deliver the keynote on developing researcher resilience; and Professor Kobus Maree, Department of Educational Psychology at the University of Pretoria, South Africa, to conduct a workshop on writing from research for publication purposes. We hope that the attendees of the doctoral colloquium will benefit immensely from these two sessions.

Details of 19 doctoral studies will be presented at the DC 2021 under five tracks: Accounting (04), Finance (02), Human Resource Management (04), Management and Organizational Studies (05), and Marketing and Interdisciplinary Studies (04). The short abstracts of the extended abstracts submitted will be published in the DC 2021 proceedings. We congratulate the doctoral candidates representing various universities and PhD programmes for being a part of our conference and hope that the feedback they receive will assist them in clarifying their PhD projects further.

Organising a successful DC was possible only due to the support extended by numerous individuals, to whom we express our sincere gratitude - the Vice Chancellor, University of Colombo; Dean, Faculty of Management and Finance; Senior Assistant Registrar, Faculty of Management and Finance; the joint secretaries of the DC; the Chairpersons of the IRCMF 2021; scholarly members of the reviewing panels; and all other members of the academic and administrative and support staff of the Faculty of Management and

Finance and the University of Colombo. We also thank the Keynote Speaker and the Workshop Resource person for accepting our invitation despite their busy schedules.

We hope you will have a productive and insightful experience in the IRCMF Doctoral Colloquium – 2021 and wish all participants success in their PhD research journeys!

Co-chairs of Doctoral Colloquium- 2021

Dr. S. Buvanendra

Senior Lecturer

Department of Finance

Faculty of Management & Finance

University of Colombo

Sri Lanka

Dr. Dharshani Thennakoon

Senior Lecturer

Department of Human Resources Management

Faculty of Management & Finance

University of Colombo University of Colombo

Sri Lanka

INDUSTRY DIALOGUE 2021

The Industry Dialogue is a key event of the IRCMF. This is held with the intention of linking the industry with the university, where contemporary issues faced by the industry are discussed with the participation of academics, industry practitioners, and even policymakers. This helps to bring the industry and the university closer together and strengthen ties. Given that this is done in the context of a research conference, it can even give insights into new areas of research, which would ultimately strengthen the industry-university collaboration.

The theme this year would be “*Strategic Resilience, Reinvention and Digital Disruption in Business Management.*” It is widely accepted that COVID 19 pandemic poses an immense threat to businesses. To successfully overcome this challenge imposed by the pandemic, it is important for business and business functions to achieve strategic resilience by adapting in order to ensure their continuous survival. This dialogue addresses how various business functions, as well as businesses as a whole, were affected by COVID 19 and how they responded to it. Most of these responses involve reinventing how things are done and radical changes in the form of digital disruption.

To discuss the issues presented by the theme, four experts covering four functional areas of Human Resource Management (HRM), marketing, finance, and accounting and Information Technology (IT) from four different industries will participate. These experts include Mr. Mohan Thanthirige, Group Financial Controller John Keells Holdings PLC, Mr. Dileep Mudadeniya, Head of Marketing Cinnamon Hotels and Resorts, Mr. Gayan Wickremeratne Senior Manager – HR Business Partnering Fortude and Mr. Nuwan Perera, Vice President Commerce, IFS Sri Lanka and Board Member at SLASSCOM engage in a timely and insightful discussion.

Mr. Rajishtha De Alwis Seneviratne

Moderator, Industry Dialogue IRCMF 2021:

Senior Lecturer of the Department of Business Economics

Faculty of Management and Finance

University of Colombo

KEYNOTE SPEECH - IRCMF 2021

PROFILE OF THE KEYNOTE SPEAKER

Professor Craig Deegan

Professor of Accounting, College of Business & Economics, University of Tasmania, Hobart, Tasmania, Australia

Craig Deegan is Professor of Accounting at the University of Tasmania. Craig was formerly a Chartered Accountant in practice. He has published in many leading international accounting research journals, predominantly in the area of social and environmental accountability. His work has attracted in excess of 25,000 citations (as per Google Scholar) making him one of the most highly cited accounting researchers internationally.

Craig regularly provides research expertise to corporations, government, and industry bodies on issues pertaining to financial accounting and corporate social and environmental accountability. Craig is also the author of the leading financial accounting textbooks, Financial Accounting (now in its 9th edition with Mc Graw Hill), Financial Accounting Theory (now in its fourth edition with Mc Graw Hill), and An Introduction to Accounting: Accountability in Organisations and Society (with Cengage Learning). In September 2020, one of Craig's book was awarded the prestigious individual award of Outstanding Tertiary and VET Resource across all disciplines by Educational Publishing Awards Australia.

OUTLINE OF THE SPEECH

Topic: The evolving role of 'accounting' and 'accountants' in a world of changing expectations about organisational responsibilities and accountabilities.

Applying a four-step accountability model, the presentation will link changing perceptions of organisational responsibilities (including to such issues as climate change and fair work practices/modern slavery), to changing perceptions of organisational accountability, the role of 'accounting', and accountants. We will explore why it is vital that accounting educational programmes at both the tertiary and professional level consider, in depth, the rich issues of organisational responsibilities and accountabilities. Accounting as both a technical and social practice shall be emphasised, with specific reference to accounting for climate change, modern slavery, and COVID 19.

Contents

<i>KEY PERSONNEL- IRCMF 2021</i>	<i>iii</i>
<i>TRACK CHAIRS AND COORDINATORS</i>	<i>v</i>
<i>PANEL OF REVIEWERS</i>	<i>vi</i>
<i>MESSAGE FROM THE VICE CHANCELLOR</i>	<i>viii</i>
<i>MESSAGE FROM THE DEAN</i>	<i>ix</i>
<i>MESSAGE FROM CO-CHAIRS OF THE CONFERENCE</i>	<i>x</i>
<i>MESSAGE FROM CO-CHAIRS OF THE DOCTORAL COLLOQUIUM</i>	<i>xii</i>
<i>INDUSTRY DIALOGUE 2021</i>	<i>xiv</i>
<i>KEY NOTE SPEECH - IRCMF 2021</i>	<i>xv</i>

TRACK SESSIONS

Accounting and Management Information Systems

IMPACT OF BANK COMPETITION ON RISK-TAKING BEHAVIOUR OF SRI LANKAN COMMERCIAL BANKS <i>Rathmalgoda, R. D. M. J. and Ekanayake, E. M. N. N.</i>	2
HEALTHCARE AND BALANCED SCORECARD FUSION: EVIDENCE FROM A PRIVATE SECTOR HOSPITAL IN SRI LANKA <i>Radampola, S. and Gooneratne, T. N.</i>	28
CHANGES IN MANAGEMENT ACCOUNTING PRACTICES IN ENTERPRISE RESOURCE PLANNING (ERP) CONTEXT: A CASE STUDY OF A MANUFACTURING ORGANISATION IN SRI LANKA <i>Perera, W. S. N. and Samanthi, D.</i>	52
CHANGES IN THE FUNDAMENTALS OF AUDITING: CASE EVIDENCE FROM A BIG FOUR AUDIT FIRM IN SRI LANKA <i>Patrick, C. K. and Samanthi, D.</i>	76
ENVIRONMENTAL MANAGEMENT ACCOUNTING PRACTICES OF LOCAL GOVERNMENT AUTHORITIES: WITH REFERENCE TO SOLID WASTE MANAGEMENT IN COLOMBO MUNICIPAL COUNCIL <i>Dampe, D. D. N. S. and Rajapakse, B.</i>	102

MEASURING SUSTAINABILITY PERFORMANCE OF MANUFACTURING ORGANISATIONS IN SRI LANKA: BALANCED SCORECARD PERSPECTIVE	131
<i>Peiris, H. S. H. and Rajapakse, B.</i>	
CORPORATE CONTRIBUTION FOR SUSTAINABLE DEVELOPMENT: A CASE FROM A MANUFACTURING SECTOR ORGANISATION IN SRI LANKA	175
<i>Rajapakse, T. C. B. and Rajapakse, B.</i>	
WORKING CAPITAL MANAGEMENT AND BARGAINING POWER IN THE NEO-LIBERAL ECONOMIC CONTEXT	208
<i>Abeyasinghe, C.</i>	
DETERMINANTS OF MOBILE BANKING ADOPTION: THEORY OF PLANNED BEHAVIOUR PERSPECTIVE	231
<i>Gamini, W. D. and Galhena, B. L.</i>	
 Business Economics	
EXPORTS REVEALED COMPARATIVE ADVANTAGE IN INTERNATIONAL TRADE: A STUDY BASED ON EXPORTS IN SRI LANKA	260
<i>Gunaratne, M. D. N. and Joseph, R</i>	
 Human Resources Management	
PREVENTION OF SEXUAL HARASSMENT IN ORGANISATIONS: EVIDENCE FROM SRI LANKA	284
<i>Adikaram, A. S. and Kailasapathy, P.</i>	
LEARNER BELIEFS AND THEIR SENSE OF SELF-EFFICACY IN CAREER DECISION MAKING	310
<i>Peiris, J. M. P. M.</i>	
LEADER-MEMBER EXCHANGE AND INNOVATIVE WORK BEHAVIOUR: THE MEDIATING ROLE OF THE TRUST IN LEADER IN THE NEW NORMAL	332
<i>Kularathne, H. M. R. D. and Sujeewa, W. W. A. N.</i>	
THE IMPACT OF EMOTIONAL INTELLIGENCE AND QUALITY OF WORK-LIFE ON ORGANISATIONAL CITIZENSHIP BEHAVIOUR: WITH SPECIAL REFERENCE TO THE NON-MANAGERIAL EMPLOYEES IN COLOMBO DISTRICT GOVERNMENT BANKS	346
<i>Dissanayake, D. F. and Wachissara, P. and De Silva, P. O.</i>	

Marketing and Hospitality Management

DETERMINANTS OF CONSUMER CHOICE FOR ELECTRONIC BANKING UTILISATION: EVIDENCE FROM CUSTOMERS OF PUBLIC BANKS IN SRI LANKA 372

Madhushankha, K. S. and Senathiraja, R.

ACCEPTANCE OF MOBILE BANKING SERVICES OFFERED BY SRI LANKAN COMMERCIAL BANKS 397

Nayanajith, D. A. G., Dissanayake, D. M. R., Wanninayake, W. M. C. B. and Damunupola, K. A.

NETWORK RELATIONSHIP MARKETING STRATEGY FOR THE SUCCESS OF MICRO, SMALL AND MEDIUM ENTERPRISES IN SRI LANKA 422

Sathana, V.

FACTORS AFFECTING GREEN PURCHASE BEHAVIOUR OF COSMETICS PRODUCTS: WITH SPECIAL REFERENCE TO PUBLIC SCHOOLS FEMALE TEACHERS IN RATHNAPURA DISTRICT 451

Gunarathna, W. D. I, Ven. Wachissara, P. Thero and De.Silva, P. O.

Management, Organisation Studies and Interdisciplinary Research

AWARENESS OF ONLINE LEARNING OF POSTGRADUATES DURING COVID 19: WITH SPECIAL REFERENCE TO SABARAGAMUWA UNIVERSITY OF SRI LANKA 485

Sellahewa, W. N., Samarasinghe, T. D. and Samarasinghe, N. K.

OPTIMISATION OF VEHICLE ROUTING FOR WASTE COLLECTION AND TRANSPORTATION IN RATMALANA AREA IN SRI LANKA 496

Joseph, R. and Gunaratne, M. D. N.

BARRIERS TO STRATEGIC PLAN IMPLEMENTATION: AN EXPLORATIVE STUDY OF MANUFACTURING SECTOR ORGANISATIONS IN SRI LANKA 514

Kariyapperuma, S.

DISCOURSES, PRACTICES, AND STRATEGY: A BOURDIEUSIAN EXPLANATION FOR STRATEGY-AS-PRACTICE PERSPECTIVE 533

De Peiris, T. N. S. and Kaluarachchi, K. A. S. P.

THE FACTORS ASSOCIATED WITH THE SUCCESS OF MICRO
SMALL AND MEDIUM ENTERPRISES: A STUDY AT NALLUR AND
JAFFNA DIVISIONAL SECRETARIAT, SRI LANKA 556
Sayanthan, B. and Sarathpapu, R.

INTEGRATING CONCEPTS IN EDUCATION LEADING TO SOCIAL
MOBILITY: PROPOSITIONS FOR FUTURE RESEARCH 581
Wickramasuriya, P.

Accounting and Management Information Systems

IMPACT OF BANK COMPETITION ON RISK-TAKING BEHAVIOUR OF SRI LANKAN COMMERCIAL BANKS

Rathmalgoda, R. D. M. J.

Department of Finance, Faculty of Management and Finance, University of Colombo

Ekanayake, E. M. N. N.

Department of Finance, Faculty of Management and Finance, University of Colombo

nishanie@dfn.cmb.ac.lk

Abstract

This paper has explored the risk-competition nexus in the Sri Lankan banking industry using multiple banks' measures of risk and competition. Considering the significant contribution of commercial banks to the financial system of Sri Lanka, the paper gives useful insights for bankers and policy makers on the consequences of competition on risk-taking by banks and thus its probable impact on economic stability. The findings were derived from secondary data obtained from a sample of 15 commercial banks, covering 11 years from 2009 to 2019, which can be considered the most competitive period for the banking industry after the end of 30 years terrorist war in Sri Lanka. The independent variable of the study, bank competition, was operationalised using the Herfindahl Hirschman Index using three proxies; assets, deposits, and loans. Z Index, which is based on leverage and performance, was employed to measure overall bank risk. Credit risk and liquidity risk were measured using the non-performing advances ratio and statutory liquid assets ratio, respectively. Findings were derived from an unbalanced panel employing regression analysis. The findings supported the competition-fragility hypothesis by confirming that competition is positively related to the credit risk exposure of the sample banks. However, results related to banks' overall risk and liquidity risk exposures confirm the alternative competition-stability view. Thus, both the hypothesis: competition-fragility and competition-stability have received some degree of empirical support using different measures of bank risk exposures with bank competition and/or market power in terms of market concentration. The banking sector in Sri Lanka is significantly concentrated with a moderate level of competition with moderately high credit risk and overall bank risk

exposures. Findings stressed that despite the positives associated with a competitive market, excessive competition among banks in a developing country could lead to excessive credit risk exposure, eventually making the banking sector unstable. Taking Sri Lanka as an illustrative example of a developing country, this study adds knowledge to an under-researched area and contributes to the extensive debate on bank risk-competition nexus in the global literature.

Keywords. Bank competition, Overall bank risk, Credit risk, Liquidity risk

1. Introduction

Bank competition is one of the major objectives behind the liberalisation efforts of the financial sectors in South East Asia (Liu, et al., 2012). However, after many decades of implementation of liberalisation programmes, by encouraging foreign bank entry, consolidation and other structural reforms, there remains a paucity of information as to whether these efforts have induced high risk-taking behaviour in banks that led to financial system instability. Excessive competition triggered through deregulation efforts was highlighted as contributing factors to the financial sector meltdown in the US and elsewhere (Ibrahim & Rizvi, 2018; Khan et al., 2017; Liu et al., 2012). However, a clear conclusion of the relationship between bank competition and bank risk-taking behaviour is yet to be arrived and is under increasing debate among scholars (Dick, 2006; Liu et al., 2012). For example, Pozo and Rojas (2020) and Davis and Karim (2019) emphasised that competition exacerbates banks risk-taking which damages the financial system stability. In contrast, Clark et al. (2018) and Jayaratne and Strahan (1998) suggest that in markets with high bank competition, the probability of failure is low, enhancing financial system stability.

With its overwhelmingly dominant position in the financial markets, the efficient functioning of banking institutions is an essential element in the financial system stability of Sri Lanka (Central Bank of Sri Lanka [CBSL], 2019). This significance of banks poses a major threat to the economy of a developing country like Sri Lanka in case of a bank failure. Banking system failures and instabilities that were witnessed from time to time in the country raised serious concerns on the financial system stability. High risk exposures and mismanagement were identified as the main

contributing factors for the collapse of the Pramuka bank in 2002 and Seyaln bank in 2008 (Abeysinghe, 2015). Thus, an investigation of the bank competition and risk exposure is a timely need in the context where this has received less attention in terms of empirical research. Taking Sri Lanka as an illustrative example of a developing country, this paper aims to contribute to the competition-stability debate by investigating the impact of bank competition on risk-taking behaviour in a panel of 15 commercial banks in the 2009 – 2019 period. The structure of this article is as follows. Section 2 offers a comprehensive understanding of the research issue and its significance. Section 3 is the literature discussion highlighting the research gap of the study. Section 4 covers the methodology the study has adopted. This includes the conceptual framework, research design, and the quantitative operationalisation. Section 5 reports the findings, and the paper concludes with a conclusion as presented in Section 6.

1.1 Research Problem

A stable financial system is vital for the smooth functioning of an economy (Jokipii & Monnin, 2013). Banks are constantly exposed to higher levels of risks due to the unique nature of the banking business (Soedarmono et al., 2013). The consequences of improper risk management by one particular bank are not simply limited to that bank itself. A collapse of one bank could harm public confidence towards the banking industry and may lead to a bank run, resulting in an economic crisis (Gilbert & Kochin, 1989). Hence, banks' risk appetite can be identified as a key factor of banking system stability and economic stability. Amongst the various factors that affect bank risk-taking behaviour such as: efficiency, revenue diversification, inflation and credit expansion (Son et al., 2015; Zheng et al., 2018), the impact of competition in the banking industry towards bank risk-taking cannot be neglected (Boyd & De Nicolo, 2005; Jimenez et al., 2013). Bankers are induced to pursue riskier investments to withstand the competition, which is further exacerbated by the highly leveraged nature of the industry (Deangelo & Stulz, 2015), high information asymmetry (Laeven & Levine, 2009), and the availability of deposit insurance scheme (Srivastav & Hagendorff, 2016). Despite the vital role of banks in developing countries' economies, studies to investigate the impact of competition on bank risk-taking behaviour are

relatively under-researched in the developing country's context (Liu et al., 2012) and particularly in Sri Lanka.

Being a bank-based economy, the stability of the banking system is a key determinant of the financial system stability in Sri Lanka. The banking industry plays a key role in the Sri Lankan economy as the main fund mobilisation mechanism. It accounts for nearly 72.5 % of the assets in the financial system as of 2020 (CBSL 2020). As of the end of 2020, the country's banking sector consisted of 26 Licensed Commercial Banks (LCBs), which dominate the banking sector, claiming 86.5% of the total sector assets. Competition in the banking industry is a key indicator of a country's banking sector development. An empirical study done by Liyanagamage (2018) revealed that the banking market in Sri Lanka is moderately competitive and above the minimum, level of competition which should prevail to support the economy's sustainable development, not the optimum. Although 26 commercial banks are actively operating, a handful of banks dominate the sector. Despite the dominance of those banks, the competition continues to rise with the variety of services offered by the different banks. Over a period of time, symptoms of an unstable banking sector were witnessed in the country's banking sector, including rising non-performing loans due to asset quality deterioration and bankers' struggle to maintain the required mandatory capital level (KPMG, 2019). A few small to medium-sized banks' perceived instability is allegedly stemming from the pressure created through competition (KPMG, 2020). Besides, two state banks, which are the two largest banks in the country are likely to have higher risk appetite given the government reliance on funding (Daily Financial Times, 2021). Although banking institutions play a significant role in the Sri Lankan economy, comprehensive studies to investigate the impact of competition on risk-taking behaviours of banks are scarce, and hence this topic is under-researched and under-theorised.

The opaque nature of the banks as financial institutions has fuelled a debate in the banking literature on the effect of bank competition on the banking sector stability. Conflicting results were documented by recent empirical work on the nexus between competition and stability (Clark et al., 2018; Pozo & Rojas, 2020). The stability of a bank is mostly determined by the level of risk exposure in the market (Smith et al., 2020). However, the conflicting empirical findings suggest the need for a further

investigation of bank competition and risk-taking behaviour to glean an understanding of bank stability. Thus, this paper aims to investigate the nexus between bank competition and risk-taking behaviour in the context of the commercial banking sector in Sri Lanka. The paper has two objectives. The first is to explore the nature of bank competition and the risk exposure of commercial banks. The second is to contribute to the risk-competition nexus by determining the relationship between market competition and bank risk; overall risk, credit risk and liquidity risk. More specifically, this paper attempts to understand whether the current level of competition is optimum in terms of the risk exposure of commercial banks as far as the stability of the banking sector is achieved.

2. Literature Review

Despite not being a mainstream research area, significant literature exists on the bank risk–competition nexus. The existing literature reveals a debate on how bank risk-taking is induced by competition. One strand of literature argues on a competition-fragility hypothesis suggesting that the high competition diminishes banks' market power, which subsequently leads to reduction of profitability. In response, banks are induced to assume a higher level of risk where banks are made fragile by the higher risk exposure (Anginer et al., 2014; Jimenez et al., 2013). On the other hand, it is also argued that higher market power resulting from lesser competition induces banks to charge a premium interest. Consequently, the risk of defaulting increases (Boyd & De Nicolo, 2005; De Nicolo et al., 2006). That strand of literature argues on a competition-stability hypothesis where competition forces banks to assume less risk by not charging a premium interest. Supporting the competition-fragility hypothesis, Jimenez et al. (2013) suggested a nonlinear convex relationship between competition and risk-taking in the Spanish banking industry. The researchers studied the impact of competition on bank risk-taking based on the franchise value paradigm approach. Herfindahl Hirschman Index (HHI) and Lerner Index were employed to operationalise competition where bank risk was operationalised through non-performing loans ratio. Anginer et al. (2014) suggested that banking systems in countries with weak supervision and private monitoring to be more fragile.

The findings also suggested competition could be mitigated through efficient public and private monitoring. Davis et al. (2019) also supported the competition fragility hypothesis by indicating a positive relationship between competition and risk-taking. Although results indicated a widespread impact of competition on banks' risk-taking behaviour, the competition had a more severe impact on risk-taking in emerging economies compared to advanced economies. Supporting the competition stability hypothesis, Boyd and De Nicolo (2005) suggested that risk-incentive mechanisms cause banks to become riskier when the market power increase. De Nicolo and Loukoianova (2007) also supported the competition-stability hypothesis by suggesting a positive relationship between high market power and the risk of bank failure. Interestingly, the findings of Hussain and Bashir (2020) supported both strands of literature. As per their study, in the Chinese banking industry, credit risk is positively related to market power, supporting the competition-stability hypothesis. However, the findings also indicated a negative relationship between market power and overall bank risk supporting the competition-fragility hypothesis.

Banks play a crucial role in the Sri Lankan economy, accounting for 70 % of the total assets of the financial system (CBSL, 2019). As at the end of 2019, the banking sector is comprised of 26 LCBs. The stability of the country's financial system is primarily dependent on the six largest commercial banks, which claim 75% of the banking sector assets (CBSL, 2019). Competition in the banking industry is a key indicator of a country's banking sector development. An empirical study done by Liyanagamage (2018) revealed that the banking market in Sri Lanka is moderately competitive. Above the minimum, level of competition should prevail to support the economy's sustainable development, not the optimum. Even though the publicly accessible studies conducted on bank risk–competition nexus in the Sri Lankan context is scarce, certain studies on similar areas can still be found. Liyanagamage (2018) studied the relationship between financial stability and a moderately competitive banking market based on the Sri Lankan banking sector. By analysing the data set covering 1996-2010 through Panzar and Rosse H statistics, the researcher suggested a U-shaped relationship between competition and banking system stability. The study did not specify an optimum level of competition and suggested a minimum level of competition would be ideal for the Sri Lankan banking industry to promote the efficiency and stability of the banking

system. Wanniarachchige and Suzuki (2010) have explored the relationship between competition and efficiency of Sri Lankan banks using the Data Envelopment Analysis and the HHI. The researchers suggested that the enhanced efficiency was largely due to the adoption of new technology by domestic banks and the success of restructuring programmes at state-owned banks'. The HHI results indicated reduced market concentration in the period under investigation, reflecting an increase of competition. Besides bank competition, numerous studies were conducted in the Sri Lankan context to explore banks' risk-taking behaviours (see Fernando & Nimal, 2014; Fernando & Siriyalatha, 2015; Piyananda et al., 2015). However, empirical studies to explore the relationship between bank competition and risk-taking behaviour in the Sri Lankan context continuous to be scarce. By combining the bank competition and risk-taking behaviour, this study is one of the initial efforts to address this empirical gap in the literature.

3. Methodology

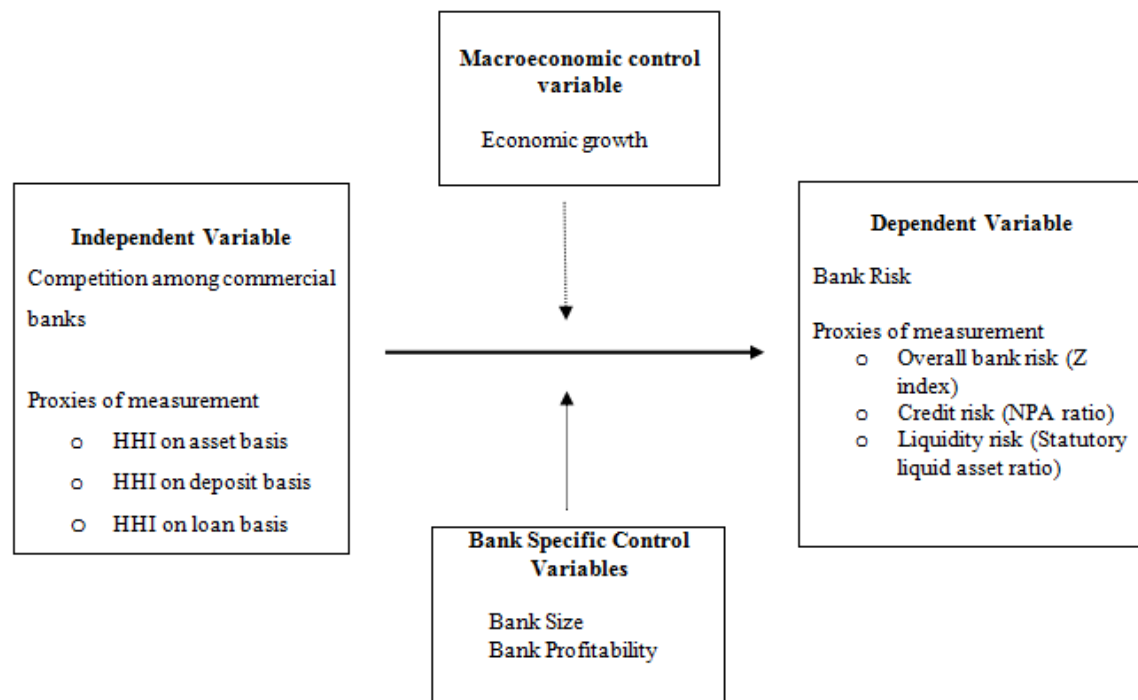
The research was carried out as an explanatory study to establish and explain the relationship between the variables; bank competition and risk-taking behaviour of Sri Lankan commercial banks. Given the nature of the research issue and objectives, a quantitative research design is the best approach to adopt as it facilitates arriving at conclusions based on a large sample of actual data (Saunders, et al., 2009). The study relied on secondary data obtained from the financial reports of 15 commercial banks, covering 11 years from 2009 to 2019. This selected period of time represents the most competitive period for the banking industry in the country, with the conclusion of the 30 years terrorist war in 2009. Based on the availability of data, the sample consists of 13 local and the two largest foreign commercial banks.

The study has employed the HHI, which is commonly used to measure market competitiveness and the Z index. Employing HHI, the study's independent variable, market competition was measured through three proxies; asset base, deposit base, and loan base. These are widely considered in measuring concentration by Berger et al. (2009), Wanniarachchige and Suzuki (2010) and Hussain and Bashir (2020). Z index was employed for operationalising the dependent variable: bank risk (Berger et al. 2009; Drakos et al., 2016; Hussain & Bashir, 2020). Three proxies were used to

measure the dependent variables: credit risk, liquidity risk and overall bank risk (Berger et al., 2009; Davis et al., 2019; Piyananda et al., 2015). Bank size and profitability were used as bank-specific control variables, where economic growth rate was used as a macro-economic control variable to capture the sensitivities that may affect banks' risk-taking behaviour. The analysis was based on an unbalanced panel due to data unavailability of certain banks for the 11 years considered. Thus, two separate data panels were formed. Panel A consists of all the 15 banks in the sample used to analyse overall bank risk and liquidity risk. Panel B was formed after eliminating one bank with missing data of NPA. Thus, the sample banks' credit risk was analysed using panel B. Variables considered in this study, including independent and dependent, are illustrated in the following conceptual framework.

Figure 1

Conceptual framework



Source: Researchers' Construction (2021)

3.1 Econometric Model

To investigate the impact of bank competition on the risk-taking behaviour of commercial banks, which is the main aim of this study, an econometric model was adopted as used by Hussain and Bashir (2020) on examining the risk-competition nexus

of the Chinese banking industry. The equation was adopted after simplifying the original equation. Hussain and Bashir (2020) had included a “Market Structure Squared” term as they extended their analysis to the second derivative of the market structure. However, this study was not as sophisticated. Hence, the term “Market Structure Squared” was eliminated from the equation.

$$Risk_{it} = \alpha + \beta_1 Risk_{it-1} + \beta_2 MS_{it} + \beta_3 BSC_{it} + \beta_4 MSC_{it} + \varepsilon_{it} \quad (1)$$

The subscript “i” represents the bank and “t” represents time dimension in the equation. Where ‘Risk’ is the principal dependent variable, Market Structure (MS) is the principal independent variable. Macro-economic Control (MSC) and Bank-specific Control (BSC) are used as control variables in exploring the competition-risk relationship in the Sri Lankan banking industry. The error term is represented by “ε”.

By applying this econometric model, this study tries to examine two traditional hypotheses in bank risk-competition literature (Berger et al., 2009; Carletti & Hartmann, 2002). Those are competition-fragility hypothesis and the competition-stability hypothesis. Under the competition-fragility view, more bank competition erodes market power and decreases profit margins which encourage risk-taking (Berger et al., 2009). Therefore, the study expects a positive relationship between bank competition and risk-taking. Under the alternative hypothesis, competition-stability view, banks with more market power result in greater bank risk exuberating through moral hazard and adverse selection problems (Berger et al., 2009; Carletti & Hartmann, 2002). This means less competition and more market concentration force banks to take high risks. With the competition-stability hypothesis, the study expects a negative relationship between bank competition and risk-taking. This paper tests these two established hypotheses in the risk-competition nexus (competition fragility and competition stability) by regressing measures of overall bank risk (Z index), credit risk and liquidity risk on several measures of bank competition based on assets, deposits and loan basis.

3.2 Variables Construction

Dependent variable (Bank risk)

The study used three proxies for the independent variable; bank risk. The proxies include the Z index to measure overall bank risk and non-performing advances ratio to measure credit risk and the statutory liquid asset ratio to measure liquidity risk. These proxies are widely used to measure bank risk in related studies (Hussain & Bashir, 2020; Jimenez et al., 2013). The Z-index that measures bank overall risk is constructed on the basis of three inputs: Leverage Ratio (LR), Return on Assets (ROA) and standard deviation of bank profitability. The mathematical formula of the Z-index is as follows,

$$Z\ Index_i = \frac{ROA_i + LR_i}{\delta(ROA)_i} \quad (2)$$

The leverage ratio for the Z index was calculated following the previous literature (Berger et al. 2009, Hussain & Bashir, 2020) using the formula given in the equation 3.

$$Leverage\ Ratio_i = \frac{Total\ Equity_i}{Total\ Assets_i} \quad (3)$$

The Non-Performing Advances (NPA) ratio is widely used as a proxy for credit risk in literature (Berger et al., 2009; Davis et al., 2019; Piyananda et al., 2015). This study also employed this NPA ratio to measure the credit risk variable as ratio of impaired loans to total loans. Liquidity risk was measured using statutory liquid assets ratio, a proxy derived from Sri Lankan literature (Piyananda et al., 2015). The statutory liquid assets ratios that the banks disclosed as the percentage of liquid assets to total assets in their annual reports were extracted for the considered period.

Independent variables

Three structural proxies were used to measure competition in the market structure (MS). These are HHI based on assets, HHI based on deposits, and HHI based on loans. HHI is used to measure market concentration where a higher value means high

market power and less competition. It is an inverse measure of competition. HHI is defined in general form as given below.

$$HHI = \sum_{i=1}^N S_i^2 \quad (4)$$

Where subscript “N” represents number of banks in the industry and subscript “ S_i ” represents the market share of the bank “i” in the industry.

Control variables

Two control variables are included in equation (1); bank-specific controls and macro-economic controls. Bank-specific controls include bank size and bank profitability. Bank size is measured as the natural logarithm of total assets, while bank profitability is measured using pre-tax returns on total assets. The macro-economic environment can have a significant impact on bank risk. The study has used the gross domestic product (GDP) growth rate to control the economic environment.

Before presenting the results, the list of abbreviations used to refer the variables in the study is listed in Table 1.

Table 1

List of abbreviations

Abbreviation	Definition
LNZ	Natural log of Z index
NPA	Non-performing advancesratio
SLAR	Statutory liquid assets ratio
HHIA	HHI on asset basis
HHID	HHI on loan basis
HHIL	HHI on loan basis
ROA	Return on assets ratio
LNTA	Natural log of total assets
EGR	Economic growth rate

4. Data Analysis and Discussion

4.1 Descriptive Statistics

The descriptive statistics with regards to panel A and panel B are stated in the Table 2 and 3 respectively. The fact that, sample B is a sub sample of sample A is reflected by similar descriptive statistics of the dependent variables in both the samples.

Table 2

Descriptive statistics for panel A

Variable	LNZ	SLAR	HHIA	HHID	HHIL	ROA	LNTA	EGR
Mean	3.5607	0.2829	0.1438	0.1350	0.1244	0.0214	19.2902	0.0493
Std. Dev.	0.8550	0.1140	0.0148	0.0416	0.0352	0.0130	1.2577	0.0218
Maximum	5.9580	0.9327	0.1663	0.1781	0.1614	0.0581	21.6050	0.0915
Minimum	1.7440	0.2019	0.1276	0.0329	0.0360	-0.0373	15.7252	0.0230
Observations	143	143	143	143	143	143	143	143

Table 3

Descriptive statistics for panel B

Variable	NPA	HHIA	HHID	HHIL	ROA	LNTA	EGR
Mean	0.0454	0.1443	0.1348	0.1244	0.0213	19.2721	0.0497
Std. Dev.	0.0404	0.0147	0.0421	0.0357	0.0131	1.2711	0.0219
Maximum	0.3361	0.1663	0.1781	0.1614	0.0581	21.6050	0.0915
Minimum	0.0000	0.1276	0.0329	0.0360	-0.0373	15.7252	0.0230
Observations	139	139	139	139	139	139	139

The descriptive statistics provided insights into bank risk and competition in the Sri Lankan commercial banking industry. Mean value of 3.56 (panel A) indicates a moderate level of risk. Previous studies employing the same index had reported a mean value in the range of 3-3.2 (Hussain & Bashir, 2020). Similarly, mean value of 4.54% for NPA (panel B) suggests a moderate level of credit risk. The highest reported NPA ratio during the 11 years from the subjected banks was 33.61%. The liquidity level of the sample banks (panel A) with the mean value of 28.2 % for SLAR is well over the statutory required minimum ratio (20%). The minimum reported SLAR of 20.19% reflects that none of the subjected banks has failed to maintain the statutory minimum liquidity requirement. A lower level of market concentration is indicated by the mean

values below 0.15 of the three HHIs (Hayes, 2020). This means that the competition is moderately high in the Sri Lankan commercial banking industry but not extreme.

4.2 Correlation Matrices

Pair-wise correlation between the variables in the two panels is stated in Table 4 and 5.

Table 4

Correlation matrix for panel A

Correlation	LNZ	SLAR	HHIA	HHID	HHIL	ROA	LNTA	EGR
LNZ	1							
SLAR	0.0889	1						
HHIA	-0.0849	-0.0299	1					
HHID	0.1067	0.1702*	0.2927**	1				
HHIL	0.0928	0.1655*	0.3634**	0.9906**	1			
ROA	0.1988**	0.0995	-0.0767	-0.1178	-0.1166	1		
LNTA	0.0151	-0.2315**	-0.2424**	0.0183	-0.0056	0.3386**	1	
EGR	-0.0459	-0.1529*	0.4608**	-0.4313**	-0.3736**	0.1549*	-0.1803*	1

***significance at 1% (p value), ** significance at 5% (p value), *significance at 10% (p value)

Independent variable LNZ indicates a weak positive correlation with the dependent variables HHID and HHIL. Given that both LNZ and HHI are inverse measures of bank risk and competition, the correlations indicate a positive relationship. However, the correlation between LNZ and HHIA indicated a negative relationship between competition and overall bank risk. The independent variable SLAR also had contrasting correlations with the three proxies of market concentration. The correlation between SLAR and HHIA is positive. A positive relationship between liquidity risk and

competition was indicated by the correlations of SLAR with HHID and HHIL. As per correlations, overall bank risk indicated a weak negative relationship with ROA and bank size, where the relationship is a weak positive one with economic growth rate. Liquidity risk indicated negative relationships with bank size and economic growth rate where ROA is positively related.

Table 5

Correlation matrices for panel B

Correlation	NPA	HHIA	HHID	HHIL	ROA	LNTA	EGR
NPA	1						
HHIA	0.2054**	1					
HHID	0.0684	0.3029***	1				
HHIL	0.0714	0.3718***	0.9910***	1			
ROA	-0.1718**	-0.064	-0.1205	-0.118	1		
LNTA	-0.1568*	-0.2320***	0.0156	-0.0069	0.3350**	1	
EGR	0.0075	0.4517***	-0.4306***	-0.3750***	0.1644*	-0.1720**	1

***significance at 1% (*p* value), ** significance at 5% (*p* value), *significance at 10% (*p* value)

As per the correlation matrices of panel B, a weak negative relationship was indicated between credit risk and market competition, as HHI is an inverse measure of competition. ROA and bank size indicated a negative relationship with credit risk while economic growth rate is positively related. In both the panels, a high correlation are indicated between variables; HHID and HHIL. Even though both of those are independent variables, no multicollinearity problem arose. HHID and HHIL were not estimated together in the same equation as they are different proxies of market concentration.

4.3 Stationary of Variables and Testing of Assumptions

Multiple unit root tests were performed to confirm the stationary of the data. The stationary of data needs to be confirmed as the statistical properties of non-stationary data become invalid. The summary of different tests was obtained from Eviews. The

conclusion of stationary was arrived at when majority of the tests indicated stationary. Most of the variables were stationary on level data, where certain variables were stationary on 1st difference and 2nd difference. The results of the unit root tests are attached in appendix A. The tests performed on the validity of assumptions, such as the normality test and the heteroskedasticity test are attached in appendix B.

4.4 Regression Analysis

Separate regression estimations of equation (1) were made with regard to each proxy of the dependent variable. Here onwards, estimations are made on proxies; HHIA, HHID and HHIL are referred to as specifications I, II and III, respectively.

Z index as the dependent variable

As shown in Table 6, the lagged dependent variable (Z index) was significant at a 1% level in all three specifications. Z index is an inverse measure of overall bank risk where an increase in the index would mean a decrease in the level of risk. HHI is a measure of market concentration, which inversely measures the competition. A higher value for HHI would mean a higher level of market concentration but less competition. The variable; market concentration was not significant in specification I, where it was significant at 5% and 10% levels (*p*-value) in specification II and III, respectively. Being an inverse measure, an increase in LNZ indicated a decrease in overall bank risk, and an increase in HHI indicated a decrease in competition. Hence a positive relationship between market concentration and overall bank risk supports the competition-stability view in bank risk-competition nexus (Boyd & De Nicolo, 2005; De Nicolo et al., 2006; Fu et al., 2014).

Table 6

Regression results on overall bank risk

	Specification I (HHIA)	Specification II (HHID)	Specification III (HHIL)
Constant	2.2685* (1.3637)	2.5833** (1.1543)	2.6015** (1.1576)
Lagged dependent variable	0.5243*** (0.0719)	0.5145*** (0.0696)	0.5152*** (0.0698)
Market Concentration	6.0440	3.2440**	3.5812*

	(5.1331)	(1.5619)	(1.8165)
Return on Assets	16.5908***	16.3332***	16.3806***
	(5.7467)	(5.6581)	(5.6689)
Ln Total Assets	-0.07652	-0.0802	-0.0802
	(0.05626)	(0.0555)	(0.0556)
Economic Growth rate	-6.3861*	-1.7865	-2.3264
	(3.4706)	(3.1040)	(3.0365)
R-squared	0.3621	0.3769	0.3748
Adjusted R-squared	0.3360	0.3514	0.3491
F – statistic	13.8524	14.7597	14.6275
Probability (F-statistic)	0.0000	0.0000	0.0000
Durbin-Watson stat.	1.8081	1.8567	1.8585
***significance at 1% (p value), ** significance at 5% (p value), *significance at 10% (p value)			

The control variable ROA established significant positive relationships with the dependent variable across all three specifications. That indicated a negative relationship between overall risk and profitability, supporting the view in the literature suggesting that profitable banks face a lower level of risk (De Jonghe et al., 2013; Mongid & Muazaroh, 2017; Shetty & Yadav, 2019). No significant relationship was established by the variable Ln Total Assets, where the economic growth rate was significantly related only in specification I. The negative relationship with inverse measure LNZN suggested that the overall bank risk exposure is likely to decline in favourable macro-economic conditions. The above finding is also backed by the literature (Bohachova, 2008; Karim et al., 2016). As per the adjusted R – squared values, all three specifications explained nearly 35% of the variations in the dependent variable through the explanatory variables and all the three models were statistically significant at 1% (p value) level.

The constant terms remained significant even after controlling for the bank specific and macro-economic control variables (see Appendix c). However, the coefficients of the constants weakened substantially. The coefficients of lagged dependent variables remained significant in all three specifications while being marginally strengthened. That indicated a slight moderating impact of bank- specific and macro-economic factors on the year on year overall bank risk. Once again, the coefficients of market concentration were significant only in specifications II and III. The coefficients were

weakened after controlling for bank size, profitability and economic growth rate suggesting a stronger negative relationship between competition and bank risk in the actual environment compared to a controlled environment.

NPA ratio as the dependent variable

The relationship between credit risk and market concentration was analysed using the NPA ratio as the proxy measure. Equation (1) was estimated using panel B sample, omitting one bank from the panel A sample in the absence of data related to the dependent variable, NPA. The regression output is presented in Table 7. The lagged dependent variable was highly significant across the three specifications. The results indicated a strong positive relationship between year on year credit risk levels. The coefficients of lagged dependent variables suggested that the current year NPA ratio could be increased by 1% in response to a 0.7% increase in the previous year's NPA ratio. Market concentration was significantly and negatively related to the NPA ratio across the three specifications. The coefficients suggested that NPA ratio could be increased by 1% in response to a 0.2 decrease (as per specification I) or 0.1 decrease (as per specifications II and III) in HHI. Hence, the findings supported the competition-fragility strand of literature, indicating a positive relationship between credit risk and the competition (Berger et al., 2009; De Jonghe et al., 2013; Jimenez et al., 2013).

Table 7

Regression results on credit risk

	Specification I (HHIA)	Specification II (HHID)	Specification III (HHIL)
Constant	0.0709*** (0.0256)	0.0582*** (0.0222)	0.0589*** (0.0221)
Lagged dependent variable	0.7018*** (0.0317)	0.7002*** (0.03108)	0.6989*** (0.0310)
Market Concentration	-0.1872* (0.1013)	-0.0756** (0.03112)	-0.0908** (0.0359)
Return on Assets	-0.2706** (0.1139)	-0.2573** (0.1123)	-0.2601** (0.1121)
Ln Total Assets	-0.0010 (0.0011)	-0.0009 (0.0011)	-0.0009 (0.0011)
Economic Growth rate	-0.1704** (0.0700)	-0.2936*** (0.6576)	-0.2842*** (0.0640)

R-squared	0.8281	0.8253	0.8260
Adjusted R-squared	0.8143	0.8180	0.8187
F – statistic	109.7702	112.4887	112.9949
Probability (F-statistic)	0.0000	0.0000	0.0000
Durbin-Watson stat.	1.5922	1.7179	1.7383
***significance at 1% (p value), ** significance at 5% (p value), *significance at 10% (p value)			

Amongst the control variables, both the Return on Assets ratio and economic growth rate indicated a significant negative relationship with the NPA ratio. The negative relationship between NPA and ROA suggested that well-performing banks are faced with a low level of credit risk compared to poorly performing banks (Hallunovi & Berdo, 2018; Mei et al., 2019). The variable, LNTA was significant in neither of the specifications. The negative relationship between EGR and NPA indicated that credit risk is likely to decrease when the economy performs well. All the three specifications explained nearly 82% of the variations in NPA ratio, as indicated by the adjusted R-squared value where they were significant at 1% (*p*-value) level. After controlling for bank-specific and macro-economic factors (see Appendix D), the lagged dependent variable weakened marginally while remaining significant. Hence, the results suggested that the relationships between year on year credit risk levels are subject to conditions specific to the bank and well as macro-economic conditions, yet the impact is very small.

SLAR as the dependent variable

Statutory liquid assets ratio was employed as a proxy for liquidity position to analyse the relationship between liquidity risk and competition. The equation (1) was estimated on panel A separately, using the three proxies; HHIA, HHID, and HHIL. The regression output is presented in Table 8. Again, the lagged dependent variable was highly significant in all three specifications suggesting a strong positive relationship between year on year liquidity positions. However, none of the other explanatory variables were significant in specifications II and III. Hence no evidence was found on a relationship between liquidity risk and competition in any of the three specifications. The significant relationship between economic growth rate and SLAR suggested that liquidity risk is likely to increase in a poorly performing economy. All three specifications were

significant at 1% (p -value) while explaining nearly 38% of the variation in the dependent variable.

Table 8

Regression results on liquidity risk

	Specification I (HHIA)	Specification II (HHID)	Specification III (HHIL)
Constant	0.1471 (0.1740)	0.2111 (0.1548)	0.2103 (0.1549)
Lagged dependent variable'	0.5742*** (0.0721)	0.5689*** (0.0730)	0.5690*** (0.0730)
Market Concentration	0.5581 (0.6124)	0.1026 (0.1949)	0.1222 (0.2260)
Return on Assets	-0.7788 (0.7432)	-0.8227 (0.7428)	-0.8198 (0.7431)
Ln Total Assets	-0.0032 (0.0074)	-0.0037 (0.0074)	-0.0037 (0.0074)
Economic Growth rate	-0.7378* (0.4291)	-0.4080 (0.3871)	-0.4727 (0.3788)
R-squared	0.4057	0.4030	0.4030
Adjusted R-squared	0.3814	0.3785	0.3785
F – statistic	16.6584	16.4734	16.4786
Probability (F-statistic)	0.0000	0.0000	0.0000
Durbin-Watson stat.	1.7358	1.7224	1.7245
***significance at 1% (p value), ** significance at 5% (p value), *significance at 10% (p value)			

The regression output after controlling for bank-specific and macro-economic factors (See Appendix E) shows no significant relationship between competition and liquidity risk. However, the lagged dependent variable remained significant without indicating a substantial deviation.

4.5 Discussion of Results

Supporting the competition-fragility hypothesis, suggested by several previous researchers (Berger et al., 2009; Davis et al., 2019; Hussain & Bashir 2020; Jimenez et al., 2013), this study has observed a significant negative relationship between market

concentration and credit risk. This means that bank competition results in high credit risk exposure. However, the findings contradict the competition-fragility hypothesis in terms of overall bank risk and liquidity risk exposures, suggesting that more market power (less competition) results in higher risk exposures. As mentioned by Berger et al. (2009), this is because of the moral hazard and adverse selection problem which exist in banks with concentrated market powers. Therefore, findings in relation to overall bank risk and liquidity risk support the competition-stability hypothesis, proposed by the opposite strand of the literature (Boyd & De Nicolo, 2005; De Nicolo et al., 2006; Fu et al., 2014). As confirmed by the findings, both the hypothesis has received some degree of empirical support using different measures of bank risk exposures with bank competition and/or market power in terms of market concentration.

The persistent nature of bank risk was highlighted by the significant positive coefficients of the lagged dependent variable. The coefficient of ROA indicated a negative relationship between the profitability and bank risk exposure, supporting the strand of literature suggesting that less profitable banks may accept higher risk to be more profitable (De Jonghe et al., 2013; Mongid & Muazaroh, 2017; Shetty & Yadav, 2019). EGR was significant and negatively related to LNZ in specification I, indicating a positive relationship between economic growth and bank risk exposure. The lagged dependent variable (Table 7), indicates the strong persistence of credit risk (Islam & Nishiyama, 2019) which is evident in the banking sector of the country for a considerable time period. Both the variables ROA and EGR were significant and negatively related to NPA in all the specifications, where the variable LNTA was significant in neither of the specifications.

The negative relationship between ROA and NPA suggested that high profitable banks are unlikely to pursue investments with high-risk exposures (Mei et al., 2019; Yousuf & Felfoldi, 2018). The negative relationship between EGR and NPA suggested that banks' credit risk tends to diminish in favourable economic conditions (Castro, 2013). SLAR did not establish a significant relationship with a market concentration in any of the three specifications. However, the argument in the literature suggests that liquidity risk could increase as a result of intense competition (Landskroner & Paroush, 2008).

As it was in relation to LNZ and NPA, the lagged dependent variable was significant and positively related to SLAR, indicating the persistency of liquidity risk from year to year. Apart from the lagged dependent variable, EGR in specification I was the only variable to establish a significant relationship with SLAR. The negative relationship between SLAR and EGR suggested that liquidity risk is likely to decline in an expanding economy. The outputs of the controlled regressions are included in the annexure. No significant deviations could be observed after controlling for ROA, LNTA and EGR. The slight deviations of the HHI coefficients suggested both credit risk and overall bank risk hold a stronger positive relationship with competition in a controlled environment.

5. Conclusion and Implications

This study has explored the relationship between competition and risk-taking behaviour of a sample of 15 commercial banks in Sri Lanka for eleven years from 2009 to 2019. Multiple proxies were used to measure independent and dependent variables; competition and bank risk. The competition was measured using Herfindahl Hirschman Index (HHI) on an assets, deposits and loans basis. The overall bank risk was measured using the natural log of Z Index, while non-performing advances ratio and statutory liquid assets ratio was used to operationalise credit risk and liquidity risks.

The results indicated that the intensive competition is likely to increase the credit risk exposure of Sri Lankan commercial banks, supporting the competition-fragility strand of the literature (Agoraki et al., 2009; Berger et al., 2009; Davis et al., 2019; Hussain & Bashir 2020; Huang & Lee, 2012; Jimenez et al., 2013;). However, no significant relationship was established between liquidity risk and market competition. The significance of market concentration was weakened in relation to overall bank risk after controlling for the bank specific and macro-economic factors, suggesting a strong positive relationship between overall risk and market concentration in the actual environment than in a controlled environment. The findings further suggested that banks' credit risk and liquidity risk are likely to increase in unfavourable macro-economic conditions. Market competition for banks in Sri Lanka is moderately high over the considered period of study in line with the findings of Liyanagamage (2018).

It was further established that banks in Sri Lanka maintained a stable liquidity position while the credit risk and overall risk exposure were moderately high. Finally, the study concluded that market competition also reduces the profitability of Sri Lankan commercial banks by further diminishing the market power. As a result, banks are induced to pursue riskier investments in order to enhance profitability. Eventually, the intensive competition increases the risk exposure of the Sri Lankan commercial banks. The results confirm the competition-fragility hypothesis in relation to the credit risk and competition-stability hypothesis in relation to banks' overall risk and liquidity risk. Despite the benefits of a competitive market, excessive competition amongst banks could increase the credit risk exposure of individual banks and eventually make the banking sector unstable. This study contributes to the Sri Lankan literature on bank risk-taking and market competition by exploring an under-researched area. Further, the findings add knowledge to the extensive debate on risk-competition nexus in the global literature.

Although the study employed three aspects of the HHI to operationalise bank risk exposure, future researchers could use other proxies such as Lerner Index to explore the competition-bank risk relationship on a different dimension. This study did not establish a significant relationship between competition and liquidity risk. Future researchers can test different proxies to measure liquidity risk to establish a relationship with bank competition. The scholars could also conduct an in-depth analysis of bank competition with other types of bank risk exposures. The scarce literature on bank risk - competition relationship in a developing country's context would welcome all kinds of contributions.

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HEALTHCARE AND BALANCED SCORECARD FUSION: EVIDENCE FROM A PRIVATE SECTOR HOSPITAL IN SRI LANKA

Radampola, S.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka
shash966030@gmail.com

Gooneratne, T. N.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka

Abstract

Contemporary healthcare organisations while have become more conscious about their performance with the elevated competition in the industry, have also realised the need to look beyond financial numbers in evaluating performance. Within this backdrop, this paper reports on a Balanced Scorecard (BSC) experience in a private sector hospital in Sri Lanka. More specifically, it explores how and why the BSC has been successfully translated into practice in the organisation. It employs the qualitative methodology and single case study approach. The data has been collected through in- depth interviews, as well as externally published documents and internal records, and have been analysed by drawing on actor-network theory (ANT). The findings from our case study data reveal a success story of how the BSC has been integrated with work practices of the hospital, across its administrative and functional stratas. It was also found that such a positive integration of the BSC has been possible due to the collective efforts of human and non- human actors. The findings of this paper have both theoretical as well as practical value. It contributes to management accounting literature, especially the stream of BSC studies by illuminating a story of a successful BSC drawn from the healthcare context in Sri Lanka and offers insights to practicing managers on effectively integrating a BSC into the work practices of an entity.

Keywords. Balanced scorecard, Success, Hospital, Actor-network theory, Translation process

1. Introduction

Given the dynamics in the industry and the changing nature of operations in today's healthcare organisations, amid the pressure to reduce cost, improve quality of healthcare and meet stringent guidelines, they have been forced to re-examine how they evaluate performance (Meena & Thakkar, 2014). While measuring performance in healthcare is complex and challenging, it has become a growing concern among the entities of this sector. Amid numerous performance measurement tools, the Balanced Scorecard (BSC) has been subjected to wide advocacy. As the pioneers of this tool emphasise, the BSC is centred on the idea of providing a holistic view of business performance. It has thus been promulgated as a performance management tool which moves beyond financial metrics by capturing customers, internal processes, and learning and growth, in addition to financials (Kaplan & Norton, 1992). Over its course of development, the BSC has progressed from a performance measurement tool to one that captures strategy. In that sense it is used as a means to execute and communicate strategy as well as to cater to multiple stakeholder objectives in the face of changing business environments (Kaplan & Norton, 1992, 1996, 2001).

Over a period nearing three decades, the BSC has marked its presence across number of industries, and healthcare has been no exception. However, most of the prevailing BSC literature draws evidence from public sector healthcare services within developed economies (Funck, 2007; Lachmann et al., 2013; Smith & Loonam, 2016; Yuen & Ng, 2012). However, such studies provide little insights on BSC experiences in the developing world as well as in private sector entities, for understandably there are contextual differences across the developed and developing countries as well as public and private sector, and such differences are bound to give rise to different forms of BSC across varying entities. Addressing this omission, this study draws evidence from Nebula, a private sector hospital in Sri Lanka, and illuminates how the BSC has blended with the organisation's work practice. More specifically the paper addresses the following research questions; How has a private healthcare organisation incorporated the BSC into their work practice? what led to the infusion and what are the distinctive characteristics of the BSC practices in the case study hospital? Inquiry into such an integration of the BSC to work practices although important, to date has been subjected to scant attention by past scholars.

The rest of this paper is structured as follows: section two reviews prior related literature. Section three outlines the research context as well as the methodology adopted, along with the theoretical lens. Field study evidence is offered in Section four. Section five presents a discussion of findings and conclusion.

2. Literature Review

This section provides a glimpse on prior literature on the evolution and popularisation of the BSC as well as healthcare and BSC interface.

2.1 Evolution and Popularisation of the BSC

While BSC was initially posited as a tool to address the limitations of traditional financial focused measurement systems, it has evolved profoundly over the years. As Dechow (2012) points out from an improved performance measurement tool in 1992, to a strategic management system in 1996, strategy focused organisation in 2001, strategy map in 2004 and as a tool for corporate- wide strategic alignment in 2006. As expressed by Kaplan and Norton (2004), the BSC is not merely a collection of financial and non-financial measures, it is derived from the organisation's vision, and is a mean to translate it into a set of key performance indicators, while forming the foundation for the strategic management system of a firm. Since the underlying logic of the BSC is meaningful, numerous attempts have been made by organisations to implement it. Literature suggests that successful implementation of the BSC requires commitment and support from the top of management (Chavan, 2009) and that it can be used as a means to communicate and control strategy (Malina & Selto, 2001). Literature thus notes the importance of ensuring a link between the BSC and the firm's strategic objectives (Deshow, 2012; Kaplan, 2004; Kaplan; 2012; Porporato et al., 2014). Firms may thus adopt the BSC due to different motives, such as to translate strategy into action, manage organisational change, implement quality programmes and win awards for excellence in quality; due to managerial fads and fashions; and as a means to abandon traditional budgetary control (Malmi, 2001).

BSC literature is rich with examples drawn from various contexts across diverse service industries and firms, for instance, banking (Davis & Albright, 2004; Galveri & Karassavidou, 2011; Gooneratne & Wijesundara, 2016) telecommunications (Nzure &

Nyaega, 2013; Thananchayan & Gooneratne, 2018) hospitality and tourism industry (Sainaghi, 2010) Such implementations have ended in different fates, while some have succeeded, others have had turned out to be a “short-term guest” rather than a “long term resident” (Brown & McDonnell, 1995). The social, political and economic realities encountered may shape the way BSC is conceptualised and practiced in a particular organisation and the BSC tends to be context dependent (Deshow, 2012; Modell, 2012), and private sector healthcare context seems to be underrepresented within available BSC studies.

2.2 Healthcare and BSC

Baker and Pink (1995) argue that the BSC is relevant to hospitals, and Kaplan and Norton (2001) demonstrate how the BSC could be implemented in non-profit, governmental and healthcare organisations. Aidemark (2001) argue in favour of the adoption of BSC for it would enable to take into account patients, healthcare processes and professional staff learning, in addition to financials. This is important as over emphasising financial controls leads to neglecting other healthcare goals, which would profoundly affect hospital performance (Aidemark, 2001; Yuen & Ng, 2012). Nevertheless, the adoption of BSC in the health sector appears to be less prevalent, and as Gurd and Gao (2008) argues even though the focus of healthcare services are patients, the needs of patients or customer perspective has not reached the central focus in healthcare through BSCs. Implementing it seems challenging (Chan, 2009), particularly, due to the intangible nature, being a service provider where care and professionalism is vital, with measuring performance is difficult (Padma et al., 2009). Furthermore, it is noted that healthcare organisations being professional organisations, in which the medical profession has the main influence, with the dominance of professional logic, managerial instruments are not usually welcomed (Funck, 2007; Mintzberg, 1993).

Notwithstanding the above, the BSC has been embraced by a number of healthcare organisations (Grud & Gao 2008; Zelman et al., 2003), predominantly in public healthcare service within developed economies (Funck, 2007; Kollberg & Elg, 2011; Lachmann et al., 2013; Smith & Loonam, 2016; Yuen & Ng, 2012; Zelman et al., 2003). The work of Bobe et al. (2017) which draw evidence from a developing economy,

specifically from an Ethiopian context is a notable exception. It focuses on the BSC within the public sector exploring the institutional reasons instigated by the New Public Management (NPM) movement. See Hood (1995). In light of the above, although important, there is limited studies focused on the BSC within private healthcare settings, Addressing this omission, this paper explores how the BSC has got successfully intertwined with the organisational work practices in the context of a private sector healthcare entity.

3. Research Site, Methodology and Theory

3.1 Research Site: Nebula Hospital

The Sri Lankan healthcare system is predominantly run by the public health sector, which is funded mainly through government revenue and without charging a fee from users. However, amid the rising demand for healthcare services, it has become lucrative business and a number of private sector healthcare institutions also occupy a prominent position in the industry. The presence of the private sector healthcare entities has been concentrated in urban areas of the country (Annual Health Bulletin, 2017).

The hospital under study, Nebula is part of a prominent conglomerate within Sri Lanka, and was incorporated over 12 years ago as a private limited company. It has earned a reputation for ensuring superior customer experience and clinical outcomes as a leading healthcare provider. It caters to both in-patients and out-patients in a wide scale of specialties, such as orthopaedics, corporate medical screening, cosmetic centre, endoscopy and colonoscopy, cardiology, radiology, physiotherapy, rehabilitation, gynaecology, and fertility centre. Currently Nebula employs around 3000 employees and is headed by the Managing Director (MD) who is directly responsible to the CEO of the conglomerate. Under the MD is the General Manager of the hospital under whom the management team functions. In this entity it is noted that there are two lines of command through which goals and Key Performance Indicators (KPIs) are being cascaded, namely through functional and the administrative heads.

3.2 Methodology: Qualitative Case Study Approach

This study employs the qualitative methodology (Silverman, 2000) and case study approach (Yin, 2009) in shedding light on how and why the BSC has been translated

into successful tool through integration with the work practices in Nebula hospital, as this methodological choice appeared to be the most suitable based on the research questions explored in this study.

Keeping with this methodological orientation, the data collection for the study was initiated with a pilot interview done in October 2019, with the Head of Operations through which an overview about the hospital and a general understanding about the BSC and its perspectives were obtained. Building upon these initial insights the main study was conducted from February to September 2020. During this phase, interviews were conducted with functional heads and various documents, such as annual reports and newspaper articles were reviewed. The focus of the interviews in the main study was on the initial BSC implementation process, integration of the BSC within the work practices of the entity in different departments, pre and post BSC experiences, resistance and problems faced. Table 1 presents a list of interviewees. These interviewees were selected as functional heads, they are the key actors relating to the BSC implementation and operation process. They not only have significant influence in determining the KPIs of the BSCs, the goals and KPIs are being cascaded down to the lower-level employees through them. The duration of an interview ranged from 20 minutes to 1 hour and 45 minutes. Additionally, clarification and further insights were obtained through several rounds of telephone conversations with these different managers interviewed.

Table 1

List of interviewees

No.	Designation
1	Head of Finance
2.	Head of Operations
3.	Head of Human Resources (HR)
4.	General Manager
5.	Manager, Lean Facilitations
6.	Head of Supply Chain
7.	General Manager Marketing and New Business Development

Out of these interviewees, Head of Human Resources, General Manager, Manager Lean Facilitations as well as General Manager Marketing and New Business Development were in Nebula during the BSC implementation period as well. Manager, Lean

Facilitations is overseeing the work of the management accountant as this position is currently vacant. All interviews were tape recorded transcribed verbatim. Thereafter the data was analysed drawing on ANT following the key human and non-human actors of the BSC project.

3.3 Theoretical Lens: Actor-Network Theory (ANT)

This study is found upon the theoretical underpinning of Actor-network theory (ANT) (Latour, 1987, 1999, 2005; Law, 1991), which originated in the field of science and technology. ANT can be used as a theoretical aid to explore how an innovative idea or a management accounting tool, such as the BSC is diffused and becomes entrenched in a setting, i.e., the spread of the system and its transformation into an accepted practice (Bloomfield, 1991; Chua, 1995). Delving into how pioneering actors of an innovative idea would strive to promote and build alliances with other actors (Lowe, 2001), ANT captures the actions of actors, and the nature of networks. More importantly, from the perspective of ANT, a network comprises of heterogeneous actors, both human and non-human. It gives agency to humans and non-humans, and captures social and technical aspects in its analytical view, which is called generalised symmetry (Callon, 1986; McLean & Hassard, 2004). Thus, examples of actors include humans as well as non-humans such as systems, reports, awards, methodologies, concepts, texts, graphical representations, computers and other technical artefacts (Sarker et al., 2006), all of which essentially become part of a network.

In management accounting literature, ANT has been widely incorporated as a theoretical lens in exploring inter-organisational relationships (Chua & Mahama, 2007) as well as in investigations on intra-organisational relationships (Endenich et al., 2017). More particularly, Latour's sociology of translation has been used by researchers to examine the modeling of medical coding and case-mix accounting systems (Chua, 1995), budgeting systems (Ezzamel, 1994), management control integration (Dechow & Mouritsen, 2011) as well as implementation and localisation of new management accounting tools (Bobe et al., 2017; Briers & Chua, 2001; Sandhu et al., 2008; Wijerathne & Gooneratne, 2019). Accordingly, past research reveals how powerful actors shape organisational practices. Building upon such insights and viewing the BSC implementation as a process of actor network building, in this paper ANT has been

deployed to illuminate the BSC fusion with the work practices in the particular organisational context of a healthcare firm, Nebula.

3.4 Translation Process

Based upon ANT this study explores the diffusion of BSC and its incorporation with work practice building upon the translation process through which the innovation (BSC) is analysed within the context (work practice) in which it evolve. Translation denotes the means by which an actor enrolls others in the creation of an actor-network, entailing attempts by innovators to form a central forum (network), in which all actors agree that the network is worth building and defending. While been centred upon four moments problematisation, interessement, enrolment and mobilisation (Callon, 1986). Whereas problematisation refers to actor's effort to convince others to subscribe to their own view by showing they have the correct solutions it calls on external elements such as cultural and discursive resources (Ezzamel, 1994). Within Nebula, the collective monitoring of performance of different departments facilitates in bringing forward the (BSC) innovation thus illustrating actors' efforts to convince others by showing merits of the system/processes in a way that depicts its fitness. Interessement deals with the actions of getting other actors interested and convinced towards the innovation and thereby strengthens the links between various interests.

Enrollment is the creation of alliances with other actors, and the aim of which is to build up agreement among the stakeholders concerning their interests (Lowe, 2001). Latour and Woolgar (1979) believes that networks become stronger as they attract more human and non-human allies and an innovation becomes successful when it acquires a solid appearance. Finally mobilisation is the acceptance and been align with the innovation to act collectively. Furthermore Latour (1987) put forwarded the need to "follow the traces" that are produced as networks are build up. He notes that it is only by seeking to explain the way in which ideas have developed, how they have been made into facts enable us to understand how things come to be. In a similar note, in this study we follow the traces starting from idea origination. In accordance with that this study brings insightful evidence on this "trace following" and ultimately how the concept has been mobilised into Nebula's work practices. Thereby making BSC more of a fact or else a black box within case hospital operations, as clearly evident within the field

findings specifically through the direct incorporation of BSC into goal setting, employee grading and appraisal.

4. Findings from the Study

The data collected from Nebula Hospital revealed that BSC has been practiced over a decade, and that the BSC plays a pivotal role within the control space of the firm. It was also evident that while goal setting, employee grading, performance appraisal which occupy a significant position within the work practice of the firm has been interlinked with the BSC. We elaborate this next.

4.1 Origin and Implementation of the BSC

Nebula took BSC on board over twelve years ago as it realised the need for integrating performance measurement of different departments within the firm holistically through an overall framework that moves beyond financial indicators. Manager - Lean Facilitations, who was a member of the initiation team stated:

We wanted to have indicators measuring our performance, previously we were mostly measuring financial indicators, and from the clinical side clinical people were monitoring on the nursing. So, we wanted to have an overall framework which is capable of monitoring the performance of different departments focusing different areas, that's why we implemented BSC.

The rationale for implementing the BSC was brought in with an emphasis placed upon the need for a better performance framework. Eventually the firm recruited a Management Accountant for the specific responsibility of implementing BSC under the guidance of the finance department. Manager - Lean Facilitations further commented:

So, the team discussed among them the importance of the BSC, importance of measuring different indices, then had some brain storming sessions with different departments to come up with the important indicators, KPIs. At the same time, they were looking at some benchmarks outside also, with other hospitals.

He went on:

Based on these sessions, they came up with the initial set of indicators, then they started implementing department-wise. They initially selected the radiology department. Then they started implementing in other divisions as well

In ANT terms, the key actors provided familiarisation about the BSC by creating awareness of its merits across all departments of the organisation. This is evident by the comments of the General Manager who at that time was the Head of Marketing, and therefore was at the receiving end as a department head. He said:

Basically, there was training on the BSC, what it is, how does it help to measure the performance. Then for each department head they send a format, a BSC format to identify the measures under each perspective, then the next step was to discuss and agree on those measures with the other department heads and the management.

As these interview evidence suggests starting from the key actors, there was collective effort and direct involvement of all parties, including end-users in ensuring a smooth implementation process of the BSC in the hospital.

4.2 Perspectives, KPIs and Link to Goals

As often seem across many business entities in terms of the perspective selection, Nebula followed the four perspectives that was suggested by Kaplan and Norton (1996). See Table 2 for perspectives and KPIs.

Table 2

BSC perspectives and KPIs

Perspectives	KPIs
Financial	Revenue growth (inpatient and out- patient) Budgetary cost reduction Profitability Return on investment
Customer	Customer satisfaction (inpatient, out-patient, consultants) Customer experience Service quality
Internal business processes	Theater utilisation

	Theater efficiency
	Number of admissions
	Response rates
Learning and growth	Training hours
	Skills learnt
	Career growth
	Employee satisfaction

The resulting KPIs of Nebula were decided as a collective agreement between the respective department heads and the facilitators of the BSC. Commenting on the perspectives and KPIs, the Head of Finance stated, “so for each department we consider the relevant perspectives, and KPIs actually depends on that. He emphasised that KPIs differ according to different departments and that the KPIs are derived through target setting. See Table 3.

Table 3

Selective illustration of department KPIs

Department	KPIs
Pharmacy	Out -patient prescription time Customer satisfaction index Employee training hours Conversion rate
Nursing	Inventory accuracy Consultant satisfaction Re admission rate Infection control rates - Surgical infection rates Cannula side infection rates Customer satisfaction index
Radiology	No. of admissions Theater utilisation
Marketing	Campaign return on investment Campaign effectiveness
HR	Attrition rate Employee training and development HR cost – recruitment costs Employee satisfaction Career growth

On a similar note, Manager Lean Facilitations noted:

So we have linked our scorecard into the overall scorecard. We have a mechanism to weigh the importance as well, so for different indicators based on that only we did the merging part, I mean the hospital and the group level. Overall, what we are looking for is the balance, so we have allocated the balance based on our objectives aligned with our strategic goals

It is evident through these interviewee comments that by following the four perspectives prescribed by Kaplan and Norton, Nebula has devised KPIs as suited to the particular departments. Besides, the KPIs were annually revised and altered based on the strategic requirements specifically the changing business and functional requirements, while maintaining link between goals and KPIs. This was emphasised by several interviewees.

At Nebula goals are hierarchically flown down. Business level goals decided by the board of management would get passed on to the head of the institution, the General Manager. The General Manager then passes them to the subsequent levels, such as the business goals that need to be achieved within the financial year and then then to support their accomplishment, these goals are broken down and passed on to departmental heads through whom it gets further broken down to the executive level. For some functions there is a dual reporting line through which both administrative as well as functional goals gets cascaded down. Based on these annual goals, KPIs are derived at department level, and at individual level in order to support goal achievement. Elaborating on the goal setting process Head of HR stated:

Our MD is the top person of this particular business and when the goals are set for business level those goals will be cascading down from MD, then the General Manager then to the Department Heads like wise to junior executive level.

Head of Supply Chain commenting on her goals and KPIs noted the existence of a dual reporting line through which her goals are cascaded down functionally and administratively. She said:

I have an administrative reporting line as well as functional reporting line, so administratively, I report to the General Manager who is the hospital business head, and functionally, I report to Head of Supply Chain.

When goals get cascaded down both functionally and administratively a problem arises whether the goals would contradict each other. Therefore, arriving at KPIs based on the goals may also be problematic. Manager - Lean Facilitation explained:

In the annual budgeting process, we agree on the level of importance for different areas, so we agree on the financial goals and the weightages are also agreed. Based on that only we go ahead with measuring and keeping targets for different perspectives. We have a common discussion, and we get all the heads, functional and administrative heads into one forum.

As interviewees noted the current year KPIs of a department or an individual would be the basis upon which the next year's goals would be planned. Therefore, the KPIs of the BSC is a decisive element in goal setting process in Nebula.

4.3 BSC and Employee Performance Appraisal

The adoption of the BSC brought in many benefits to Nebula. Particularly, it has made a positive implication on employee performance appraisal. In the pre-BSC era the focus was only revenue, but with BSC adoption, Nebula started looking at the revenue more holistically. For instance, by breaking up the numbers and looking into other KPIs that was acting as catalyst in achieving the ultimate numbers. Therefore, the BSC implementation helped the organisation to look at the bigger picture and to look at the processes and procedures in a more meaningful manner. Manager Lean Facilitations stated:

When you started measuring, people start performing, if you do not measure, it is difficult to motivate, say in one department people are working at different levels, earlier it was difficult to distinguish the best performer from a normal performer or a low performer.

Accordingly, the BSC facilitated in bringing in better visibility and transparency and helped the management in identifying key performers of the organisation. This in turn

enabled in taking tailor made actions as suited to the scenario. As he further commented:

So, you can compare among departments, you can see the trend over time, whether there is a positive trend, and you can benchmark internationally, then you can identify the gaps and start taking action.

One of the most significant effects that BSC has resonated within Nebula's work practice is regarding performance appraisal and employee grading. Employee appraisal is a crucial aspect within the work practice of the firm. While non- executives did not have any visible KPIs, they were evaluated based on criteria's such as quality of work, the discipline, and customer feedback. However, executive level and above had specifically derived KPIs and goals allocated to them, hence the BSC was linked to their appraisal. Their appraisal was of two folds; a midyear review followed by a year-end review. Commenting on this Head of HR noted:

The BSC was used when setting financial/annual goals. Goal setting process would be done in the beginning of the financial year and there will be a mid-year review halfway down the financial year and then end of the year the final appraisal. There will be an evaluation cycle, and the final grade will be decided by the appraiser, appraise and the reviewer.

Accordingly, all these three parties who are involved in setting goals and KPIs at the beginning of the financial year gets involved in evaluating their outcomes and are held accountable with regard to the effective delivery of outcomes. In addition to these two reviews, there is a self-review that need to be fulfilled by everyone. Head of HR continued:

Quarterly, finance people get performance details from the departments, and they know the KPIs and whether the people have achieved or not well. If we could not hit the quarterly numbers we have to plan to achieve the next quarter number plus the deficit amount of the previous quarter, i.e. the year-to-date (YTD) before end of the next quarter. Ultimately it is the annual YTD figures that are considered for goal setting and appraisals.

It was evident that if the quarterly numbers are not met all parties involved would be held accountable and would be questioned by the management. It was also revealed that

quarterly, department level performance was presented to the MD, and if the department level KPIs are not met, the MD would question the department heads. Moreover, with the introduction of the BSC everyone was made aware how it was integrated to work practices through employee performance evaluation and employee grading, such as Outstanding, Very good, Good, Achieved standard, Marginal and poor. Head of HR elaborated:

With the BSC everyone knows that their performance will be monitored and periodically reviewed by the management. So, they know that they have to do their work properly and they have to share the data with the management, and that if they achieve those KPIs there will be good rating.

Our case study revealed that BSC based performance evaluation was crucial in the firm. For instance, while employees are graded based on their performance, salary increments, and bonus allocations were processed as per the gradings. Therefore, better the grade, higher the chances for an employee to gain an increment, plus a bonus. Other than been a determinant of salary increments and bonuses, as commented by Head of HR, grading also have a role in career development opportunities of employees. General Manager Marketing and New Business development also reinforced this point adding:

Career development opportunities are based on their performance grading, for example when we select people for leadership training etc., we evaluate their previous maybe last three years performance ratings.

Based on interviewee comments and analysis of the firm's document, it was apparent that Nebula conducts an awarding ceremony appreciating and recognising employees based on their performance. This includes awards for employee of the year, best performing unit of the year, best customer service unit of the year and so on, and these awards (as non- human actors in ANT terms), are significant, for they are given based on performance while are being aligned to the KPIs of the BSC. Accordingly, through the performance appraisal system, the BSC has been integrated to the work practices in Nebula.

4.4 Sustainability of the BSC

The field study evidence suggests that the BSC in Nebula has been sustained for a period over a decade. In this regard the BSC's interplay with other management tools and effectively managing resistance are noteworthy. The words of interviewees revealed that the BSC is interlinked with tools such as benchmarking and lean management. Through benchmarking Nebula attempts to be in par with local as well as global best practices. Commenting on this General Manager Marketing and New Business Development indicated:

After implementing BSC, we started looking at various KPIs under different perspectives, so it opened up the management's mind and they started benchmarking with industry best practices locally as well as globally. Then for example employee engagement, we started measuring employee engagement etc.

Moreover with the implementation of the BSC with performance gaps becoming quiet visible, when setting KPIs, in addition to evaluating previous year data, Nebula also draws promising KPIs from its sister hospital, by engaging in internal benchmarking. The Head of HR stated:

Sometimes in doing benchmarking we also do with our sister hospital in..., if for example inventory accuracy in hospital's operation theater is far better than Nebula's theater, then we get a clue that there may be something wrong in our system.

In order to promote lean practices, Nebula has integrated lean goals into their financial goals, through the BSC system. It was further revealed that in order to evaluate the effectiveness of lean projects that has been implemented in a given financial year, the BSC perspectives and data originated through the BSC was directly used.

Notwithstanding such positive implications, there is no implementation that is free from resistance nor without drawbacks and rivalry would exist in one way or the other in an organisation. While the need for constant push from the management was a recurring comment made by interviewees, interviewees of Nebula did not disclose such rivalries.

A possible explanation may be effective implementation through collaboration has overshadowed any rivalries.

Interviewees noted that at the beginning communicating about the BSC and how it should be integrated to the work practices was rather problematic, as most of the functional areas were unaware of the BSC. In this regard, Head of Finance commented that effective communication, conveying in a manner that can be easily grasped, and encouraging two-way communication was key in overcoming any resistance. He said:

The way you communicate is important if you just say in an email monthly, say ok this is the pharmacy BSC for the last month they do not consider, you have to use different language you have to say, ok this is where you were last year, whether there is improvement in this year. Otherwise, if you just put figures, they do not understand, you have to use an understandable language, so that they get motivated.

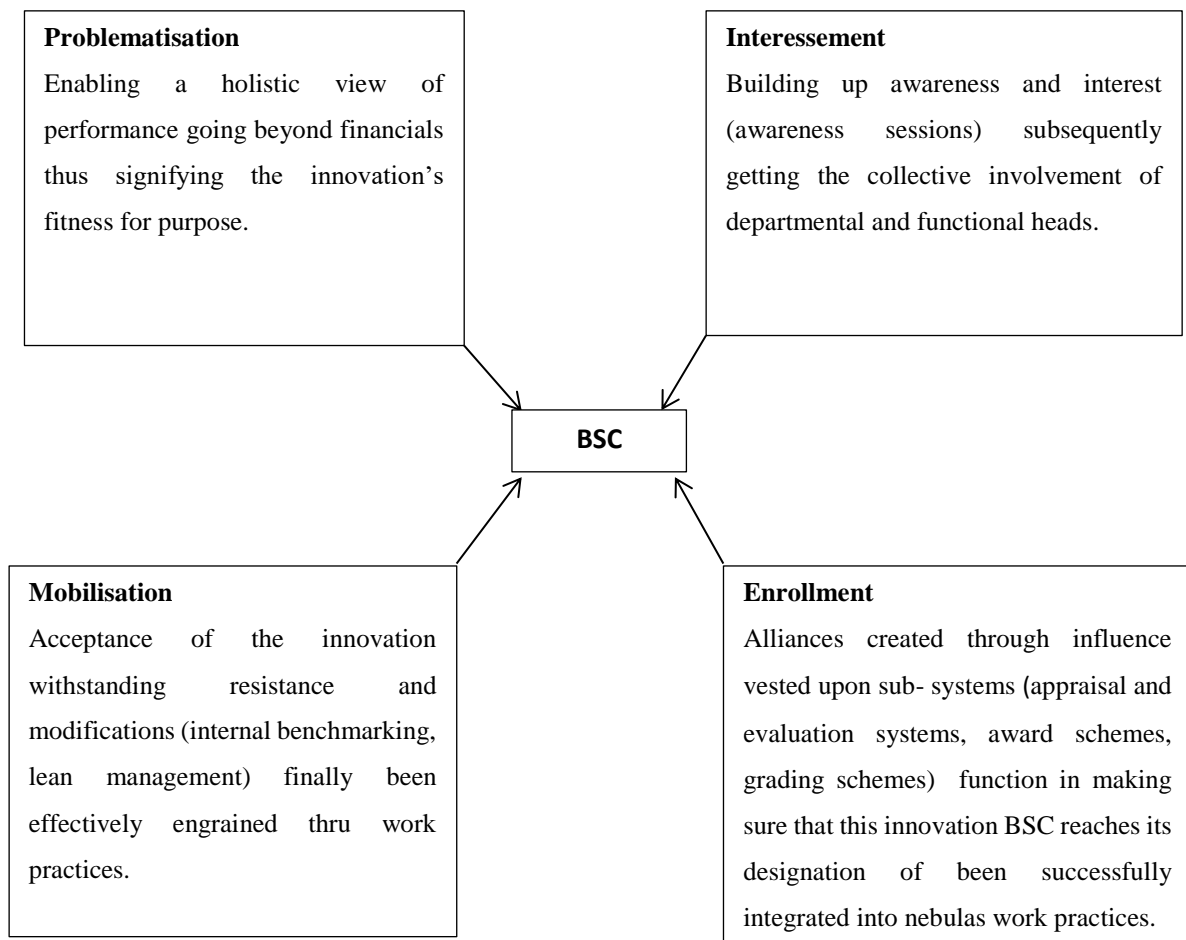
He went on to elaborate how graphical illustrations proved useful stating, “graphics and graphical representation is very important so they can see, and they can understand, we did that”. This suggests that Nebula has been able to gain support of other actors towards the BSC through effective communication and creating awareness, which was pioneered by the key actors.

5. Discussion and Conclusion

Methodologically, following the qualitative, case study approach and theoretically leaning on ANT, this paper explores how and why the BSC has been successfully translated into practice in a private sector hospital in Sri Lanka, Nebula. Failure to sustain new management techniques, despite the early enthusiasm is a common phenomenon. However, the BSC project of Nebula reveals a rare success story. The managers interviewed have put forward impressive stories pronouncing its success and sustainability, showing how the BSC has been effectively shaped through interactions among human and non-human actors and the networking formed. The reasoning behind the adoption of BSC within Nebula is linked to the widely acknowledged merit of the BSC of enabling a holistic view of performance, moving beyond financials (Kaplan & Norton, 1992). The BSC of Nebula is well integrated to its work practices, and linked

to the firm's strategic objectives (Kaplan, 2004, 2012), which is an essential ingredient for a successful scorecard. The KPIs of the BSC and annual goals reinforced each other. While on one hand, the goals setting was based on previous performance of KPIs, on the other hand KPIs were derived based on the annually set goals.

Viewing from the perspective of ANT, pioneering actors raised awareness on the concept of BSC and its merits in the minds of different actors, and this helped in getting those at the department levels involved in the implementation process. Specifically, the role of the finance and the HR divisions is highly visible within the BSC project through data dissemination and performance appraisal, and the BSC has been submerged into the organisation's work practices. The ultimate success or failure of an innovative practice is rather a social accomplishment and is a result of the collective actions of many actors, and truly lies in the hands of many different human and non-human actors (Latour, 1987). In the context of Nebula, this includes the efforts of pioneering actors, such as facilitators and departmental heads, and other actors across the entity who accepted their wisdom. Supplementing these human actors, are non-human actors, such as goal setting process, employee performance appraisal system, employee grading system, employee award schemes, award ceremonies which are intertwined with the BSC. Through collective efforts and continuous discussions with departmental heads and involvement of other employees, the management team has been able to fully amalgamate functional and administrative departments into the BSC network. Since the BSC has been successfully ingrained to work practices in Nebula, despite changes of actors across time, the BSC continues to function effectively. See Figure 1.

Figure 1*Trace of Translation*

The evidence from Nebula is rather different to the findings of Wickramasinghe et al. (2008) who report on a firm's failed attempt in embedding the BSC into its work practices. Chavan (2009) signifies the importance of investigating the impact BSC would have on a firm's employees, and this paper has offered an in-depth understanding on how the BSC has been integrated to employee appraisal, grading, awarding and evaluation. On a more specific note, Bohe et al. (2017) reveals that BSC has the ability to shape employees' way of thinking about their roles.

This seems to be the case of Nebula, because as revealed through field data, the BSC have made employees to rethink on their performance and on their role in reaching their annual KPIs, getting bonuses, winning wards and being selected for leadership programmes etc., as employees are given the opportunity to grow in their career based

on BSC generated feedback making an impact on employee motivation and empowerment. Previous literature suggests the difficulties of bringing in BSC into a professional setting (Funck, 2007; Mintzberg, 1993; Zelman et al., 2003). However, through an in-depth case study drawn from the healthcare industry Nebula narrates how a BSC has been successfully translated into practice in an entity in a professional setting, with the BSC being integrated with work practices, through the role of several key human and non-human actors.

Findings of this research contributes to literature as well as to practice. It makes a noteworthy addition to the store of management accounting knowledge, particularly to BSC literature, and how they may be succeeded in particular settings through integration to work practices. Although previous literature had studied on the implementation of BSC in healthcare context, such studies have been founded mainly on the public sector and developed economies. Differing from such work, this this study is based on the context of a private sector healthcare firm in Sri Lanka. This paper is not merely about BSC. For, despite the theoretical promise of contemporary management tools, they do not always get positively ingrained in all organisations. Through a BSC example Nebula hospital offers learning points to other organisations on successfully translating management (accounting) tools in their organisational spaces. Going forward, this study suggests future directions for research inquiry, such as to engage in comparative studies on BSC in different organisational contexts, encompassing private and the public sector entities.

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CHANGES IN MANAGEMENT ACCOUNTING PRACTICES IN ENTERPRISE RESOURCE PLANNING (ERP) CONTEXT: A CASE STUDY OF A MANUFACTURING ORGANISATION IN SRI LANKA

Perera, W. S. N.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka

Samanthi, D.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka
dinushikasamanthi@dac.cmb.ac.lk

Abstract

In recent years management accounting (MA) change has become a popular theme in the accounting literature. While multiple drivers influenced changing MA, the advancement of information technology is one of its significant drivers. Implementation of sophisticated software such as Enterprise Resource Planning (ERP) recognised as a substantial action that has led to change in the scope and work of management accountants. Plenty of studies examined the impact of it, yet few explored the change at the micro level. Therefore, covering that gap, the aim of this study is to explore how MA practices have been transformed in an ERP environment, using case evidence from a manufacturing company in Sri Lanka. Theoretically, the paper draws upon institutional theory. The paper offers insights into the literature on the change in MA from a micro perspective and the practitioners on how the changes can be positively adopted in organisations and professions. The findings revealed that although the core functions of MA remain unchanged, the repetitive tasks are passed on to ERP and non-accountants, which provides more time for data analytics, decision making, collaboration with top management in business decisions, and make suggestions, provide guidance cross functional teams.

Keywords. Enterprise resource planning, Management accounting practices, Role of management accountant, Qualitative methodology, Institutional isomorphism framework

1. Introduction

Over the past few years, the business environment has encountered several changes due to some major transformations such as globalisation, privatisation, emergence of multinational corporations, increasing competition, and advancement of Information Technology (IT) (Alsharari et al., 2015; Bhimani & Bromwich, 2010; Burns & Baldvinsdottir, 2005; Järvenpää, 2001). Among them, the advancement of IT is one of the key drivers that influenced the businesses, and the long-term survival depended based on the implementation of those IT in their operations (Abbasiet al., 2014). While this technology transforms the business and expands operations, the need for information also increases. As a result, the accounting function has been integrated with various sophisticated IT solutions such as enterprise resource planning (ERP) systems, cloud solutions, virtual accounting platforms, artificial intelligence, computer-based software, etc. (Moll & Yigitbasioglu, 2019). Among them, the ERP system has been identified as one of the latest and best technological solutions which are used for accounting information management (Francoise et al., 2009). It is emphasised that ERP is a conventional system (Spathis & Ananiadis, 2005) that assists in automation and integration of accounting processes, production of real-time data, streamline of accounting functions, analysis of data, and generate reports (Bea & Ashcroft, 2004; Jayasiri & Wickramaarachchi, 2015), while removing non-value adding activities (Nah et al., 2001).

Considering the influence to main accounting functions, it is identified that management accounting (MA) has been altered in ERP context (Granlund, 2011). There are plenty of studies that examined the implementation of ERP systems in organisations. According to those findings, there are success as well as failure stories in the implementation of ERP due to various reasons (Balzli & Morard, 2012; Lui & Chan, 2008). However, fewer studies have focused on the integration of ERP systems on accounting, especially towards MA (Booth et al., 2000; Gartner et al., 2013; Granlund, 2011; Granlund & Mouritsen, 2003), and they too disclosed contradictory results.

For instance, some have argued that there is no evidence for the effects of ERP systems on MA practices (Caglio, 2003), while some have revealed that there is an impact on

MA information and the role of management accountants (Azan & Bollecker, 2011; Granlund & Malmi, 2002; Scapens & Jazayeri, 2003). Similarly, most of the studies have examined the macro view, while a handful was conducted on a micro level. When considering the context, most of the studies have focused on developed countries, while few have focused on developing countries (Jayasiri & Wickramaarachchi, 2015; Wickramasinghe & Gunawardena, 2010). Yet, due to the differences that exist in socio-cultural aspects and the level of technology (Wickramasinghe & Gunawardena, 2010), it is appropriate to further study on transformation in developing countries. Therefore, covering these gaps, this study aims to explore how MA practices have been transformed in an ERP environment in Sri Lanka. Keeping with the above research problem, this study addresses the following research questions using case evidence from a Sri Lankan manufacturing organisation (Sigma Holdings), in which ERP has been implemented and sustained for a period nearing ten years.

1. What MA practices have been transformed due to the implementation of ERP?
2. How has the role of management accountants been transformed in the ERP environment?

Addressing these two research questions, the research objectives developed are;

1. To identify the transformed MA practices in ERP environment.
2. To explore how management accountant's role has been transformed as a result of ERP implementation.

It is believed that the study will contribute to the knowledge in terms of the transformations that happen in the MA practices and role of the management accountant due to the implementation in ERP especially from a micro perspective. Moreover, this paper provides insights to practicing managers on the new alterations of MA practices and the skills and knowledge required fulfilling those tasks. Further, it will be able to reduce unnecessary costs, labour turnover, and absenteeism in organisations since they will be able to recruit competent profiles to the contemporary roles.

2.Literature Review

2.1 ERP System and MA

ERP is one of the advanced integrated software which has been identified to manage the operations and information in organisations. Galani et al. (2010) has defined ERP

system as a set of business applications or modules, which integrates various business units of an organisation such as finance and accounting, manufacturing, marketing, and human resources into a single integrated system with a flow of information across the entire business. With these sophisticated facilities, ERP software has become the backbone of many enterprises, not even on a large scale but also in medium and small companies (Momoh et al., 2010), and reaches out to all areas of the business industries (Arachchi et al., 2015), such as retailing, manufacturing, garment, telecommunications, mass media, healthcare, airline, etc. (Kumara et al., 2017).

There are plenty of studies that have examined the ERP systems, critical success factors of ERP implementation (Doom et al., 2010), reasons for failures and challenges (Arachchi et al., 2019; Osnes et al., 2018), and the impact of ERP systems on organisational performance and different business activities (De Silva et al., 2011; Vaideeswaran & Kulandai, 2019). According to Scapens and Jazayeri (2003) and Granlund (2011), although the ERP systems have been thoroughly examined and investigated in IT-oriented research journals, they have been under-examined in accounting journals. Yet, it is emphasised that the accounting module is one of the most important modules in ERP system (Spathis & Constantinides, 2004). Further, it has been noted that implementing ERP systems has impacted accounting processes in various ways (Bejjar, 2017; Chen et al., 2012; Spathis & Constantinides, 2004).

When considering MA, it is one of the branches in accounting. Basically, it is identified as an integral part of the management process in an organisation and facilitates planning, evaluating, controlling and decision-making process by providing essential information to the business with the use of various MA techniques (Sunarni, 2013). Past studies have been conducted to examine the impact of ERP on MA (see for examples Abbasi et al., 2014; Granlund, 2011; Granlund & Malmi, 2002; Scapens & Jazayeri, 2003) showed different results. As Scapens and Jazayeri (2003) expressed, there were no fundamental changes in the nature of the MA information after the ERP implementation, but there were changes in the role of management accountants. However, Granlund and Malmi (2002) indicated that ERP systems have both direct and indirect effects on MA systems.

Further, literature highlights that adoption of ERP has impacted to the operationalisation of MA techniques such as budgeting, operating statements, performance measurement, forecasting and costing (Sanchez-Rodriguez & Spraakman, 2012; Sparkman, 2005). Further, reporting and analysis functions have been simplified and supported under the ERP environment (Rom & Rohde, 2006), and the changes were visible in standardised performance measures and expanded units and products (Sanchez-Rodriguez & Spraakman, 2012). Besides that, Chiucchi et al. (2012) demonstrated that ERP presents the opportunity to improve the MA system of an organisation by introducing standard costs and providing new relevant information for decision-making processes. Moreover, ERP has enhanced data quality, information quality, and the quality of MA reports (Abbasi et al., 2014).

2.2. ERP System and Changing Role of Management Accountants

Several empirical studies have investigated the influence of ERP systems on the role of management accountants (Gartner et al., 2013; Jack & Kholeif, 2008; Sangster et al., 2009; Scapens & Jazayeri, 2003). Accordingly, some of the transformations emphasised are changed from routinised activities (i.e. running reports and booking journals) to data analytics, increased involvement in business decision-making, internal reporting, forward looking analysis, and cross-functional analysis (Scapens & Jazayeri, 2003). In a nutshell, the management accountant's role has been transformed from the role of "bean counter" to the role of "business analyst" (Caglio, 2003; Scapens & Jazayeri, 2003).

When considering the Sri Lankan context, in the recent periods, significant growth can be identified in the implementation of ERP without restricting to large scale organisations (Jayasiri & Wickramaarachchi, 2015). Jayasiri and Wickramaarachchi (2015) and Thowfeek and Jayasiri (2013) carried out two seminal case studies in Sri Lanka, focusing on ERP systems and change in accounting processes. The findings of these studies suggested that there are no fundamental changes in the accounting practices after the implementation of ERP systems. Still, the traditional role of accountants has been enhanced to analysts, consultants, and strategic agents. However, considering the time gap and growth in ERP implementation, it is suitable to carry out further research to capture the contemporary status of MA with ERP.

3. Research Context, Methodology, and Theory

3.1 Research Context

In the context of this study, Sigma Holdings (Pvt) Ltd is a renowned paint company in the wood coatings industry that was incorporated in 1993 as a family-owned private company. As one of the strongest corporate brands in Sri Lanka, it offers a more comprehensive range of products to retail and commercial customers. Its product portfolio includes paints, maintainers, putties and plasters, and paintbrushes.

As a pioneer in the paint industry, Sigma Holdings has expanded its market share and dominates 75% of the wood coatings market in Sri Lanka (Sigma Holdings, n.d.). In recent years, they have expanded its geographical footprint in regional markets such as Bangladesh, India, Pakistan, and Maldives.

As a well-established company, Sigma has continually sought to upgrade its operations, including supporting functions such as accounting. In the preliminary interview, it is significantly noted that the company is keen on using advanced IT tools in accounting function and continually reviewing their issues and status. As a result, they have moved to several accounting software matching to the contemporary needs and currently use an ERP system called; ‘Bileeta Entution’, to carry out their financial and MA functions. The company is satisfied with the contribution of ERP system to manage accounting activities and confirmed that they have been able to gain a competitive advantage due to the implementation of this ERP system. Therefore, the context created the space for exploring how MA practices and management accountant’s role has been changed in an ERP context.

3.2 Research Methodology

The study adopts a qualitative methodology and a single case study approach since it becomes the ideal methodology in addressing the research questions in terms of providing an in-depth understanding on what MA practices has been shaped and changed, as well as how the role of management accountants has been transformed as a result of ERP implementation in Sigma.

3.3 Data Collection and Analysis

The main method of data collection of this study is in-depth semi-structured and unstructured interviews, which enabled carry out an in-depth exploration. Further, data were gathered through documentary analysis. The interviews were conducted in two stages: a pilot study and main study. Before the pilot study, desk research was carried out by referring the company's website, annual reports as well as industry capability reports of wood coatings and paint manufacturing industry in Sri Lanka to obtain a general understanding of the research context.

The pilot inquiry was conducted in the month of December 2019 at the head office of Sigma, which included two faces to face semi-structured interviews with the finance manager and IT and ERP manager. The main aim of the pilot study was to obtain some background information about the research site and an overall idea about the organisational structure, culture, ERP system and MA function of Sigma Holdings. The main study was carried out over a nine-month period (from January 2020 to September 2020) to gain a deep understanding of the ERP system and how MA practices and the role of management accountant has been changed in the ERP environment of Sigma. Accordingly, twelve interviews were conducted in this stage, with ten key organisational members covering different divisions across the organisation. All the interviews lasted between 15 minutes to one hour. Table 1 presents the interviewees details.

Table 1

Interviewees' details

Designation of the Interviewee	Responsibilities of Interviewee	Duration of the Interview
Director - Finance	Developing fundraising and financial strategy of the company, attending board and other management meetings, participating in strategic decision making.	50 minutes Face to Face
Finance Manager	Responsible for MA and financial accounting functions and reporting to the finance director of the company.	1 hour Face to Face
Head of Treasury and Credit Control	Managing the treasury and cash management operations, developing strategies for credit control,	20 minutes Face to Face

	managing and maintaining the company's global banking infrastructure.	
Manager - Credit Control	Managing and coordinating all the credit receivables, mitigating the credit risk, reviewing and deciding the credit limits, continuously reviewing the process and methods to reduce receivable days.	25 minutes Face to Face
Cost Accountant	Developing cost standards and Overhead (OH) allocation methods, maintaining the costing system and carrying out cost benefit analysis, setting margins in promotional inquires.	30 minutes Face to Face
Assistant Manager – Commercial	Handling procurements, imports and shipments, placing orders and make sure to deliver the materials to the exact warehouse on time.	30 minutes Face to Face
Manager - IT and ERP	In charge of the ERP system, providing technological support in introducing and enhancing the management controls and maintaining IT facilities.	50 minutes Face to Face
Manager - Internal Audit and Process Excellence	Conducting internal audits based on the internal audit plan, developing comprehensive procedures and policies for the company, providing audit reports.	20 minutes Face to Face
Director - Marketing, Sales and Technical	Developing key growth sales strategies, managing the marketing mix, building and maintaining strong customer relationships.	15 minutes Telephone Interview
Manager - HR, Administration and Facility Management	Facilitating training opportunities to employees, handling all kinds of employees' issues and empowering the employees.	15 minutes Telephone Interview

Notes were taken down during each interview, and all the interviews were tape recorded after obtaining the permission. Further, the documents reviewed include ERP manuals, management and accounting reports generated through the ERP system, such as monthly budgets, variance analysis reports, monthly consolidated financial statements, forecasting reports, various cost calculation reports, organisational structure, 2018/19 annual report of Sigma. Subsequently, all interviews were transcribed verbatim and the transcripts and documents were clearly analysed in isolation and taken together as a whole in order to understand how ERP implementation and MA function took place and how MA practices and management accountant's role has been changed in the ERP environment of the firm developing themes.

3.4. Theoretical Framework

This study is founded upon the theoretical underpinning of institutional theory. More specifically, this study employs the institutional isomorphic pressures described by DiMaggio and Powell (1983) to explore the institutionalisation of implementation of ERP system within the MA practices and the role of management accountant in the context of Sigma.

Although there is no agreed single definition for institutional theory (Scott & Meyer, 1983), it basically explains “the elaboration of rules and requirements to which organisations must conform if they are to receive support and legitimacy” (Scott & Meyer, 1983, p. 140). In 1983, DiMaggio and Powell developed the concept of isomorphism, a key notion of the institutional theory. This assumes that actors adopt structures and practices which are considered legitimate and socially acceptable by other actors, regardless of their actual usefulness (Rodriguez & Craig, 2007). According to DiMaggio and Powell (1983, p. 149), “isomorphism is a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions” have recognised three dimensions of institutional isomorphic pressures namely, coercive pressures, mimetic pressures and normative pressures.

Coercive pressures mainly stem from legitimacy concerns and political influences, while mimetic pressures arise when organisations face uncertainty or the goals are ambiguous or the technologies are difficult to understand (DiMaggio & Powell, 1983). They respond to the situation by just mimicking actions of other organisations that are perceived to be legitimate or successful. The third type, normative pressures which are associated with professionalism. The professionals and experts working for the firm compare the extent of use of technologies by their suppliers and customers and exert pressure on the firm, and these professionals are also influenced by the government’s promotion encouraging the use of technology (Elangovan, 2015).

These institutional pressures push organisations to adopt shared notions and routines. Thus, the interpretation of intention to adopt technology and the prevailing context of the organisation is affected by its perception of these pressures (DiMaggio & Powell,

1983; Pishdad & Haider, 2013). According to the new institutional sociology perspective, isomorphism increases the success and survival of an organisation (Elangovan, 2015). From such a perspective, organisations implement technological tools such as ERP for institutional reasons to satisfy external constituencies (Pishdad & Haider, 2013; Sharma & Daniel, 2016). Meyer and Rowan (1977) argued that organisations are structured by phenomena in their environments and tend to become isomorphic with them. Therefore, ERP systems usually emerge in response to isomorphism to the institutional environment (Meyer & Scott, 1991).

In recent years, institutional isomorphism has been widely adopted in ERP related studies (Elangovan, 2015; Pishdad & Haider, 2013; Sharma & Daniel, 2016), and it has become a powerful theoretical lens in MA research (Alsharari, 2019; Moll et al., 2006; Ribeiro & Scapens, 2006). Sharma and Daniel (2016) revealed that three high-level isomorphic pressures have affected to the adoption of ERP systems in various organisations while Pishdad and Haider (2013) expressed institutional pressures push organisations to adopt shared notions and routines like ERP.

Ugrin (2009) revealed that later adopters are influenced more by isomorphic pressures than earlier adopters. The firms in developing countries are considered relatively late adopters of ERP (Sharma et al., 2012). Therefore, ERP adoption in firms in developing countries like Sri Lanka provides an ideal setting in which to study the influence of isomorphic pressures, and it became a motive to adopt this institutional isomorphism framework in this study. Apart from that, based on the evidence gathered from the pilot study, it is realised that many external pressures have affected the implementation of ERP system in Sigma. Therefore, the theory of institutional isomorphism matched the findings of the field.

4. Evidence from the Field

The interview details revealed that Sigma uses a locally manufactured ERP system (Bileeta Entution), and currently, it is being used successfully in Sigma Holdings. Basically, this comprises six modules: finance, sales, inventory, production, warehouse, and administration. In addition to these modules, it includes fixed assets and project modules as well. Among these modules, the finance module plays a major role in this

system since most of the data are linked to the finance module at the end. Therefore, this ERP system mainly supports performing their accounting and MA functions.

4.1 Drivers Affected to ERP Implementation

According to the field data, several drivers have affected the implementation of the ERP system. One of the significant drivers is top management experience in the ERP environment, their positive attitude towards usage, leadership, and commitment to implementing the ERP system. The interview with the Finance Manager revealed that the Director - Finance of Sigma was the person who initially communicated the necessity of adopting such an integrated system to the board. According to him, she has previously worked in an ERP environment and gained a good experience regarding the benefits of such an integrated system. Further, the top management has corporate-level relationships with professional institutions, and that also created momentum for implementing this ERP system. Moreover, Sigma has obtained a consultancy service to in-depth analyse the suitability of adoption.

Apart from that, recent acquisitions and amalgamations required complex analysis and advanced reports, leading to ERP implementation since the previous package failed to fulfill those requirements. The Director – Finance expressed;

We were able to prepare and publish the consolidated financial statements easily within this ERP context. In that particular situation, all we wanted to do is informing our ERP team regarding the changes needs to be done. Then our ERP team makes those required changes and adjustments getting along with the Bileeta team.

In addition, the company has decided to prepare and publish the reports according to the Integrated Reporting (IR) framework, which is also driven to implement ERP in Sigma. Moreover, the company urges them to make them a benchmark to adopt integrated software in the painting industry and gain a competitive advantage. The Director – Marketing, Sales & Technical elaborated;

...ERP has already been implemented by other industries in our country. However, we are the first company who successfully introduced and

implemented an ERP system in this Sri Lankan wood coatings industry. And more importantly, any other competitor has not used this ERP system yet.

In this manner, it is evident that all these drivers have led to implementing the ERP system within Sigma Holdings.

4.2 Transformation of MA Practices within the ERP Environment

The data gathered from the interviewees revealed that MA practices have been improved and some changes have also occurred in terms of MA practices as a result of implementing the ERP system. As the Finance Manager explained;

Actually, now most of the current MA practices has been improved as a result of this ERP system. It's like this. As I previously said, information availability has become increase drastically in this ERP environment. With the growth of the information availability, eventually, the MA practices have also improved...

MA practices were upgraded, enhancing the space to conduct advanced analysis such as product profitability analysis, customer profitability analysis, and competitor analysis. Under the previous accounting system, calculating the product category wise profitability was a difficult task, and it took a considerable time since they used spreadsheets at the basic level. However, after implementing the ERP, they could easily perform such complicated analyses. The Finance Manager expressed;

For an example, if you think about our Sigma paints, there are various sub product categories. Not only that, these products can be further categorised based on the colours. These types of sub categories are called as strategic knowledge units of the products. So, based on these product categories and strategic knowledge units, now we can more easily execute these product wise profitability analyses in a more comprehensive manner with the support of this ERP system.

The Manager - Credit Control commented that by doing customer profitability analysis, they could retain the profitable customers and convert the non-profitable customers into profitable customers. Similarly, by engaging with competitor analysis, Sigma is able to analyse their competitors by comparing their costing and pricing strategies, financial

performance, market share, future movements, and what kinds of industry practices they are going to use.

The finance manager further noted that budgeting and variance analysis has also improved after implementing this ERP system. Prior to the ERP implementation, budgetary process and variance analysis were done manually in Sigma. However, after implementing the ERP, more than 75% of that process is carried out by the system itself. Apart from these improvements, the costing method has been changed. This is reflected in the following comment by the Cost Accountant. He stated;

Well, if you think about our costing method, earlier we used a kind of traditional absorption costing method. At that time, we did costing based on a general overhead absorption rate and it had a less accuracy level also. But, with the implementation of ERP system, we were able to use more accurate overhead absorption rates because it facilitates more data. Actually, currently we are using a mix method of both absorption costing and activity based costing...

Furthermore, according to the Assistant Manager – Commercial, the stock valuation method of Sigma has also been changed from “Periodic inventory records” to “Perpetuity inventory records” after implementing the ERP system. He elaborated;

...perpetuity inventory recording method was not in our previous accounting system, and we just took the inventory by using the time periods. It means, we just considered the opening and closing stock balances for a particular time period to take the cost of sales. But, with the ERP implementation, we were able to improve our stock valuation by using the perpetuity inventory records as our stock valuation method.

Accordingly, it is evident that the current MA practices have been improved and changed due to ERP.

4.3 Changing the Role of Management Accountant within the ERP Frontier

After implementing the ERP system, the field data notes that the management accountant’s role became less involved with transaction processing and reporting and more involved with data analysis. The main reason was that ERP system

implementation has standardised and automated the transaction processing and reporting function in Sigma. The Director - Finance stated;

Earlier, the management accountant had to spend more time on basic data processing and reporting functions. At that time, he was struggling with lot of calculations and preparation of MA reports...But, after implementing ERP, most of these functions were automatically carried out by the system itself. For an example, over 95% of reports requested by the management can be generated from the system. So, now he was able to spend a lot more time on data analysis...

Eventually, the management accountant's role has expanded to a consultant to top management who provides insights and suggestions for decision making. The Finance Manager quoted;

...now the finance director expects from me to make accurate decisions by referring various reports generated from the system, as I'm the person who perform most of the management accountant's functions.

This statement was further clarified by the Director - Finance. As she explained, management accountant's role has become more complicated than before as a result of this ERP system. Consequently, the skills required by the management accountant to perform his role have also changed within this ERP environment. Accordingly, the management accountant needs to have more analytical and decision making skills to perform his role. As she further explained, it is a really big challenge because it is very difficult for a typical management accountant to survive in this kind of radical technological changes like ERP. The Director – Finance remarked;

...in an ERP environment, just providing the information is not enough as a management accountant, and he must be able to explain how the numbers were obtained and what they mean, and they might also be asked to explain how the system generates those numbers...

The above comment was further elaborated by the Manager - Internal Audit & Process Excellence. He stated that management accountants need to have good presentation and interpretation skills along with good communication skills since they need to be able to

communicate with the management team and synthesise and explain the impact of the financial data in a way that can be easily understood. As he further noted;

As management accountant, he must be a good communicator because now he needs to take on a partnership role with the managers.

Furthermore, after implementing the ERP, the management accountant needs to work with the other departments and different management levels in addition to the finance team. However, according to majority's view, the IT professionals will acquire the basic routine MA functions in the near future as it can be fulfilled with ERP though they do not have a thorough knowledge of MA. The Director - Finance explained;

In our company, now the reports required by the top management can be obtained through an IT person or a person who does the basic data entry functions.

According to the comments given above, it is evident that the role of management accountants has been changed significantly as a result of ERP implementation in Sigma.

5. Discussion

5.1 Isomorphic Pressures behind the ERP Implementation

Based on the evidence gathered from Sigma, it was evident that various institutional reasons led to the implementation of ERP system. Prior literature suggests that the effective adoption of information systems, such as ERP systems, requires a blending of both IT and management knowledge (Ward & Daniel, 2012) which propagates through normative pressures of professional networks among their members (Currie, 2011; Nicholson & Sahay, 2009). In the case of implementation of ERP in Sigma, although there is no evidence of direct involvement of any academic or professional body, almost all the top management of Sigma has initially learned about the ERP concept and its benefits through their academic and professional studies. Accordingly, it has played a leading role as a normative pressure in implementing the ERP system in Sigma.

Similarly, in Sigma, they have seen this ERP as a best practice benchmark and realised that they can be more effective than their competitors and can also get the first mover advantage. Accordingly, this can be considered as a key mimetic pressure that affected

to the ERP implementation in Sigma. In addition, the findings of Sigma suggest that the practical experience gained by some of the top managers especially, the director – finance and IT and ERP Manager who worked under ERP environments, has also become a motive in implementing ERP. In par with literature, the practical experience of top managers motivates entities to adopt ERP as a mimetic pressure (Sharma & Daniel, 2016).

Apart from these pressures, the evidence obtained from Sigma shows that the requirement of complying with the Sri Lanka accounting standards specially, SLFRS 10 and IR framework played as a coercive pressure because they were required to prepare and present their consolidated financial statements within less time period in line with the IR framework.

5.2 Changes in MA Practices and Role of Management Accountants

According to the evidence gathered from Sigma, it was evident that after implementing the ERP system, several current MA practices have been improved with the increase of information availability in ERP, which include product profitability analysis, customer profitability analysis, competitor analysis, budgeting and forecasting, variance analysis. Furthermore, several minimal changes happen in terms of costing and stock valuation. Granlund and Malmi (2002) and Spraakman (2005) emphasised that ERP systems have a moderate impact on MA practices. According to the data, although Sigma has introduced few new MA practices (i.e. ABC) it has led to change the existing practices and increase the effectiveness and efficiency. This is consistent with Gullkvist (2013) findings, which revealed that ERP implementations and use of Business Intelligence (BI) tools significantly relate to changes in MA practices.

With regards to the role of management accountant, he has moved from a number crunching role to more analytic and decision-making role. This finding confirms the results of prior literature (Circa et al., 2015; Doran & Walsh, 2004; EI-Sayed, 2006; Gartner & Krichbaum, 2014; Suhaimi et al., 2016), who also claimed extensive changes in the role of management accountants under ERP environments. Further, become a cross-functional team member which is comparable with the results of Circa et al. (2015), expressed about management accountant's involvement in cross functional analysis. Apart from these changes, to perform new tasks management accountant has

to improve skills such as analytical, IT, decision making and team working, communication skills (Chen et al., 2012; Gartner et al., 2013).

When considering all the findings of this study, it is clear that the MA practices and the role of management accountant have improved and changed as a consequence of ERP implementation and several isomorphic pressures (coercive, normative and mimetic) have affected the ERP implementation in Sigma.

6. Conclusion and Implications

This study mainly explores the MA practices that have been improved and changed and how the role of management accountants has been affected as a result of ERP implementation. Accordingly, the study followed a qualitative case study approach based on Sigma Holdings; a manufacturing organisation in Sri Lanka. Theoretically, this study adopted an institutional isomorphism framework to identify the key drivers affected to the ERP implementation since ERP played a prominent role in changing and shaping the MA practices and the role of management accountant within the context of Sigma. According to the findings, several institutional pressures have affected to the ERP implementation in Sigma, which include top management knowledge and awareness obtained from the professional bodies (normative pressures), consultancy support, practical experience of top management, seeing ERP as a best practice and obtaining the first mover advantage (mimetic pressures), complying with the accounting standards and IR framework (coercive pressures) etc.

Through the evaluation of data collected in the study, it is evident that ERP system implementation has enhanced the efficiency and effectiveness of the current MA practices and played a vital role in introducing new MA practices such as ABC. Similarly, with the implementation of ERP system, the role of management accountant in Sigma has been transformed in terms of the task performed and skills required by the management accountant. Although the routine tasks moved to non-accountants, the conventional role of management accountant remains at a significant level.

The findings of this study make several contributions to literature and to practicing managers. It contributes to extending the current body of literature by providing an in-

depth understanding of how MA practices and management accountant's role has been shaped and changed as a result of ERP implementation, which has received limited attention from researchers more specifically in the Sri Lankan context. This study is also important from a theoretical point of view that provides useful insights into isomorphic institutional pressures that influenced the implementation of the ERP system. Further, it provides valuable insights to practicing managers on how MA practices and the role of management accountant has been improved and changed under the ERP implementation in organisations.

Since this study was conducted as a single case study, it is possible for future researchers to adopt multiple case studies to offer comparative insights, and such comparisons can be undertaken between manufacturing firms, service sector firms, or public sector firms. Apart from that, a longitudinal study is also possible on this phenomenon.

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CHANGES IN THE FUNDAMENTALS OF AUDITING: CASE EVIDENCE FROM A BIG FOUR AUDIT FIRM IN SRI LANKA

Patrick, C. K.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka
charmainhakshana@yahoo.com

Samanthi, D.

Department of Accounting, Faculty of Management and Finance, University of Colombo, Sri Lanka

Abstract

Auditing has changed over time, and the fundamental features, especially independence and audit reporting, have been reoriented in the process. To facilitate the changes in the field the auditor's role has evolved. The objective of the study is to analyse the developments and changes in respect to the fundamental features of audit: independence, audit reporting, and auditor's role, drawing evidence from ABC audit firm, a big four, in the Sri Lankan context, laying Bourdieu's theory of practice as the theoretical underpinning for the study. Qualitative methodology following a single case study approach was implemented to conduct the study. The study revealed that although the fundamentals of auditor independence, audit reporting, and the auditor's role have been unchanged, the blur in the boundaries and the changes in the operating environment has expanded and enhanced the audit features, leading to transformation in the audit profession. The contemporary audit and professionals focus on competing on quality by 'adding value to audit' and to ensure value additions to clients. Hence, the contemporary auditor revolves around the client and continuously evolves to be more relevant by facilitating the new audit: to enable value added audit, provide high quality audit, creating space for the special purpose audit, to ensure independence and other ethical values amidst new incorporation of services and to meet the heightened reporting needs of users.

Keywords. Auditing, Independence, Reporting, Auditor's role, Big four, Sri Lanka

1. Introduction

Auditing is being redefined and reinvented in recent years due to the changes in the business environment, leading to radical changes in the audit profession (Jayalakshmy, Seetharaman & Khong, 2005). Thus, the audit profession as a whole has long been identified for its dynamism and fluidity to adapt to its changing environment (Andon, Free & O'Dwyer, 2015). Drivers such as changes in regulatory frameworks (Baker & Owsen, 2002), transformation in business expectations (Dennis, 2010), digitalising operations (Holm, 2017) have effected continuous changes, and it is noted that these changes have had a significant impact on the role of auditing, the functions and the audit profession in broader terms (Harrington, 2003).

When the change leading to growth and expansion of the audit profession is controlled, it is an excellent weapon to enrich the quality of service, combat competition, expand market share, and heighten profitability; however, when uncontrolled it can be a double-edged sword (Holtzman, 2004). Hence, it is crucial for the profession and the actors operating in the industry to realise the effect of changes and respond accordingly to sustain in the market. Further, by identifying the contemporary changes, the auditors as well as the organisations will be able to determine the future of the profession, since the development of the audit profession is not only relayed on revamping of existing practices rather it can be enhanced through the understanding on current dynamics in the profession of auditing (Cooper & Robson, 2006; Jayalakshmy et al., 2005). Therefore, a sound understanding of the dynamics of the audit profession is required.

However, Auditing is treated as the black box (Jeppesen, 1998), and according to the extant literature and dearth of studies investigated on the changes in auditing, less attention has been provided, especially on how the changes have influenced the fundamental features of the audit, such as the nature of independence, reporting, and the role of the auditor (Andon et al., 2015). Therefore, it is worth, further explore on how the changes have transformed the fundamental features: independence, reporting, and the role of the auditor, due to its greater importance in the domain of auditing, in micro level using different contexts (Coffey, 2018). Considering the contextual studies, more attention has been provided on the changes in auditing in developed countries, while a few have focused on the status of developing countries (Yapa et al., 2017).

Addressing these gaps, the study aims to explore the changes in auditing in terms of the role of the auditor, the nature of independence and audit reporting in Sri Lanka from an auditor's perspective.

Keeping with the above research problem, the study addresses the following research questions using case study evidence from one of big four audit firms (ABC):

Q1: What are the changes that have occurred in the fundamental features of audit: auditor independence and audit reporting?

Q2: How have those changes transformed the auditor's role?

The aforementioned research questions lead to achieving the objectives: to identify the changes in auditing in the fundamental features of audit: independence and reporting and to explore how the role of auditors has been transformed due to these changes within the ABC audit firm.

Sri Lanka's audit market has long been an active and dynamic market with a history of more than 200 years and a sound structure of regulatory bodies and professional bodies governing the accounting and auditing profession, also comprising 532 audit firms as of 2014 (Wickramasinghe, 2015). Among them, the four largest international accounting firms that operate in Sri Lanka are KPMG, Ernst and Young, PWC, and BDO partners, auditing 84% of the listed companies in Sri Lanka (Wickramasinghe, 2015; Yapa et al., 2017). During the span of time, auditing in Sri Lanka has experienced many developments and changes, along with a positive trend in the Sri Lankan audit market and is exposed to future changes and developments as well (Wickramasinghe, 2015). Thereby, Sri Lanka as a developing country can be considered a suitable research context for the study for its dynamic audit market and greater potential. Since the aim is to explore the changes in micro level, ABC audit firm has been drawn, one of the big four audit firms, affiliated to ABC Global-the global network; and the oldest professional firm in Sri Lanka. Further, based on the pilot interview conducted, it is ascertained that the firm continually seeks global changes in the audit practices and updates its operations with new trends and challenges whenever and wherever it is applicable. Therefore, the ABC firm has been adopted as the case firm and has been explored for the changes in-depth.

It is believed that the study leads to fill the gap in the literature in terms of changes in fundamental audit features and contribute to the long stream of work in the area of auditing profession. Further, this will provide useful insights to audit professionals on enhancing the quality of the Sri Lankan audit profession, confront challenges while mitigating risks in advance, formulate new regulations to create and promote a favourable audit climate for the profession, and in overall to enhance and develop the future of audit profession in the Sri Lanka.

2. Literature Review

2.1 Evolving Auditing: Changes and Developments

“Auditing is a service that provides a reassurance to all who have a financial interest in companies” (Committee on the Financial Aspects of Corporate Governance, 1992, p.36; Yapa et al., 2017). Over time the very nature of auditing has changed as the boundaries have been redrawn (Andon et al., 2015; Miller, 1998). Power (1997) asserts that the “fuzziness” in defining and conceptualising auditing is what enabled it to be translated and be adapted to an ever growing variety of organisational and social contexts, creating space for a more widened role with an advanced scope advocating a “value-added” audit (Khalifa et al., 2007) and heading towards commercialisation (Windsor & Warming-Rasmussen, 2009). Further, such changes have enveloped the auditor within the political dimensions of the auditee, explicit about the enablement and extension of client fortunes (Jeppesen, 1998) and its customisation for their needs. Auditors now and in the future are much more than traditional audit professionals who are sought to reinvent themselves as business consultants, “business doctors who heal” (Mennicken, 2010, p. 355). Series of changes were witnessed in audit throughout the past decades: The audit approach used by the large accounting firms frequently changed over the last 25 years (Solomon & Trotman, 2003); In the mid-1970s the profession was set to realise a new dimension to its long standing traditional perspective, major pivotal moment for the profession as a whole was witnessed - melding together of services (Holtzman, 2004); During early 1990s, with change, new audit method emerged, the business risk auditing (BRA), a complete dramatic shift in the purpose of the traditional audit and the interests that it performed (Fogarty & Rigsby, 2010), tossed the conventional value proposition, focusing the public interest facet of attestation only as a by-product (Jeppesen, 1998); auditors increasingly became businessmen and

auditing became a commodity among many being marketed (Jeppesen, 1998); firms from being called accounting and auditing firms to being perceived as world-wide diversified professional services firms (Fogarty & Rigsby, 2010); value set, from the “social trustee” value set of professionalism, encompassing a public interest obligation, changed to a “professional expertise” value set of professionalism, based on the market value of knowledge and expertise (Fogarty & Rigsby, 2010; Suddaby et al., 2009). To sum up, the new audit has become “business value” faceted, advocating a “value-added” audit to increase the wealth of shareholders (Khalifa et al., 2007).

2.2 Changes in The Fundamentals of Auditing: Independence, Reporting and Auditor’s Role

The series of changes witnessed in auditing over the past years and the extant literature reveals that the dynamism in auditing and the jurisdictional expansion have reoriented fundamental features of audit: independence, reporting, and auditor’s role to adapt to changes accordingly. Independence, fundamental in the rules of the game in financial statement audit, without which, audit is seen to have “no value” (Power, 1997, p. 132) is highlighted by many studies that the audit process has to be independent to prevent excessive influence by varied actors (Andon et al., 2015). The emergence of the new audit and its public interest dimensions necessitate the interaction between the audit and consulting services (Fogarty & Rigsby, 2010). As Big-4 Professional Service Firms (PSFs) and other accounting professionals move into new spaces, they continue to accord independence a privileged position, but when it’s challenged with different interests and prevailing attitudes, independence becomes contestable (Andon et al., 2015). One of the profound consequential independence problems the new audit posed: audit being “co-developed” with the client (Jeppesen, 1998) and a number of “built-in anti-independence factors” in the audit environment, making independence even more impossible (Jayalakshmy et al., 2005). This “crisis of auditor independence” (Reiter, 1997, p. 307) is a major contributing factor in audit failures and high-profile scandals (Jayalakshmy et al., 2005). However, among many literature highlighting the crisis of independence affecting the audit quality, Everett et al. (2005) reveal that independence wasn’t always central to the ethical discourse of the profession, an ethical shift to independence was encouraged by events external to the profession. Power also asserts that “the very meaning of independence as a presumed [legitimizing] attribute of

assurors is much more fluid than we might realise” (2011, p. 325) and as conventionally conceived may not always be as prised when audit practices are transplanted into new fields (Everett et al., 2005). Hence, calls for a watering down of independence to accommodate a broader scope of work (Andon et al., 2015).

In addition, with the heightening changes in the environment and expectations of users, reporting also has changed. The accounting profession’s product – audited financial reports and corporate disclosure – is viewed as central to the efficiency of the capital markets (Reiter, 1997): “Accountants are the gatekeepers of our financial markets ensuring the quality and integrity of financial information” for efficient capital market (Wallman, 1995, p. 82). Power (2003) rants that audit is valueless unless its results are clearly communicated to appropriate audience and hence a need for sound reporting. At present, an explicit focus on report users has spurred the growth in the number and length of standards, and the changed report promulgate this explicit shift towards more decision-useful financial audit reports (Andon et al., 2015). The user-focused statements eventually led to the introduction of more expansive statements, comprising commentary sections, higher levels of assurance, and recommendations for improvement, offering the more customised and informative narratives. This heightened focus on user needs in financial audit reports and sustainability assurance statements emphasises the evolving democratisation of examination processes (Andon et al., 2015).

With so many transformations taking place in audit, its fundamental features, and the profession as a whole, the role of auditor had to evolve, and the nature of the auditors’ role and responsibilities have changed significantly over time (Humphrey & Owen, 2000). Auditor’s role, in Bourdieusian terms, are “cultural intermediaries” (Negus, 2002), and a shifting emphasis can be examined over time in Auditor’s mediating role. At present, as auditing emerges outside its traditional financial statement bounds, the nature of the mediating role has broadened incorporating co-production of familiarity that is while some traditional audit procedures and conventions remain, newness in approaches and emphasis in other audit-related practices have been built in (Andon et al., 2015). Moreover, new audit roles such as a salary cap auditor role, Forensic auditors etc. (Andon et al., 2014) are evolving into the field to facilitate new services for clients

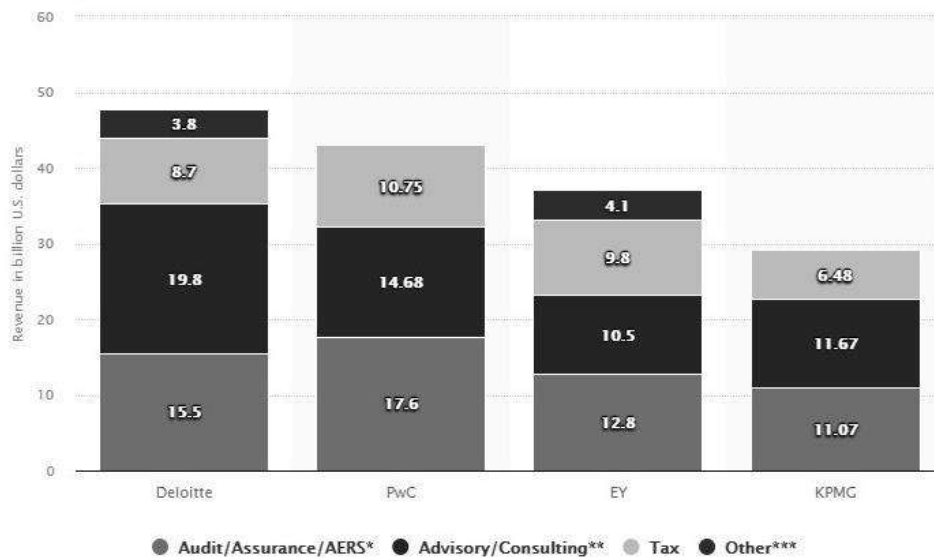
and their diverse needs. Farrell and Franco (1999) have also highlighted that the role and responsibility of the auditors are no longer fraud detection but rather providing reasonable assurance on the financial statements. Considering the many changes, the audit professionals or the representative of audit professionals, “the professional elites: The Big 4” – KPMG, PWC, EY and Deloitte (Deloitte, n.d.), have transformed their boundaries and practices over time responding to the changes in the auditing (Shore & Wright, 2018) and being the influential and dominant players in the newly developing global regulatory framework (Suddaby et al., 2009) have transformed the audit profession as a whole by bringing in new changes to the profession.

Accordingly, when the corporations or the clients started seeking out internal and external auditors beyond their traditional audit and tax tasks, ultimately demanding a change in the role and business model of auditor, gradually, the auditor, especially the Big 4, facilitated the requirements of their clients and identified themselves as business consultants who aid in enterprise expansion, providing contributions for tasks such as risk assessment and management, enhancement of internal control efficiency, corporate governance, forensic auditing etc. (Deloitte, n.d., Shore & Wright, 2018). Over time, these larger audit companies, engaged in radical restructuring, have become global brands and one-stop shops, providing audit, business consulting, financial advisory services, risk management and tax advice to their clients, establishing a new organisational form that is more flexible and responsive to their local and global client needs, enabling to capture new markets and in becoming ‘corporate kleptocracy’ vulnerable to fraud, malpractice and menacing risk-taking (Shore, & Wright, 2018). With time, audit service became less prominent than the consulting arm and other services; the Big 4 treated auditing function principally as a portal of entry to cross-sell consulting services (Coffee, 2001). Figure 1, witnesses the reason for such retooling; consulting is amongst the major sources of income for the firms (Coffee, 2001) and hence being a partner of Big 4 firm is becoming a hunter, to identify the opportunities, secure them and work on it (Spence & Carter, 2014). The current shift towards commercialisation and entrepreneurialism generated organisational behaviour of the Big 4 are far from legal-rational, rule bound and conventional; the main problem of existing model of auditing is that it generates conflicts of interest and blurs the boundaries between the public watch dogs’ roles and their commercial interests (Shore

& Wright, 2018) leading to an Audit that has become more of a commodity, a private good and the relationship between the accounting firms and their clients has inevitably become commercialised (Fogarty & Rigsby, 2010).

Figure 1

Revenue sources of the Big – 4 Accounting firms worldwide in 2020



Source: Statista (2021)

3. Research Methodology and Theoretical Framework

3.1. Research Methodology and Method

The study is based on the view to explore the changes in fundamental audit features at micro level. Therefore, based on the nature of research questions developed, qualitative methodology is adopted for its innate characteristics: descriptive; non-numerical; reasoning and words; meaning; feeling and defining the situation from experiences, which is more appropriate for the study (Silverman, 2000). In addition, the single case study approach has been adopted since the intention is to explore the unique or special changes or an experience in a practical real-world context (Yin, 2009). Therefore, ABC firm has been utilised as the case, an influential, experienced player in the professional arena to provide insights or to comprehend the current phenomenon for the relevant study.

3.2. Research Context

ABC, one of the big four audit firms affiliated with ABC Global-the global network, is the oldest and the largest professional firm in Sri Lanka, enabling the firm to witness and experience series of changes the profession has been exposed to. The firm currently provides varied services such as external audit services, tax services, internal audit, and risk consultancy services, IT advisory, management consultancy services, human resource advisory services etc. to clients of different scales. The company has a sound employee base of more than 1400 professionals and 21 partners and its affiliation with its global network: ABC Global, has not only limited its reach and influence to the local market but rather to the international market as well, playing a major role in the international professional arena. ABC is well known in the industry for pioneering and aiding in the development and initiation of many technology based solutions, standards, strategies, etc., in the audit profession. The long span of existence in the audit industry, its influential role in the professional arena, its affiliation with the Global firm enable it to be an appropriate research site for the study.

3.3. Data Collection and Analysis

Data has been gathered through multiple sources (data triangulation) to support the same facts and/or findings (Rowley, 2002), and to gain an in-depth understanding of the case. Thus, in-depth interviews, observations, and documentary analysis have been used to collect data during two phases; pilot study and main study. Initially, after the selection of the appropriate case study, obtained contacts of the organisation through requests directed to the partners and obtained contacts of managers through the leads provided by the partners. The partners and managers were informed about the study, initially, providing a basic understanding prior to the interviews. In the pilot study, two Audit partners, including the Head of Audit and three other professionally qualified participants from managerial level: Senior Manager; Manager and an Assistant Manager were interviewed. Consequently, for the main study, the same set of respondents were interviewed due to the demonstration of an in-depth understanding on the matters discussed by the respondents. Interviewees from different designations were chosen in order to inculcate the diversified opinions, different experiences, expectations and feelings. Further it is expected to integrate perceptions using differing generation gaps, demographics, experience levels and maturity from their respective

designations. Semi structured and unstructured interviews were conducted based on the expectations. The interviews were carried through face to face interviews and over the phone (due to limitations posed by Covid situation) and approximately 45 minutes to one and half hours were taken for each interview. Prior to the interviews, relevant published information of the respective company was referred, aiming to obtain a basic understanding on the background of the company. Upon the completion of interviews, the data was transcribed and using different themes from the theoretical framework, transcripts were analysed in detail to capture the sub themes. Maintenance of ethicality was given a higher preference during this research and the subjects' anonymity was ensured throughout the stages of the research. In addition, credibility and quality of the data was assured throughout the study.

3.4. Theoretical Lens

To critically evaluate the developing/evolving/changing traditional audit, key theoretical concepts of the French sociologist Pierre Bourdieu, the theory of practice was laid for the study. Bourdieu's theory of practice (Bourdieu, 1984; Chudzikowski & Mayrhofer, 2011), enables to understand the evolving nature of the profession (field), reasons for changes (habitus) and the role of actors of the field (capitals) – “that aid understanding of a given domain’s “logic of practice”, including its dominant structures, prevailing power relations, accepted actions and practices and struggles to both sustain and disrupt these elements” (Andon et al, 2015, p. 1403). Bourdieu's theory was developed to understand the practical logic of continuous or changing practice/ actions of society/ profession governed by practical intelligibility (Power, 1999), to comprehend the dynamics, struggles for power (Andon et al, 2015) and to develop a reflexive sociology (Power, 1999). To better understand changes in the audit profession through a Bourdieusian lens, one needs to have an understanding on the valued stakes, “rules of the game”, as well as the forms of power that sustain important players.

In addition, the interrelationship between the key theoretical concepts enable in providing an understanding on the “logic of practice”: habitus (embodied attitudes and behaviours), practice, field (social structure), and different forms of capital (power relations) (Power, 1999; Spence & Carter, 2014). The interplay between the three concepts – field, habitus, and capitals explains the practice of a profession

(Chudzikowski & Mayrhofer, 2011) and the practices are developed as a result of the "interrelationship" between habitus, capital and field (Power, 1999). Fields cannot exist without capital (Power, 1999) while habitus and field are related in a circular relationship, where field shapes the habitus, which, in turn, shapes the actions that reproduce the field (Chudzikowski & Mayrhofer, 2011). The actors involved in the field who strive for the capitals are influenced and shaped by habitus and by the rule of the game/ field (Chudzikowski & Mayrhofer, 2011) whereby Bourdieu's theory proposes a relationship of mutual interdependence. The interrelated concepts come into play during rational decision-making resulting from the habitus of the person; the relationships with other participants, because of the unequal resources of capitals – different 'players' in the field possess; the field, partly unpredictable pattern of turning-points and routines comprising of decisions composes the evolving profession/field as whole (Chudzikowski & Mayrhofer, 2011). Bourdieu frequently underlines the dynamics in the concepts developed, the adaptive quality of the habitus the 'generative principle' (Bourdieu, 1984) identifies it not only as a 'reproductive principle' but rather also that enables to generate new or capable of adapting to different practices using the internalised past experiences in an innovative way. Due to the interrelationship and interdependency among the building blocks of the theory: capital, field, and habitus, dynamics or the changes are expressed, impacted, influenced through the adaptive nature of habitus or through the other concepts in turn affecting the different forms of capital and dispositions that are governed by the logic of habitus and the field (Özbilgin, et al., 2005). Bourdieu's theory of practice therefore enables in obtaining an understanding on the dynamics of the changing audit profession of Sri Lanka.

4. Evidence from the Field

The fundamentals of auditing hasn't changed since its inception; however, with the varied changes, influences and expectations of the operating environment, the audit has evolved, expanding the scope and the boundary. "*The functional purpose of the audit had not changed... but what changed is the environment, so audit had to evolve*" Partner, Head of Audit.

Auditing no longer is only about financial statements but rather incorporates new services in the provision of audit services and audit firms have also been providing varied other services intersecting in audit field such as assurance, forensic audit, IT

audit, payroll audit etc. The interviewees also validated that a good professional must incorporate other industry knowledge in their work and should be able to thrive in the field rather than being narrow minded and limiting to financial statements. *“Blinkers say only audit and any profession needs to be allowed to thrive”* Partner, Head of Audit.

However, with the changes in auditing, the traditionally conceived notion: public interest or rather a social trustee concept is shifting to professional expertise concept, where the respondents believe, audit profession being promoted as public interest profession is a tough benchmark and acts as a hindrance for the audit firms in earning revenue to promote the firm to compete in the industry with a certain frustration, emphasising the commercialised nature of the profession:

Public interest... so that is a tough benchmark... the interpretation is totally misplaced, so it is a profession like any other profession. Every company operating in this earth is anyway looking for profit.... high risk high return, audit is one of the highest risk professions so if it's high risk, high return should be there - Partner, Head of Audit

Moreover with the heightening changes in the environment, increasing competition in the audit field etc. the contemporary approach of auditing is competing on Quality: ‘Adding Value to Audit’.

We are always competing to increase our revenues and we really have acquired lot of new clients through the quality of work we have performed - Assistant Manager

Auditors believe quality is the utmost important factor in audit to provide an opinion and conceive that, when the profession can maintain highest quality in terms of all its practices, better output/ value addition to audit can be achieved in terms of adherence to standards, to provide an opinion, to serve the needs of the clients etc. The interviewees had been stressing the term quality in every aspect of audit throughout the interviews and stated the 3 way/level of quality measures undertaken by the firm to improve quality: Firm level, Regulatory authority level and Global Firm level. However, with the emphasis of value addition to audit, the increasing firm’s inclination towards value addition to clients is also apparent e.g.: Auditors examine the business

processes, controls and everything and upon identification of any business risks or management weaknesses, the firm reports it to the directors and audit committee and also provide recommendations in the client's processes/ operations/ controls etc.

We look at the processes..., their controls..., and their system as well. If there are weaknesses we report them... we suggest improvements, if we find any management weaknesses, we report - Senior Manger, Audit

So the auditors now seek to act for the betterment of their client as well, along with auditing. While most auditors denied the enablement of client fortunes and business improvements, one respondent explicitly stated that customer satisfaction as their top most priority.

As a service providing entity we need to add value to the client and customer satisfaction is our top priority... so in order to achieve customer satisfaction we will need to provide quality work and we also need to come up with recommendations that will be most effective for the client to be update in their operations - Assistant Manager, Audit

In addition, with the wave of technological developments over the years, and with high volatilities and complexities in the environment the risk exposures of organisations have surged leading to the adoption of risk based audit methodologies (depicting a shift in methodologies practiced).

Moreover with regards to the fundamental features of audit, firstly, independence, the fundamentals of the feature has not changed, however the approach of practicing has, from a principle based approach to a rule driven approach, where the firms, regulatory authorities, global affiliation networks have increasingly developed numerous measures to adhere, to ensure independence. However the interviewees have different stake and believe that independence is a state of mind and can be practiced only voluntarily and being rules driven will not prevent the issues of independence.

Independence hadn't changed... Independence is a state of mind, so currently it's very easy to overcome because you're rule-based, there are enough loopholes, when its principles based you have to have a state of mind, and you

think you're independent or not independent, so rules will not prevent the issues of Independence - Partner, Head of Audit

Auditors when questioned, regarding consultancy or assurance services and other services which are now termed as new services, known to be affecting the independence of audit professionals, emphasised that many of such services are prevalent from earlier days (was always part and parcel of audit process) though it was not clearly segregated from audit as of now and also highlighted that with the rule driven approach provision of new services is limited, expressing their dissatisfaction for restraining provision of new services, which they believe hinders them in providing a better output to clients. Therefore auditors stress the fact that independence is not something that needs to be defined or be rule driven but rather practiced with their own consciousness and impliedly make the call for the need for watering down on the rules imposed for independence.

Corporates come back to auditors to ask advice because they have a relationship and they think we are the best place to get advice because we know the company, but some of the rules of independence will prevent... so the best resources might be in my company but still I can't provide the service so it stops them from getting best services - Partner, Audit

Secondly, Reporting, the Audit report has changed in the recent past years with regards to the length, nature and content of the information to meet the expectations of users and to be more relevant. With the introduction of new and revised Auditor Reporting standards the report now details additional information such as Key Audit Matters, disclosures, etc. improving the overall quality of reporting, increasing the transparency and aiding in the provision of relevant and useful information to users highlighting the user centric reporting and thereby has been providing increased qualitative information. Interviewees also highlighted, to facilitate these changes and to increase accountability of the audit reporting the responsibility of audit report has shifted from firm to partners (individuals).

Now the responsibility of the partner has been increased, whoever signing the audit report they are taking the individual responsibility not firm as a whole previously that was there... - Manager, Audit

Finally, Auditors Role, the respondents identify that the role has ever been the same in providing an independent opinion, however with the changes in the operating environment, the scope of auditor has expanded and become more complex and the auditor had to evolve to be more relevant. *“Auditors had to evolve to maintain their role to ensure that we play the role correctly”* Partner, Audit.

Auditor’s role has evolved to facilitate the expanded scope of auditing: Value addition to auditing; to provide high quality audit; ensure compliance of increased reporting and independence measures etc. Moreover, with the firms’ increasing inclination towards client and enablement of client fortune, contemporary auditor acts as a business consultant facilitating the needs of the clients. Overall the role of an auditor has become complex and challenging.

Role is still the same, finally we have to give opinion... but role has become little bit more difficult... more to do in terms of compliance requirements... now because of these drive globally to reduce expectation gap of stakeholders.. - Partner, Head of Audit

5. Analysis & Discussion

Audit profession can be recognised as a ‘field’ according to Bourdieusian terms since it is built upon fundamental concepts or rather the rules of the game (Power, 1999). However, the boundaries for the field (audit profession) are still blurred, as a result, this fuzziness in conceptualisation of audit (Power, 1997) has enabled the profession to be dynamic and to adapt to the changes in the environment, depicting the adaptive quality or the ‘generative principle’ of the habitus as stressed by Bourdieu (Bourdieu, 1984). As mentioned in the studies of Andon et al. (2015); Khalifa et al. (2007) the blur in the boundaries of the field has allowed audit to play based on the rules of the field as depicted through Bourdieu’s lens (Power, 1999), but divest from its traditional or conventional platform, expand boundaries and create space for the new audit: valued added audit.

5.1 Changes in Auditor Independence

According to the extent literature, it is argued that the valued added audit incorporates new services and emphasises value addition in all aspects of the services provided to

the clients. Therefore, at present the auditors provide value added audit services and other special services intersecting in the audit field such as risk management, consultation, assurance, forensic audit, IT audit, payroll audit, knowledge audit etc. Considering the change, some have argued that providing value added audit and services from other related disciplines rising at the intersections between hierarchical audit field, has led to alter the core values of the audit profession (Andon et al., 2014; Fogarty & Rigsby, 2010) and along with it, the built-in anti-independence factors in the audit environment have contested the practice of independence in the current context (Jayalakshmy et al., 2005). However, the findings revealed that, the argument fails in many cases since the auditors identify that independence is one of the fundamental concepts audit is built upon and the fundamentals had not changed over the years, only the method of practice has changed from a principal based approach to a rule based approach with heightened measures and stringent rules enforced from regulatory level to global and firm level (Refer Annexure 1 for the heightened Independence Assurance measures practiced by ABC to assure increased rule driven compliance of independence).

However, the auditors emphasise that increased measures and rules driven approach only limits providing a better output and irrelevant of many services being aligned with audit, independence is a state of mind and thus, can only be practiced voluntarily. Independence as a concept is believed to be more “fluid” than perceived which was also noted in Power’s study (1997) and impliedly auditors make the call for the need for watering down of rules imposed on independence (Everett et al., 2005). Moreover auditors emphasise, to be a good professional and to provide a better service it is essential to upgrade knowledge on other disciplines as well (i.e. investment management, risk management, IT) which will aid in thriving in the field than being narrow , limiting to traditional financial audits (Mennicken, 2010).

5.2 Changes in Audit Reporting

With the series of changes, reporting of auditing also has changed in the recent past years with regards to the length, nature and content of the information (Refer Annexure 2). Reporting in the earlier days was more basic and simple, however, at present, reporting has been enhanced and upgraded to be more relevant for the current market

needs and expectations. In addition with increased regulations on reporting that is the introduction of new and revised Auditor Reporting Standards, to facilitate market expectations and to increase credibility and quality of reporting through increased transparency, reporting requirements and disclosures have heightened. Consequently, firms have been providing increased information through expansive statements, detailed content and commentary sections in order to meet the heightening needs and expectations of users and regulatory requirements, establishing a more user centric reporting (Andon et al., 2015) and in the light of the above changes a rising trend of increased qualitative information is apparent over the years in the audit report. Resultantly, for the effective adoption of the changes in reporting and to assure accountability, responsibility of reporting has shifted significantly from firm level responsibility to individual level responsibility.

5.3 Changes in the Role of the Auditor

According to the field data, the contemporary role of auditor has been transformed to providing value addition to clients with increased market expectations and to adapt to the ever changing environment. To facilitate this role the auditor acts as a professional expertise rather than a traditional public interest oriented professional, accentuating the transposition in the perception and interests of the profession and the professionals (Fogarty & Rigsby, 2010). In the attempt to provide value addition to the clients, firms are providing varied services as described earlier and have established themselves as a one stop shop: inclining towards commercialisation and entrepreneurialism induced organisational behaviour by the actors of the field (Windsor & Warming-Rasmussen, 2009). However, the tough benchmark consequently set by the perception and notion of the society towards auditing as public interest profession since its inception and the increased independence measures, impedes and limits in providing different services and in earning revenue resultantly, to promote and compete in the industry (Suddaby et al., 2009).

Thus in the road towards commercialisation and entrepreneurialism, the contemporary audit and professionals focus on competing on quality: 'Adding Value to Audit' (Khalifa et al., 2007) and thereby have been adopting measures to improve audit quality: three ways / levels of quality measures are being undertaken currently by the

firm to improve quality (Refer Annexure 3). Accordingly, Quality has become everything in audit today to ensure value additions to clients (Khalifa et al., 2007; Jeppesen, 1998). Moreover, with the developments in technology and other changes in the environment etc., the risk exposure of the organisations has increased comparatively leading to the adoption of risk based audit methodologies (RBAM), also identified as BRA in literature (Fogarty & Rigsby, 2010) (Highlighted in Annexure 3).

The main aim of the contemporary approaches: Quality focused value addition to clients, one stop shop, RBAM etc., is to enhance the capitals (in Bourdieusian terms) of competing firms in the market, to advance their positions in the Sri Lankan audit field (Bourdieu, 1984; Chudzikowski & Mayrhofer, 2011) and to strengthen the profession. All these possibilities developed, advocate the new widened scope of audit: “value added audit” and auditor (Khalifa et al., 2007).

In the light of the above changes the audit profession and the role of auditor have been transformed in ABC firm continually. Although the core function of the auditor has remain unchanged over the years in providing an independent opinion, the auditor has embraced new changes overtime with the blur in boundaries of audit, to incorporate external changes and influences. The auditor’s view is that the embracement is necessary to be relevant, to provide high quality audit and other services to the clients (also anticipated in revert by the latter who also conceive it as auditors obligation). Auditors are no more fraud detectors or number crunchers but professionals who look into the entirety of organisation (Farrell & Franco, 1999). Therefore, the implied motive behind the new developments is to service the clients in better ways emphasising the prominence of ensuring the wellbeing of the clients amongst the audit firms. Thereby, the contemporary auditor acts as a business consultant deviating from the main role as an independent assurer which was also brought to light in studies of Mennicken (2010); Shore and Wright (2018). Moreover, with the enhanced reporting requirements, independence measures and compliance requirements, verification processes, workload etc. have increased, heightening the complexities of the work and the role performed (Dennis, 2010). All of above highlight the increased expectations, compliance requirements, complexities, workload and the widened role of auditor unlike earlier days (Andon et al., 2015).

Hence, according to the data gathered and the literature reviewed, the core function of providing an independent opinion has unchanged, yet, the scope of auditor has expanded and become more complex due to the changes in the operating environment and increased expectations of stakeholders. Therefore, the contemporary auditor revolves around the client and evolving, to be more relevant by facilitating the new audit: to enable value added audit; provide high quality audit; creating space for the special purpose audit, to ensure independence and other ethical values amidst new incorporation of services, to meet the heightened reporting needs of users.

6. Conclusion and Implications

The study explored how the changes have transformed the fundamental features in audit with special emphasis on auditor independence and audit reporting and how those changes have transformed the auditor's role, in micro level. Based on the nature of questions, a qualitative case study approach was carried out in the Sri Lankan context drawing evidence from ABC firm, one of big four audit firm.

The study revealed that the fundamentals of auditor independence, audit reporting and the auditor's role have unchanged, however, the blur in the boundaries and the constant changes in operating environment, have expanded and enhanced the audit features. Consequently, have led to the transformation in audit profession, witnessed through ABC firm, responding to the changes in the operating environment. Thereby whilst the core function of audit continues to remain the same, the scope of audit has expanded by incorporating value addition audit; quality focused audit; user centric reporting; heightened independence measures and consequently widening the scope and role of auditor. The overall developments witnessed in the audit firm and the profession themselves highlight the focus towards clients and the road towards commercialisation.

Since the study extends the knowledge on changes in audit profession especially in micro perspective, it covers the gap existing in the literature by providing insights into the changes in fundamental features of auditing aiding a comprehensive picture on the changes in independence, reporting and auditor's role. In addition, the findings of the study provide a practical guidance on how the audit profession shall adopt the changes required; amalgamate regulatory and ethical guidelines in order to create and promote

a favourable audit climate for the profession etc. Further, the professionals (auditors) will be able to build their profile incorporating the contemporary features and develop the skills required in due course.

As the study has explored using only three fundamental features, further research can be developed using other features auditing. Further, using multiple cases in different contexts will enable to explore how the context itself acts as a driver to change auditing.

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Annexures

Table 1

Independence Assurance measures practiced by ABC

Measures	Description
1. Risk Management Process	A screening process to ensure independence before the acceptance of client engagement - Global Know Your Client (KYC), Client evaluation, Engagement evaluation etc., undertaken through a centrally monitored database of the global
2. Global query system called sentinel	Available to get global approval and the audit clients are thrown out of the system at the beginning itself if it is identified for any non permissible services provided in parallel to audit, even for permissible services/non essential services (different service lines) the nature of the service will be reviewed by the risk management team and upon the approval of the partner of the risk management team, will be handled by different partners and will be communicated to the audit committee
3. Behavioural inducing programmes	Independence is behavioural therefore mandatory independence training; annual programmes; online test etc. are conducted
4. Audit committee	During engagement if there are any issues it will be reported to the audit committee
5. Fees composition	Assurance that none of the audit fees are significantly high individually or very significant in a Portfolio

6. Investments restriction	Investments in any of the clients whether audited or audited by somebody else investments are restricted and staff has to declare monthly/quarterly that they do not have significant investment
7. Limitations in banking transactions	Arms length transaction needs to be maintained with client banks.
8. Maintenance of Risk register	To record risks in register
9. Monitoring mechanism imposed internally	Review team, risk management team and global firm mechanisms adopted internally have increased
10. Restrictions to client relationship	Formerly communicated individually to clients prohibiting them to provide any compliments/gifts etc. or invite for any special programmes like dance etc. and sponsorship from client has been prohibited
11. Provision of client independent declaration annually and during engagement by the professionals	During each engagement and even annually employees, professionals conducting the audit have to sign off confirming their independence with the clients.
12. Confidentiality Agreement	The firm also sign a Confidentiality Agreement with its client to assure data privacy and confidentiality of the competitive information

Source: Developed by Author

Annexure 2

Table 2

Audit Reporting changes in ABC

Audit Reporting changes	Description
1. Content	<ul style="list-style-type: none"> a. Opinion b. Basis of opinion * c. Material uncertainty related to going concern (if any) * d. Key Audit Matters (KAM) * (only for listed companies and others if auditors deem appropriate) - addressing any significant event/risk, demonstrating any judgements that management have considered with regards to the audited

	areas, providing disclosures on audit procedures conducted by the auditors etc. *
	e. Information Other than the Consolidated Financial Statements and Auditor's Report Thereon. *
	f. Director's Responsibilities.
	g. Auditors' responsibilities.
	h. Report on the other legal regulatory requirement.
	i. CA membership number of the audit partner (engagement partner) * - Highlighting the change in responsibility
	* New Additions to the Report as per new and revised reporting requirements
	** (a-i) depicts the new order of content in the audit report
2. Nature of information	Increased weightage of qualitative information (with the addition aforementioned new information in reporting)
3. Length of Report	Increase in the length of report from one to two pages to inculcate the new additional information (Ability to include Appendix)

Source: Developed by Author; International Auditing and Assurance Standards Board (2015)

Annexure 3

Table 3

3 way / level of quality measures of ABC

Level of Quality measures	Quality measures
1. Firm level	Quality Assurance Unit (QAU); Conducting Learning and Development (L&D) programmes; Modern documentation tools; ABC's Company specific Audit Methodologies; Business Risk Auditing (BRA) – focusing on risks of organisation, Root cause analysis; Introducing data analysts; Information Risk Management Unit (IRM); Audit support team; Actuarial Team etc.
2. The Regulatory authority level measures	Measures by Sri Lankan Accounting and Auditing Standards Monitoring Board (SLAASMB); International standard on quality control (ISQC) and measures by Securities Exchange Commission, CSE (Colombo Stock Exchange) and other monitoring authorities etc.

3. Global firm level measures (ABC Global) Global reviews known as Global Quality Performance Reviews (QPR); Rating partners of the firms in terms of quality etc.

Source: Developed by Author

**ENVIRONMENTAL MANAGEMENT ACCOUNTING
PRACTICES OF LOCAL GOVERNMENT AUTHORITIES: WITH
REFERENCE TO SOLID WASTE MANAGEMENT IN
COLOMBO MUNICIPAL COUNCIL**

Dampe, D.D.N.S.

Department of Accounting, Faculty of Management and Finance, University of Colombo
ddnipuna@yahoo.com

Rajapakse, B.

Department of Accounting, Faculty of Management and Finance, University of Colombo
r mrb_rajapakse@dac.cmb.ac.lk

Abstract

This study explores the current level of Environmental Management Accounting (EMA) practices adopted in Sri Lankan local government authorities regarding Solid Waste Management (SWM) and the factors influencing use of such EMA practices. The study adopts a single case study approach selecting Colombo Municipal Council (CMC) as the case. Data was gathered through in-depth interviews and document analysis. The evidence gathered shows that a significant amount of EMA information is collected and used in SWM decision-making. Further, it was found that regulatory pressures, influences from the local community, and the educational background and training of SWM professionals have mainly influenced the use of such EMA information. This study provides significant theoretical contributions by explaining how the institutional pressures can shape the adoption of EMA in local authorities by looking through the lens of institutional theory. Moreover, this study provides valuable insights for local government authorities as well as government regulators on how EMA can be used to implement more sustainable solid waste management practices.

Keywords. Solid waste management, Local government authorities, Environmental management accounting practices, Isomorphism, Institutional theory

1. Introduction

The natural environment provides the basis for society and its sustainable development. The short-term focus on economic benefits has led the organisations to believe that organisational practices which are harmful to the environment are economically cheaper than the practices that do prevent or reduce such harmful impacts. This illusion has resulted in externalising environmental costs where the cost of environmental damage is often not paid by the producer of such damage (Othman et al., 2017). However, due to the emergence of numerous environmental issues over the past years, sustainability and the protection of the natural environment have gradually become a major concern of regulators, environmental activists, and society in general. This has created a pressure for the organisations to be more accountable towards the environment. Hence, accounting is now facing pressure to account for the environment not only by its conventional practice of external reporting and disclosure but additionally through managing organisations' environmental performance by considering environmental aspects in management decision making (Olaoye & Adekanmbi, 2018). As a result, a new branch of accounting named Environmental Management Accounting (EMA) emerged to address this issue (International Federation of Accountants [IFAC], 2005). EMA provides an important terminology and a language for identifying, measuring, evaluating, and communicating organisations' environmental performance. Therefore, EMA can be identified as a management practice that is equally relevant for both public and private sector organisations (Bennett et al., 2003).

Among the major environmental issues currently faced by Sri Lanka, managing solid waste takes a prominent place. Until the early 1980s, waste management was not a major issue in Sri Lanka. However, after economic liberalisation in 1979, the rapid industrialisation and urbanisation resulted in a significant increase in the level of waste generated (Gunaruwan & Gunasekara, 2016). Sri Lanka's waste collection and disposal responsibility is in the hands of local authorities as per the powers vested by the Local Authority Acts. These local authorities collect 3242 metric tons of waste per day, where the amount of daily waste collection in Western Province amounts to 1783 metric tons (Hikkaduwa et al., 2015). Inefficient SWM has created severe social and environmental impacts. The tragic landslide of Meethotamulla garbage dump in April 2017, where 32

people lost their lives while more than 100 houses were destroyed, is the most recent example of this situation (Gunarathne et al., 2018).

Lim (2011) highlights the need to identify the adverse impacts of SWM and assign a monetary value to those to minimise its social and environmental impacts. Qian et al. (2011) also emphasised that effective sustainable waste management demands more reliable and accurate accounting information to evaluate and monitor SWM practices' economic and environmental efficiency. Therefore, EMA can be identified as an effective solution for this as it encourages making effective decisions using a wider spectrum of information in SWM activities (Qian et al., 2018).

Even though a major concern was raised as to whether the planet is safe in the hands of private sector organisations, less focus was given with regards to public sector organisations (Bennett et al., 2003). Researchers such as Burritt (2004) and Othman et al. (2017) have emphasised the need to conduct further research on informational needs for practical decision making with regard to environmental impacts of public sector organisations such as local governments. Similarly, in Sri Lankan context, even though several investigations have been carried out focusing on EMA practices in corporate sector, EMA practices in public sector organisations can be identified as an unexplored area. This dearth of studies has led to conduct this research with the aim of identifying how EMA is used in Sri Lankan public sector organisations, particularly in local government authorities. SWM is a prominent service under the scope of local authorities. Therefore, the EMA usage in management of Solid Wastes by Sri Lankan local government authorities is the primary focus of this study. Hence, this study explores the following research questions:

1. What is the current level of EMA usage in local government authorities for Solid Waste Management?
2. What factors and how they influence the use of EMA practices in local government authorities to improve Solid Waste Management?

2. Literature review

2.1 Emergence of environmental management accounting as an accounting interface

According to existing literature, conventional accounting practices do not provide sufficient information for an effective environmental management as it typically focuses solely on improving the economic performance of the organisations. Hence, it overlooks the external costs of environmental pollution and depletion of natural resources and does not separately identify, classify, measure, and report environment-related information (Burritt, 2004). Such limitations within conventional management result in management misjudgments regarding adverse effects arising from poor environmental performance and the future savings arising from enhanced environmental performance (IFAC, 2005). Therefore, the attention of organisations was driven towards new, innovative, and cost-effective approaches to minimise their environmental impacts (Bennett et al., 2003).

The concept of EMA emerged as a separate branch of accounting to overcome the limitations of conventional accounting in managing the environment (IFAC, 2005). Bennett et al. (2003) state that EMA serves as an interface between management accounting and environmental management by linking these functions for their mutual benefit. However, according to IFAC (2005), there is no universally accepted definition for EMA. Savage et al. (2001, p. 4), defines EMA as “the identification, collection, estimation, analysis, internal reporting, and use of physical flow information (i.e., materials, water, and energy flows), environmental cost information, and other monetary information for both conventional and environmental decision-making within an organisation.”

EMA procedures can be separated into two main aspects as Monetary Environment Management Accounting (MEMA) and Physical Environment Management Accounting (PEMA). MEMA deals with information regarding organisations' environmental impacts/ performance expressed in monetary units. PEMA deals with information on environmental related cost drivers, such as the amounts of usage of energy, water, materials, wastes, and emissions expressed in physical units (Burritt, 2004).

2.2 EMA practices in organisations

According to Bennett et al. (2003), implementation of EMA within organisations ranges from simple approaches such as external environmental reporting and auditing to more complex integrated EMA practices encompassing both monetary and non-monetary environmental information. EMA includes a broader range of accounting procedures and tools such as energy-related accounting, material accounting, carbon accounting, bio-diversity accounting, life cycle analysis, environmental capital budgeting, activity-based costing, and environmental impact assessment (Gunarathne & Alahakoon, 2016).

Burritt (2004) states that public sector organisations also have a major responsibility in providing leadership in promoting sustainability and environmental commitment of the industry. Agreeing with this, Savage et al. (2001) emphasised that in order to promote EMA adoption in the industry, it would be more effective if the government organisations adopt EMA practices themselves.

Ribeiro and Guzman (2010) state that adopting environmental management practices has increased the informational needs of public sector organisations regarding the environmental impacts relating to their operations and the effectiveness of the outcomes of their actions taken to minimise the environmental impacts. For that, their accounting systems must be modified to produce and deliver these environmental information for internal decision making and external reporting.

Nogueiro and Ramos (2014) have identified environmental training, environmental management systems, environmental auditing, sustainable public procurement, environmental and sustainability reporting, sustainability indicators and sustainable development strategies such as agenda 21 as EMA practices and tools used by Portuguese local authorities.

2.3 Solid waste management (SWM)

According to World Bank (2019), in the year 2016, 2.01 billion tons of solid waste was produced around the world, and this amount is expected to increase by 70% by the year 2050, where the total level of solid waste generated is forecasted at 3.40 billion tons. Therefore, SWM can be identified as a major environmental and social crisis faced by

the current world, particularly in developing nations (Vitharana, 2016). SMW is a discipline involved with not only the control of solid waste generation but also collection, storage, transfer and transport, processing, and disposal of solid wastes in a way that it complies with the best principles of public health, economics, engineering, conservation, aesthetics and other environmental considerations (Tchobanoglous et al., 2002). Waste management is an essential municipal service for which the general public pays for in terms of taxes and levies. It should be conducted in a sustainable, efficient, and socially acceptable manner. However, in most cases, SWM requires much more funds than the budgetary allocations of the local authorities, making it typically impractical to effectively manage the growing levels of solid waste in cities (Mungure 2008). Even though local authorities have taken various measures to sustainably manage the solid waste issue, it is considered a somewhat challenging task due to various inefficiencies (Vithrana, 2016). Lack of proper implementation of SWM operations has resulted in many issues in Sri Lankan urban areas. A major barrier to this is the lack of sufficient information on the adverse impacts of solid wastes (Hikkaduwa et al., 2015).

2.4 Contribution of EMA in improving SWM

Traditionally, only the operational costs involved in waste management procedures are included under conventional accounting. Hence, it provides only a narrow range of information for the decision-makers (Qian et al., 2011). Lim (2011) argues that local governments' efforts to control SWM through various measures such as restructuring of waste services and promoting reduction at source would not be successful without complete information. Tchobanoglous et al. (2002) also highlighted the need of information on various aspects of SWM including environment, health, and safety impacts as well as costs of alternatives for landfilling, combustion, or incineration of waste. Moreover, Mungure (2008) stated that keeping records of information on waste generation and collection in terms of its quantity and its composition enables the management to make better decisions to deal effectively with various types of waste and waste flow streams.

EMA is identified as an effective solution for SWM since it facilitates separate identification of a broader range of waste related accounting information, including

direct, indirect, monetary, and non-monetary as well as internal and external environmental related information (Qian & Burritt, 2007). According to United Nations Division of Sustainable Development (UNSD, 2003), EMA facilitates a more accurate identification, assessment, and management of costs and savings related to waste management. They stated that when compared to other areas, a relatively simple application of EMA in the area of waste management can result in larger cost savings due to the ease in defining the costs involved with handling and disposing of waste. It should be emphasised that with the use of effective environmental management approaches such as EMA, local governments can play a major role in achieving sustainable waste management targets in a way which it effectively meet the needs of the community as well as the future generations (Qian & Burritt, 2007).

2.5 Motivations and determinants for EMA usage in public sector organisations

Many researchers have identified major determinants behind the adoption of EMA in local authorities as regulatory pressures and community expectations on organisations' environmental performance (Qian et al., 2011; Othman et al., 2017; Ferdous et al., 2019; Qian et al., 2018). Ferdous et al. (2019) states that regulatory pressures and community expectations have influenced those organisations to give more value to environmental sustainability, enhance their environmental performance, and modify their existing reporting practices. However, Qian et al. (2011), points that these pressures from community and policymakers should be attended to under proper guidance with critical analysis of costs, benefits, and risks for the optimal usage of environmental management policies.

The size of the organisations was considered as another factor that determines EMA adoption in public sector organisations (Emilsson & Hjelm, 2002; Nogueiro & Ramos, 2014; Ribeiro & Guzman, 2010). Nogueiro and Ramos (2014) state that larger local authorities generally have adequate financial and human resources and also the ability and willingness to adopt such practices when compared to small local authorities.

Moreover, researchers such as Ball (2005), Qian et al. (2011), and Qian and Burritt (2007) have identified that operational complexities as another factor behind the adoption of EMA in these organisations. When considering waste management in local

authorities Ball (2005) states that when waste and recyclables management procedures are more complex local authorities become concerned on adopting new environmental management solutions.

3. Methodology

3.1 Research context and collection of data

Colombo Municipal Council (CMC), the municipal governing body for the city of Colombo, is the premier local government authority in Sri Lanka which handles the highest amount of waste generated within a city. CMC is the responsible authority for undertaking waste management and planning within their territory. The council has a separate SWM division, which is fully responsible for the collection, transportation, and disposal of municipal solid waste within the city. The SWM division of CMC is headed by the Director Engineering SWM with the support of qualified engineers. Skyrocketing increase in waste generation levels has become more of a socio-political matter in the city. SWM division continuously undertakes various efforts to find solutions for this critical matter through proper planning and managing solid waste within the city (CMC, 2015). As a result, CMC has been able to achieve approximately 100% of waste collection coverage within the city (Japan International Cooperation Agency [JICA], 2016). Hence, it was decided that SWM in CMC as the most appropriate case to explore the use of EMA for SWM in local government authorities. For the administrative purposes of CMC, the area of Colombo city is divided into six administrative districts. At present, Council has outsourced 100% of the city's cleaning services and 50% of waste collection and transportation (CMC, 2015).

This study explores the current level of usage of EMA practices? in CMC by identifying what EMA information is collected and how such information is used for decision making on SWM practices. Moreover, it explores what factors and how they influence the use of EMA practices in SWM. Such a study requires an in-depth analysis of the relevant organisational context and more detailed explanations with adequate evidence. Hence, it was decided that the qualitative methodology would be most suitable to carry out this study as it provides a deeper understanding of a particular phenomenon (Silverman, 2005). According to Yin (2003), case studies are the most appropriate approach to a study where “how” or “why” questions are used to investigate a

contemporary phenomenon over which the researcher has little or no control, and the boundaries between phenomenon and context cannot be clearly identified. Therefore, considering the nature of the research questions, it was decided to employ the case study approach in this study.

A pilot study and the main study were conducted to gather information, and data was collected through multiple sources, including interviews and document analysis. Mainly, the data was gathered through one-to-one in-depth interviews with top-level managers who are well experienced in decision-making regarding SWM and planning. Five key informants were interviewed, including the director and the deputy director of SWM division, district engineers of two CMC administrative districts, and the works division's current director. Moreover, secondary data sources such as the council's administrative reports, government legislations, and policy documents were used to support the data gathered through interviews there by to improve the credibility of the findings. The gathered data was analysed using the thematic analysis based on a set of pre-defined themes such as direct physical and monetary information, indirect EMA information, information on externalities, factors influencing the use of EMA, and several other themes that appeared subsequently during the analysis process.

3.2 Theoretical framework

This study uses the New Institutional theory to explain the factors influencing EMA adoption in SWM by local government authorities. This theory explains how institutional forces such as the government, professional bodies, and society shapes the organisational structures and actions, resulting in homogeneity in the institutional field. This process is known as isomorphism (DiMaggio & Powell, 1983). There are three mechanisms through which institution isomorphism can occur. Those are coercive pressure, mimetic pressure, and normative pressure. Coercive pressures are mainly exerted by the other organisations, upon which a particular organisation depends for obtaining resources or support and the expectations of the society in which they operate (DiMaggio & Powell, 1983). Wang et al. (2018) state that those standards and regulations can either be compulsory with the aim of command and control or otherwise they can be incentive instruments.

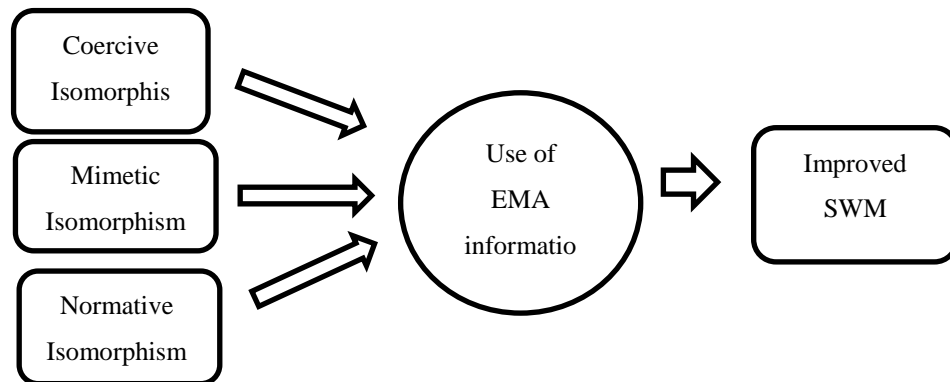
Normative isomorphism deals with values and norms considered unwritten rules and regulations that affect peoples' behaviour. Such values and norms stem from cultural expectations or changes in society and also from professionalisation (Qian & Burritt, 2008). According to DiMaggio and Powell (1983), professionalisation occurs through formal education and the development of professional networks. When considering the effect of normative pressures on EMA practices in organisations, Wang et al. (2018) stated that industry, trade associations, and professional groups contribute to establishing basic norms in implementing EMA. They create awareness and develop and issue certain guidelines and recommendations on implementing environmental management practices.

Mimetic pressures arise from organisations' willingness to adopt proven practices of successful organisations in their field when they face ambiguous situations (DiMaggio & Powell, 1983). Wang et al. (2018) argue that when rivals gain benefits from EMA implementation, organisations would copy their rivals and try to obtain a competitive advantage even if they might not properly understand the concept.

When it comes to SWM, there is a dearth of theoretical explanations that describe the increasing concerns of organisations towards sustainable waste management practices. Researchers have proposed to use management theories to explain this, as waste management is an organisational practice (Gunarathne, 2014). New institutional theory can be identified as one of the major theoretical perspectives in accounting research. It provides the foundation to explore how and why organisations are willing to adopt different environmental management practices as a response to various institutional pressures and why there are variations in adoption rates of such practices in different organisations (Brammer et al., (2011). Hence, researchers decided that New Institutional Theory is well suited to explain the influence of institutional factors on EMA adoption. Figure (01) shows how the isomorphic pressures influence the use of EMA in SWM.

Figure 1

Isomorphic pressures on the use of EMA in SWM



4. Findings and Discussion

4.1 Level of EMA usage in SWM by CMC

In order to determine the Level of EMA usage in SWM in CMC as Savage et al. (2001) applied, it was decided to identify how much EMA information is used in SWM and how such information is being used in decision making with regard to SWM.

To identify how much of EMA information is used by CMC in SWM, this study used an information index developed by Qian et al. (2011) with required modification fit to the current research context. This index comprises a comprehensive list of EMA information used in SWM. Based on this information index, Qian et al. (2011) have categorised SWM related EMA information under three main categories.

- Direct physical and monetary information on waste streams and activities;
- Potentially hidden information in overhead accounts and future periods; and
- Environmental externalities (Costs incurred/ or benefits received from external environmental impacts of waste streams).

During the pilot study, several differences were identified in the classification of municipal solid waste in CMC compared with the information index developed by Qian et al. (2011). Therefore, by adding some additional information items identified during the pilot study information index by Qian et al. (2011) was modified to reflect the current waste management practices of CMC.

The interviewees were provided with the information index and were asked to select the EMA information items which they collect and use for SWM activities. Further, they were asked to provide reasons for not identifying several information items that they had not selected. Tables 1 and 2 (in annexures) summarise this study's findings on the EMA information items collected by CMC.

When it comes to direct physical and monetary EMA information, each district office of CMC collects the relevant information through weighbridge records, records in recyclable collection centres, and administrative districts where waste collection and transportation is outsourced. This information is obtained through weekly and monthly reports provided by outsourced companies.

With regard to direct physical information, CMC identified 5 out of 10 (50%) information items in the index provided (Table 01). However, complete figures were not identified for information items such as the quantity of total recyclables collected and the quantities of different recyclables collected. In explaining the reasons for this, Director Engineering – SWM stated that,

For recyclables we don't have the official figures because the valuable materials are taken out and sold to "junk shops" by the collection workers and get the money before those are brought to the collection centres. We are also not discouraging them because at least we can reduce the quantity sent to the dumpsites and in the meantime they are indirectly helping the recycling.

CMC identified 8 out of 12 (67%) direct monetary EMA information items (Table 1). However, some information items were not completely available rather; they were partially available. The information was only partially available regarding total collection costs and revenues for degradable, recyclable and non-recyclable waste. This was mainly because such collection cost and revenue details were not obtained from the contractors in the three outsourced districts. Only the quantity information was obtained. In the other three administrative districts where waste collection is done by the CMC itself, the revenue information on both total recyclable sales revenue and sales revenue from different recyclables were identified separately. But interviews revealed that these revenues from sale of recyclables are not considered as an income for the

council rather it is distributed among the collection workers. Collection costs in terms of different recyclables were not separately identified by CMC due to the complexity and the extra cost which would be incurred.

When it comes to integrated quantity and cost information, the interviews revealed that CMC only identified total disposal costs per ton and collection cost per ton. Other integrated information items were not calculated. There was still no particular reason for identifying such integrated information, and such information was not much used in detail in decision making.

In addition to direct environmental costs, waste management processes involve a range of indirect costs as well. Qian and Burritt (2007) state that even though these costs account for a considerable proportion of financial resources allocated for waste management, they are generally hidden in the overhead costs without a separate recognition as environmental-related expenses. However, CMC has identified all listed items of indirect EMA information (Table 02). A separate Solid Waste Education unit is established within the SWM division and such costs incurred for public education and awareness programmes are identified separately. When it comes to waste administration, reporting and auditing costs, it was found that only waste administration and reporting costs were available. Moreover, it was found that even if it is not directly available, when it is required CMC calculates landfill and disposal costs avoided via recycling and reduction to evaluate the performance of the council. Director Engineering (Works) stated that,

In case these information was needed for decision making, we can compare the present costs with the use of past records where landfilling was mainly used rather than recycling.

Future-oriented costs are hidden in the future periods and the costs that might or might not be incurred at some point in the future (United States Environmental Protection Agency, 1997). During the interviews, it was found that none of the future oriented information listed in the index was identified by CMC (Table 2). At present CMC does not own or operate any landfill site. Waste collected by CMC is dumped at the landfill site owned and operated by Sri Lanka Land Development Corporation (SLLDC).

Hence, discussion with the interviewees revealed that CMC did not identify any future-oriented costs associated with landfill sites. When it comes to anticipated costs of remediation and regulatory changes, interviews revealed that such costs were not identified due to the difficulty in predicting those. Similarly, Qian and Burritt (2007) also stated that for local authorities, it is difficult to identify future costs and impacts related to waste management. However, they emphasise that it is important to identify these costs in order for local authorities to assign adequate resources to minimise or prevent them.

Analysis of the interviews revealed that CMC does not identify any of the listed information items related to externalities of SWM (Table 2). However, it was pointed out that in the past, when CMC maintained landfill sites, they used to collect information on costs associated with controlling toxic and odorous landfill gas emissions, costs associated with landfill leachate collection, and treatment for protection of ground water. Further, they stated that CMC would collect information on environmental impacts generated through its operations with the commencement of waste to the energy plant. Hence the level of EMA information collected and used might vary depending on the council's operational requirements. However, apart from the above, the rest of the information items on externalities are completely ignored by the council. Justifying that key informants stated such information is quite difficult to quantify.

From Table 01, it appears that CMC has collected more direct monetary EMA information on SWM than direct physical EMA information on SWM. This is in contrast with the findings of the study of Qian and Burritt (2007), where they identified that NSW local governments are more likely to collect direct physical EMA information than direct monetary EMA information. Moreover, findings show that CMC was more likely to identify direct physical and monetary information on waste management than indirect or hidden information. Furthermore, it was identified that CMC had identified more total figures such as total costs and quantities of recyclable, non-recyclable and degradable waste collected rather than disaggregated figures such as costs and quantity collection, sorting and sale of different recyclables. Similarly,

Qian et al. (2011) found that local governments in NSW also have accounted for total figures more than the disaggregated cost and quantity figures related to SWM.

To determine how the identified EMA information is used in decision making, the interviewees were asked to explain how they use each EMA information item in planning and implementing SWM activities. However, during the interviews, it was identified that it is difficult and impractical to provide explanations on each of the information items individually. Hence, the interviewees preferred to provide detailed explanations on particular information items or groups of information items that are interesting.

In CMC, all the collected information is stored in a computer system, and they are presented in different forms such as tables and graphs in order to facilitate better analysis. Through the analysis of interviews, it was found that monetary EMA information is used for determining cost effective strategies for waste management. As an example, Deputy Director Engineering- SWM stated,

By analysing this cost information what we mainly try is to reduce costs of waste collection and disposal. Analysing the costs information, we identify particular activities which incur higher costs and decide on suitable actions to be taken to reduce such costs, so we can improve the overall efficiency of our SWM activities.

Similarly, Lim (2011) stated that proper identification, estimation, and monitoring of waste collection costs would assist in defining waste management strategies, maintain reasonable tax rates imposed on the citizens, and increase the efficiency of waste collection activities. Further, interviews revealed that monetary EMA information was also used for financial planning regarding SWM, such as preparing the SWM budget. Explaining this District Engineer 2 stated that,

Each district office is required to prepare budget plans for coming years and send to the head office. Also we should provide reports the on progress of achieving the budget. Waste collection, disposal costs and revenues for coming years are decided based on the cost and revenue figures of previous years.

Moreover, interviews revealed that by analysing physical EMA information such as quantities of each types of waste collected, CMC decides on suitable action plans to address the increasing waste generation levels. Further, this waste quantity information is used in planning future waste disposal projects. Explaining this, Director Engineering- SWM stated that,

By analysing this information on waste collection quantities we decide how much space is required for waste disposal sites. As an example when we plan waste-to-energy project, we use these data to decide the required capacity of the plant. Those days the waste collection was 750 MT per day. Aruwakkalu sanitary landfill was designed assuming 1200 MT per day will be collected from CMC.

On a similar note, Fakoya (2013) stated that through incorporating management accounting functions such as linking waste reduction targets to the budgetary process, using both physical and monetary systems to gather waste information, developing a reporting system incorporating waste reduction objectives, and measuring performance can improve organisations overall waste disposal and reduction strategies.

However, overall CMC has captured 19 information items out of 45 EMA information items listed in the index, which shows that 43% of EMA information items were identified and used for decision making for SWM by CMC. Hence the findings demonstrated that in CMC, there is a significant usage of EMA for SWM.

4.2 Factors influencing the use of EMA practices in SWM

In order to explore the factors which influence the use of EMA practices for SWM, the interviewees were asked questions on what motivates them to collect and use solid waste related EMA information in decision making. Relevant findings are presented below and will be discussed and analysed using the institutional theory.

In the interviews conducted with key informants, government regulatory pressures were identified as the most prominent influencing factor for EMA practices of CMC. Among these, legislations such as Municipal Council Ordinance, National Environmental Act (NEA), and national solid waste strategy and policy requirements were identified as the most common driving forces for CMC to collect and use EMA information.

Interviewees emphasised that without the relevant waste related information, it would be impractical to conduct waste management activities as per the requirements of such regulations.

In addition to these legislations and policies, another regulatory pressure that influences the EMA practices of CMC is technical guidelines on SWM issued by Central Environmental Authority (CEA), the main environmental-related government body in Sri Lanka. These guidelines cover the areas of SWM such as waste collection, transportation, incineration, composting, and sanitary landfilling.

Deputy Director Engineering- SWM stated that,

We conduct our solid waste management activities according to the guidelines provided by the CEA. They have recommended to keep a track of all these waste related information such as the origin of waste, quantity of solid waste collected and the quantity of solid waste sent to disposal site etc. further If we maintain landfill facilities, incinerators or composting facilities, we have to keep records on quantity of waste received for such facilities, ash collection, water usage, leachate collection, stack emissions etc. Even if these guidelines are not a legal requirement, we adhere to these guidelines and keep such records. So even though currently we use the disposal site of SLLDC, in past years where we owned landfilling and composting sites we kept records of all such information. At present it is a duty of SLLDC.

Another factor that was highlighted was reporting requirements for higher regulatory bodies. Interviewees stated that the council is required to report periodically to several related regulatory authorities such as the Ministry of Provincial Councils & Local Government Affairs, CEA, and Western Provincial Council. These authorities are the main parties responsible for preparing waste management plans, policies, and strategies at national and provincial levels. Such authorities collect these waste related accounting information for the purpose of preparation of future waste related strategies, policies, action plans, and also to monitor the performance of the local authorities.

Looking from an institutional theory perspective, it can be stated that these regulatory pressures imposed a compliance pressure for CMC; and it has influenced CMC to

identify and use EMA information in SWM decision making. These regulatory pressures demonstrate a coercive nature given that those are imposed by the national and provincial levels on which local authorities depends upon, and will be legally sanctioned at non-compliance.

Similarly, researchers such as Qian et al. (2011), Qian et al. (2018), Othman et al. (2017), and Ferdous et al. (2019) have also identified that government regulations as a key driver for adoption of EMA and environmental reporting practices in public sector organisations.

However, the analysis of interviews did indicate that these government regulations haven't mandated EMA implementation within local authorities. Rather, the requirements under such regulations have influenced to adopt mechanisms to identify, monitor, and use waste related direct, indirect physical and monetary accounting information to improve the waste management practices. This argument has been evidenced in several prior studies conducted in both the public and corporate sectors. As an example, researchers such as, Qian and Burritt (2008), Latif et al. (2020), and Qian et al. (2018) emphasised that even though most of the countries do not have mandatory regulatory requirements specified for EMA, regulatory changes and developments in the area of environmental protection act as a coercive pressure for implementation of EMA. Latif et al. (2020) justify this by arguing that governments play an important role in environmental protection and therefore strongly influence the organisations' pro-environmental behaviour and environmental decision-making.

Apart from government regulations, Influences from the local community was identified as another major driving force behind using EMA information in SWM. Being the municipal governing body of Colombo, CMC is entrusted by the community for keeping the city clean and ensuring a safe environment. This moral pressure seems to have influenced the waste management practices of CMC. Views of the interviewees shows that CMC takes it very seriously that they have a moral obligation to provide an adequate, promptly and environmentally friendly waste management service that meets the community's needs. Director Engineering – SWM explained that,

We are here to serve the community. Our vision is also to provide a better living standard and good health to both the community and the floating population. So, when it comes to waste management we always try to provide an efficient and affordable waste management service. For that we collect all such information that we think as essential to perform our job well.

Moreover, the local community's concern about councils' waste management practices has also created pressure for CMC to implement EMA practices. All the public services provided by CMC, including SWM, are funded through tax and rates payments of city's residents. Interviewees highlighted that community is heavily concerned whether their tax payments are effectively allocated for services provided by CMC. Hence, EMA information was considered highly useful to manage the community's funds wisely and cautiously in providing waste management services. Further, it was noted that information such as direct physical and monetary EMA information was used to communicate the council's progress in waste management to the local community and justify the rates and taxes charged from residents and commercial bodies. This supports the argument of Ribeiro and Monteiro (2018), that environmental management of local authorities is an important strategic issue that goes beyond just compliance with laws and regulations. Similar results have been evidenced in prior studies such as Qian et al. (2011), Qian et al. (2018) and Ferdous et al. (2019) where it was identified that local communities have a significant influence on use of EMA in public sector organisations.

Qian et al. (2011) argue that, local community's environmental expectations can influence local governments through a coercive process as disregarding such expectations might result in loss of local governments power and also it may affect local governments through a normative process by creating a moral pressure on local governments' waste management practices. The findings of our study also correspond with this argument as the local community's expectations on CMC's waste management practices can be identified as a coercive pressure, and on the other hand, CMC's moral obligation as a responsible body for its local community has acted as a normative pressure for using EMA information in SWM.

However, Qian et al. (2018) has argued that due to the lack of knowledge of the general public on hidden costs, lifecycle costs, and externalities of waste management operations, they might not be able to create sufficient pressure to motivate local authorities to consider the full scope of EMA information ranging from direct to indirect information and information on externalities.

Formal education influences the way individuals act and addresses various issues (DiMaggio & Powell, 1983). Analysis of the interviews revealed that educational background and training provided for the waste management professionals of CMC has also posted a significant influence on the use of EMA information in waste management decision making. Key decision-makers involved in the waste management of CMC are qualified engineers. It was noted that there is currently no active involvement of accounting professionals in waste management decision-making in CMC. Key informants emphasised that from deciding on waste collection and disposal methods to financial planning for SWM, activities are under the work scope of engineers. All such decisions are highly influenced by the technical and practical knowledge they gained through their education and professional training. However, it was noted that even though the interviewees are not exposed particularly to the concept of EMA, the specialisation they gained through education and training has lead them to consider environmental impacts of SWM seriously and use the required EMA information for an efficient management of solid waste. Deputy Director Engineering- SWM stated that,

Waste management is highly environmentally sensitive area. So it is a must that this should be handled by a qualified staff. That's why we have a separate solid waste division and all the top managerial staff are qualified engineers and they always take sustainability aspects in to consideration when making decisions. So preparing route plans for waste collection by doing a time-motion study, observing the waste composition and deciding on proper disposal methods, preparing tender documents for contractors, planning the expenditures for waste management, finding innovative solutions for city's increasing waste problem; all these functions need the expertise of engineers. And they know exactly what information is required to perform all these works.

Further, it was noted that CMC provides training opportunities for waste management staff and keep them updated. These training resulted in broadening the range of aspects that are considered in decision making and increased the informational needs for SWM. According to the institutional perspective, it can be argued that educational background and training provided for waste management professionals has created a normative pressure to use EMA information in SWM. On a similar note, studies by Gunarathne and Hoon Lee (2014) and Jalaludin et al. (2011) have found that normative factors such as educational background and job training play a vital role in the environmental role of the organisations and influence the EMA adoption of organisations. They argue that without the required knowledge of the employees, the importance of EMA information would unlikely be recognised by organisations.

When the key informants of this study were asked whether peer local authorities' waste management practices influence them to collect and use EMA information, all answered "No. They stated that even though they recognise better waste management practices of other peer councils at times, it is impractical to implement such practices within Colombo due to the limited space within the city and huge levels of waste generations compared to other municipal councils. Therefore, it can be stated that mimetic pressures haven't posed a significant influence for adopting EMA practices within CMC. However, in contrast, Qian et al. (2011) identified that mimicking pressure has a significant contribution to the implementation of EMA for SWM in Local governments.

5. Conclusion

This study was conducted to explore the current level of EMA usage of local government authorities in managing solid wastes and to identify the factors that influenced such EMA practices. Findings revealed that 43% of EMA information items are collected and being used for SWM decision making. Hence, it can be stated that there is a significant level of EMA usage in SWM within CMC. Moreover, analysis of the findings clearly points out that even though the concept of EMA is not generally well understood by the waste management professionals in CMC, its basic principles and procedures are used in managing solid wastes. They are well aware of the importance of relevant waste related physical and monetary accounting information.

Hence, it can be argued that, even though a comprehensive application of EMA is not available in CMC, given that they account for a significant amount of waste related EMA information, there is potential for a proper and systematic development EMA within CMC.

During the period of data collection for this study, the waste-to-energy plant in Kerawalapitiya was not started and was planned to start its operations in the near future. Hence, it should be emphasised that implementation of the waste-to-energy plant would be a turning point of SWM operations of CMC and the level of the EMA information usage would increase as a result, since CMC is planning to collect a range of EMA information, including information on externalities arising from its operations.

When considering the factors which motivate the use of EMA information, three main factors were identified, 1) Regulatory pressures; 2) Influences from the local community; 3) Educational background and professional training for SWM professionals. These factors were analysed looking from the lens of institutional theory. Findings revealed that these factors are mainly of coercive and normative nature. The findings of this study imply that even though government regulations haven't mandated the implementation of EMA practices, environmental-related requirements in such regulations have motivated CMC to collect and use required waste related EMA information. Therefore, developing laws and regulations, standards, and guidelines by the government specifically on EMA would be highly effective in promoting a more systematic adoption of EMA practices in local government.

At present, there is a dearth of knowledge on the current state of EMA adoption in Sri Lankan public sector organisations. Therefore, this study contributes to the existing literature on EMA. It provides valuable insights into the extent to which the Sri Lankan local government authorities have adopted EMA practices in managing solid wastes. Gunarathne et al. (2014) identified a lack of knowledge and awareness on EMA concepts, approaches, and tools is a major roadblock for EMA diffusion. Given the closer relationship between the natural environment and the SWM, this study provides important insights for the local government authorities as well as for government policy makers on the use of EMA ineffective management of major environmental-related costs and benefits regarding SWM. Further, this study shows that using the institutional

theory perspective can be clearly demonstrated how solid wastes are managed within a particular social system and how various forces arising from that social system influence the SWM practices and decisions involved in those activities. Further, findings imply that institutional pressures can shape the practices of public sector organisations given that they have higher accountability regarding their actions to various parties. Since this is a single case study, there may be some drawbacks in generalising the findings. Moreover, due to the prevailed Covid-19 situation of the country, data collection was not able to conduct as planned.

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Annexures

Table 1

Direct physical and monetary EMA information items on SWM

EMA Information on SWM	Availability	Special Comments
<i>Physical</i>		
Quantity of Degradable waste collected	Available	
Quantity of Non- Recyclable Waste Collected	Available	
Quantity of Non-Recyclable waste sent to landfill	Available	
Quantity of total recyclables collected	Available	} Complete figures are not available
Quantities of different recyclables collected	Available	
Quantity of total recyclables recovered	N/A	
Quantities of different recyclables recovered	N/A	
Contamination rate of total recyclables	N/A	
Contamination rates of different recyclables	N/A	
Quantity of waste incinerated	N/A	
<i>Monetary</i>		
Collection costs for Degradable waste	Available	} Only partially available
Collection costs for Non-Recyclable waste	Available	
Total recyclable collection costs	Available	
Collection costs for different recyclables	N/A	
Disposal costs for Degradable waste	Available	
Disposal costs for Non-Recyclable waste	Available	
Revenue from collection of trade refuse	Available	
Waste to energy sales revenue	N/A	
Total recyclable sales revenue	Available	} Complete figures are not available
Sales revenue for different recyclables	Available	
Total recyclable sorting and recovery costs	N/A	
Sorting and recovery costs for different Recyclables	N/A	
<i>Integrated</i>		
Disposal cost per ton	Available	
Collection cost per ton	Available	
Cost per ton for total recyclables	N/A	
Cost per ton for different recyclables	N/A	
Cost per household for total recyclables	N/A	
Cost per household for different recyclables	N/A	

Table 2*Hidden EMA information and information on externalities.*

EMA Information on SWM	Availability	Special Comments
<i>Indirect Costs (Costs hidden in overhead Accounts)</i>		
Public waste education and outreach costs	Available	
Administrative costs for waste management	Available	
Waste reporting and auditing cost	Available	Only Waste reporting costs were available
Landfill disposal costs avoided via recycling and reduction	Available	
<i>Future-oriented costs</i>		
Costs associated with expected closure of landfill(s) currently being used	N/A	
Expected costs of long-term post-closure, rehabilitation and monitoring of present landfill(s)	N/A	
Expected costs of landfill site and facility replacement	N/A	
Anticipated costs of regulatory changes	N/A	
Anticipated remediation costs (e.g. undiscovered and/or future release of contaminants from landfill sites)	N/A	
<i>Externalities</i>		
Environmental benefits from current recycling services (e.g. recovered resources)	N/A	
Environmental impacts generated by current recycling services and disposal activities	N/A	Expected to be identified on waste to energy plant
Economic value of resources being buried as waste in landfill	N/A	
Costs associated with reducing greenhouse effects contributed by waste streams	N/A	
Costs associated with controlling toxic and odorous landfill gas emissions	N/A	Even though not available at present, these costs were identified in the past
Costs associated with landfill leachate collection and treatment for protection of ground water	N/A	

	when CMC maintained landfill sites
Costs associated with the loss of land capacity and value because of waste disposal	N/A
Costs associated with the loss of amenity because of waste disposal (e.g. dust, pest, litter)	N/A

MEASURING SUSTAINABILITY PERFORMANCE OF MANUFACTURING ORGANISATIONS IN SRI LANKA: BALANCED SCORECARD PERSPECTIVE

Peiris, H. S. H.

Department of Accounting, Faculty of Management and Finance, University of Colombo

Rajapakse, B.

Department of Accounting, Faculty of Management and Finance, University of Colombo

r mrb_rajapakse@dac.cmb.ac.lk

Abstract

This study aims to analyse how business organisations could incorporate sustainability perspectives into their strategic plan and apply a Sustainability Balanced Scorecard (SBSC) by a leading plantation sector company (TPC) in Sri Lanka. TPC is one of the largest multinational business conglomerates in Sri Lanka, with a history of around 140 years. This company has demonstrated a strong commitment to sustainability practices, and its sustainability strategy emphasises protecting the natural environment, social development projects, and activities for its estate workers. This study adopts a qualitative methodology and a single case study approach. Data collection has been carried out mainly using in-depth interviews and reviewing external and internal documents of the organisation and analysing past research findings. The main outcome of the study is to develop a framework to measure organisational sustainability performance through a balanced scorecard (BSC) based on GRI guidelines and past research findings. More specifically, the SBSC framework developed in this study is used to evaluate the sustainability performance of the TPC by linking its strategic objectives within the developed SBSC framework. The findings of this study would be a learning point to strategic level managers of TPC and other organisations to evaluate the overall sustainability performance of their organisations and make strategic decisions relating to sustainability. Moreover, this study provides in-depth information about how plantation sector companies would contribute to the overall sustainability value creation, other than just focusing on the natural environment.

Keywords. Sustainability, Sustainability performance, Balanced scorecard,

Sustainability balanced scorecard, Strategic objectives

1. Introduction

Business world development in the 21st century has resulted in the emergence of a range of megatrends, such as globalisation, technological development, climate change, renewable energy revolution, and the concern for sustainability. However, among all these trends, “Sustainability” is becoming more important in today’s world, as it creates a long-term value to the business organisation and the overall society. In earlier times, sustainability was considered a major aspect of environmental management practices, whereas in the contemporary business world, it is a more significant and powerful tool in strategic management. Sustainability concerns are typically considered as strategies of business organisations since those would influence the organisation’s image and reputation, profitability, competitiveness, markets, and products, which influence economic survival (Dias-Sardinha & Reijnders, 2005; Schaltegger & Wagner, 2006).

Although the role of sustainability has expanded in various aspects of management, it has been identified that the issue in understanding a better way to integrate sustainability in terms of performance measurements by the business organisations remains the same (Atkinson et al., 1997; Epstein & Roy, 2003). To provide solutions for this issue, many researchers have recognised various methods where business organisations could increase the effectiveness of their sustainability performance (Veleva & Ellenbecker, 2001). However, these methods are related only for reporting purposes and not to management decision making. According to Hitt et al. (2009), although some generally accepted frameworks and guidelines are accessible for reporting purposes, a specific guideline to measure sustainability performance cannot be identified. Further, Boerrigter (2015) has identified that there is still a lack of an appropriate method to measure the performance of organisational sustainability strategies.

The above issues in performance measurement tools were further addressed by introducing the concept of “SBSC” by Frank Figge, Tobias Hahn, Stefan Schaltegger, and Marcus Wagner at the Greening of Industry Network Conference in 2002. Further, they explained the way to incorporate environmental and social aspects into the

Balanced Scorecard (BSC) and showed how the three pillars of sustainability (economic, environmental and social) could be used to modify the traditional (basic) BSC. Nortje et al. (2014) stated that the SBSC mainly focuses on environmental and social aspects as the economic aspects which are already addressed in the financial perspective of the traditional BSC. However, Epstein and Wisner (2001) said that the perspectives of the BSC would not be the same for every organisation. Therefore, some companies combine environmental and social aspects into the traditional four perspectives, whereas others define sustainability under the internal business process perspective. The organisations that have identified the value of sustainability aspects may add a separate fifth perspective to the basic BSC. Many researchers have identified this SBSC as the most practical tool to analyse potential investments, which combines the three aspects of sustainability measurement (Jassem et al., 2018). According to Kerr et al. (2015), the SBSC is mainly designed to facilitate sustainability reporting into their management control systems by reflecting the issues and objectives of corporate sustainability.

It is obvious that the SBSC is providing possible solutions to overcome the issues of traditional BSC by linking sustainability into the company's strategy. The execution of this SBSC can be used in the areas of sustainability management, performance measurement, and planning (Bieker & Waxenberger, 2002). Some of the advantages that can be gained through the SBSC are building the organisation's reputation, strengthening the brand image, approval of a social license to operate, and the improvement of relationships with investors, agencies, banks, and well-managed business risk (Willard, 2005).

In the Sri Lankan context, although there are several studies available regarding the measurement of organisational performance through BSC, there is a dearth of studies that measure sustainability performance through BSC. Given this background, this research aims to contribute to sustainability performance measurement, developing a standalone SBSC that includes environmental, social, and economic aspects. Therefore, this research would be a useful addition to the current knowledge on "sustainability performance measures" as the prior researchers have identified sustainability performance measures as a limitation in their studies.

With the general increase of awareness of sustainability across the world, many business organisations endeavoured to implement sustainability practices into their operational activities. However, it has been identified that there are barriers to incorporate sustainability into the strategic plan and difficulties in measuring the effects of sustainability. When it is considered the existing literature in this area, it is evident that the absence of past research findings on this sustainability performance measurement and the inappropriateness of the current sustainability measures would make it difficult to evaluate the positive effects of sustainability on business organisations as a whole. However, a minor concern has been given by the researchers to investigate how these sustainability measures are considered in the strategic plan under practical scenarios.

Therefore, the problem of this study is to analyse how business organisations could incorporate sustainability perspectives into their strategic plan through the development and practical application of a separate Sustainability Balanced Scorecard. Further, it aims to identify the status of sustainability practices in the plantation industry and the general approaches used to measure such practices, the problems of the BSC structure referring to sustainability aspects, and recognise how sustainability perspectives could be incorporated into the strategic plan. So this study provides a valuable contribution to bridging the gap between sustainability and performance measurement systems.

The broader aim of this study is to identify how the plantation sector companies in Sri Lanka measures the sustainable performance of their business operations and how to enhance the outcome of those measuring practices by implementing a Sustainability Balanced Scorecard.

The study specifically aims to address the following questions,

1. What is the status of sustainability practices of the plantation industry, and what general approaches are being used to measure the performance of those sustainability activities?
2. How to incorporate sustainability perspectives into the strategic plan through the application of a Sustainability Balanced Scorecard (SBSC)?

By identifying the importance of measuring sustainability performance and the existing tools with their limitations, this study contributes to the existing literature by developing a standalone sustainability balanced scorecard framework for measuring the organisational sustainability performance. Using this framework will allow managers an easy and accessible way of managing critical issues regarding sustainability, investors in decision-making and regulators in implementing policies too. This study further contributes to the sustainability performance literature by identifying and categorising sustainability indicators from GRI guidelines and developing a conceptual framework to measure sustainability performance. Moreover, this study highlights the benefits that can be gained from the implementation of SBSC and how it could be integrated with the strategic plan of the organisation. Thus, this study extends understanding about the methods and tools that could be used to assess sustainability performance and conclude that the improved SBSC framework can measure organisational sustainability performance.

2. Literature Review

Early stage, business organisations did not focus much on measuring sustainability, whereas they were only concerned about financial measures such as Return on Capital employed (ROCE), Return on Equity (ROE), and Return on Investment (ROI) (Atkinson, 2010). However, those financial measures often measure the organisation's profitability. Thereafter, the area of performance measures was further expanded with the modifications and variations that occurred in the economic world and introduced a more measurement basis, which is not limited only to the financial measures (Kaplan & Norton, 1996). Further, Kaplan and Norton (1996) have argued in their study that monitoring and controlling financial measures of historical performance would not be sufficient for a competitive advantage that is driven by technology, competitiveness, and capabilities. Agreeing to the same argument, many successful business organisations have determined the importance of non-financial aspects of the business and their positive impact on the competitive advantage. Moreover, Ittner and Larcker (1998) and Neely (2005) have pointed out the inappropriateness of the traditional financial measures such as lack of strategic focus, being historically focused, and failing to provide relevant information for stakeholders.

The significance of other indicators, other than focusing only on financial measures when determining the overall performance, has been identified lately (Princ & Cater, 2015). Consequently, most of the business organisations used to advance their firm performance through defining Key Performance Indicators (KPI) and using other management control tools such as Economic value added (EVA), Activity-based costing (ABC) and the Balanced Scorecard (BSC). However, most of the above mentioned management control tools have their own limitations. Those limitations of incomplete management control tools in measurement and management have led to the increase of economic risks and problems for the organisation, the economy, and society (Abdelrazek, 2019). After appearing concepts such as CSR and sustainability, most of the researchers had become more interested in the integrated measurements of economic, environmental, and social performance (Lee, 2008). When it is considered about the sustainability performance measurement, researchers argue that company performance should have a broad scope that includes TBL, instead of only focusing on one aspect of company performance, such as financial performance.

Schaltegger and Wagner (2006) have identified that sustainability performance measurement aims to deal with social, environmental, and economic dimensions of corporate management generally and specifically in corporate sustainability management. According to Rashid, Sakundarini, Ghazilla & Ramayah (2017), sustainability performance can be defined and measured under the three categories: economic performance can be measured based on economic growth while protecting the environment and improving the quality of life, environmental performance. This highly depends on the use of efficient and cleaner sustainable energy sources, and social performance: this refers to the organisation's actual achievement in improving and maintaining the quality of life without neglecting environmental aspects. However, it has been identified that it is necessary to monitor and respond correctly to current trends that affect its operations to improve the company's performance. Meanwhile, Epstein and Wisner, (2001) stated that sustainability measures are usually quantitative (such as tons of greenhouse gas generated, percentage of water recycled, No. of workplace injuries, and employee retention rate) but not monetary. It makes it difficult to incorporate into traditional financial measures appropriately.

Further, Boerrigter (2015) has identified that the absence of stakeholder engagement, difficulty in integrating the strategy throughout the organisation, too many qualitative results regarding sustainability strategy, and too little time to give close consideration are some other reasons that the organisations face in evaluating their sustainability practices. Dias-Sardinha and Reijnders, (2005) have identified some incentives and barriers to sustainability performance evaluation. Those incentives include ability to evaluate direction towards sustainability, allowing for comparison between the business sectors, interest in shareholders and clients in sustainability performance measures. Barriers are lack of sufficient information about how to measure, no references to compare the results, not imposed by law, and no model of sustainability performance evaluation available that could be applied in stages.

There are various sustainability performance indicators and guidelines that could be used to measure and disclose the sustainability performance of an organisation, but not frequently used, such as Dow John's sustainability index (DJSI), Eco-efficiency analysis, the Dashboard of sustainability, the Barometer of sustainability index, Environmental performance sustainability, the Enterprise sustainability index, Eco-Management and audit scheme (EMAS) and the Global Reporting Initiative (GRI) (Atkinson, 2010). However, Hourneaux et al. (2018) has suggested that GRI or any other framework could not be considered a complete or ideal solution to measure the sustainability performance of a business organisation. For the reason that those frameworks are mainly focused on the external information needs of the stakeholders instead of satisfying the internal information needs of the strategic level managers. Consequently, business organisations need a systematic framework where they could readily evaluate and track their sustainability performance.

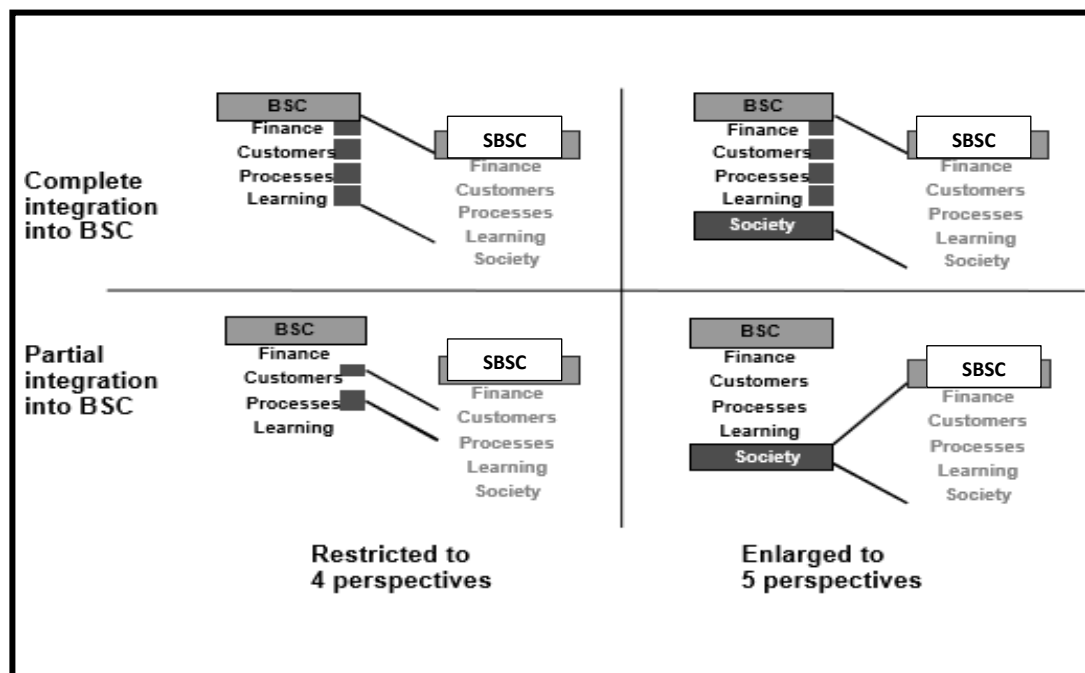
As a solution for that, several researchers have identified the capability of the SBSC for combining conventional strategic management with corporate sustainability management for two reasons (Figge et al., 2002). Firstly, it permits the management to address the business goals in all three dimensions of sustainability by linking economic, environmental, and social issues. In other approaches, it simply considers only one dimension. Secondly, the SBSC incorporates these three dimensions in a single integrated management system instead of using various tools for different dimensions.

Further, Epstein and Wisner (2001) identified that the SBSC translates organisations strategic objectives into actionable measures to assist organisations to improve their performance. Hsu et al. (2011) have identified a range of benefits gained from using the BSC to measure sustainability. They are “providing complete performance measures and perspectives, offer tighter and effective management system and tool and take care of internal/external, financial/non-financial, driving/outcome KPIs in a balanced way”. The SBSC, according to Hansen and Schaltegger (2014), gives the initial guidance for managers to make decisions regarding the integration of social and environmental objectives into the organisation’s performance management system.

As a result of these factors, researchers have developed extended scorecard designs under the names of sustainability balanced scorecard (Figge et al., 2002), sustainability scorecard (SIGMA, 2003) or approachable business scorecards (Tiwari & Panicker, 2017). By considering these facts, many researchers (Nicolau, Teodorescu, Constantin & Teodorescu, 2005; Figge et al., 2002) have suggested improving the traditional BSC concept with environmental and social indicators, which could also help with the sustainable development of the organisation. Epstein and Wisner (2001) have also proposed a social and environmentally BSC framework that highlights the key performance factors, encouraging the firms to plan more effectively their strategic objectives of sustainability management. Figge et al. (2002) have provided detailed procedures and steps for firms to create a SBSC and to recognise the relationships between BSC and sustainability. Figure 1 depicts four possibilities of integration of the BSC to SBSC which has been identified by Bieker and Waxenberger (2002).

Figure 1

Possibilities of integration of the SBSC to BSC.



Source: Bieker and Waxenberger (2002)

There are some arguments in the recent literature over which perspective these measures are to be included in or whether a fifth sustainability perspective in the balanced scorecard is suitable. According to Epstein and Wisner (2001), it can be generally decided by considering the drivers of success and how critical social and environmental performance is to the organisation's strategy and performance. In addition, it can be emphasised that this SBSC varies from the traditional BSC as it considers sustainability-related objectives and performance measures. It is a proper framework for integrating strategically relevant environmental, social and ethical goals (Epstein & Wisner, 2001).

When the business organisations set their business operations to sustainable management, they must choose how sustainable operations would be reported and assessed using a BSC. Answering this problem, many researchers (Nicolau et al., 2005; Krstic et al., 2008; Figge et al., 2002) have identified different approaches to integrate social responsibility and sustainable development aspects into the SBSC. However, among these approaches, Butler and Henderson (2011) identified the most preferred

ways to implement sustainability through the BSC model by evaluating the past literature.

- Adding a fifth perspective, a sustainability perspective to the traditional four perspectives of the BSC (Figge et al., 2002).
- Integrating identified measures of sustainability throughout the existing four perspectives of BSC (Figge et al., 2002; Epstein & Wisner, 2001).
- Developing a standalone BSC (Figge et al., 2002).
- Changing the original hierarchy of BSC and replacing the financial perspective with a sustainability perspective (SIGMA, 2003).
- Adding further perspectives to guide the financial perspective at the top (Woerd & Brink, 2004).

Developing a standalone SBSC, it includes sustainability measures in the basic BSC. Therefore, designing and implementing a separate SBSC is suitable for many companies who have no existing BSC but want to measure or integrate sustainability impact into performance measurement mechanism (Butler & Henderson, 2011). SBSC can also be applied for the companies that already have a basic BSC framework and for the companies that want to emphasise corporate sustainability as a key value or critical strategy without revising the original BSC framework.

3. Research Method

According to the nature of the research questions of this study, it requires an in-depth analysis regarding the relevant organisational context, the area of sustainability reporting practices, as well as more detailed explanations with the evidence gathered. Therefore, this study adopts a qualitative methodology and single case study approach where it seems to be the most appropriate method in addressing the research questions of the study. Concerning the choice of a company, researchers considered an organisation that provides a wide range of sustainability information and values through its operations. Finally, a company operating in the plantation sector (TPC) is selected as the research site of this study.

TPC is one of Sri Lanka's front-runner plantation companies, which produces high-quality pure Ceylon tea from seventeen tea gardens in the country. It has engaged in tea

plantation and processing operations spanning 16 estates and 15 factories in the high and low grown areas in the country, maintaining its status as one of the top tea plantation companies in Sri Lanka while protecting the environment and contributing to social development. Therefore, reasons for the choice of this company are bound with its size and significance within the country context; its existing concerns with social and environmental issues; its familiarity with adhering to the international and national sustainability standards and, finally, its accessibility and willingness to cooperate with the research project.

To achieve the objectives of the study, data was collected using both primary and secondary sources. Primary data was collected through in-depth interviews and observations as it was the possible way to obtain required information for the framework development, whereas secondary data was obtained through documentary analysis. Since the selection of interviewees are extremely important in a single case study, the informants were selected considering the objectives of the study, which are to identify the status of sustainability practices in the organisation and the general approaches used to measure such practices, to identify the problems connected to the structure of the BSC considering sustainability aspects and also to recognise how sustainability perspectives could be incorporated into the strategic plan through the development and practical application of a SBSC.

The key informants of the study include the Sustainability Manager, the Assistant Sustainability Manager, the Deputy General Manager – Finance, and the General Manager in Strategic Performance Management. Interviews were based on an interview guide that was conducted with the above mentioned top level managers by using face-to-face individual interviews and over the phone interviewing. Prior to the main study, a pilot study was conducted with the assistance of the sustainability manager to clarify the availability of data regarding the area of this research and to get permission to conduct the study. The interview questions composed of five areas, namely; status of sustainability in the organisation, strategic goals related to each sustainability dimension, appropriate KPIs for each goal, possible competitive advantages from implementing a sustainability strategy, and present methods of evaluating sustainability performance, was emailed in advance to the interview.

At present, as there is no BSC existing for the overall performance measurement of the selected organisation. This study aims to develop a standalone sustainability balanced scorecard model for sustainability performance measurement. When developing a BSC, SBSC, or any other performance measurement, at first, it requires identifying KPIs to the organisation. Here, relevant KPIs were developed based on past research findings and the GRI guidelines, which ultimately cover the sustainability performance and could be used comparatively within the organisations. GRI guidelines are used in this study, as they provide a user-friendly way to use sustainability performance indicators which are included in the annual report.

Rather than just taking the indicators and perspectives identified in the literature, this study aims to provide a detailed procedure for selecting a specific number of sustainability indicators for each BSC perspective based on the globally accepted GRI guidelines, as previously proposed by Nikolaou and Tsalis, (2013). According to them, advantages of this proposed method is that it facilitates businesses in various sectors to compare sustainability performance outcomes and inform more accurately and transparently to stakeholders about company's sustainability performance. When identifying the KPIs in developing a SBSC, GRI standards was taken as the base since several prior researchers and business organisations have used GRI guidelines to provide standardised and comparable report on the sustainability performance.

The proposed framework consists of three steps for the combination of BSC and GRI guidelines. In the beginning, GRI Standards were divided into the three main aspects of sustainability; economic, environmental and social (Table 1). Then those identified GRI indicators were divided with the four perspectives of the BSC. In this step, to ensure the validity of the selection process, the study done by Nikolaou and Tsalis (2013) was taken as the base (Table 2). Consequently, based on the GRI guidelines identified on the four perspectives, measurable and the most significant KPIs were selected (Table 3). Then the Non-GRI KPIs were identified based on the literature. Most of the KPIs were selected from the study of Hsu et al. (2011). Finally, 40 measures were identified covering four perspectives, namely; Sustainability, Stakeholders, Internal business process, Learning and growth. As this study adopted SBSC measures which

were used in the prior researches, it would enhance the validity and the reliability of this study (Table 4).

Finally, the KPIs have been recognised, based on the GRI standards, which are significant and measurable, and the core indicators that are common in past research findings. Figure 2 below represents the proposed classification of the identified KPIs in accordance with the four perspectives. The KPIs identified from the past research findings are written in italics. All the other mentioned KPIs are identified from GRI and significantly contribute to achieving the organisation's short and long term strategies.

Most of the below indicators were derived from the GRI guidelines, whereas the other indicators were taken from past research findings (Kaplan & Norton, 1996; Epstein & Wisner, 2001; Figge et al., 2002; Bieker & Waxenberger, 2002; Sidiropoulos, Mouzakitis, Adamides & Goutsos, 2004; Dias-Sardinha & Reijnders, 2005).

Figure 2

Developed SBSC in general form

Financial Perspective	Stakeholder Perspective
<ul style="list-style-type: none"> ● Environmental Investment ● Investments on social activities and community development ● <i>Recycling Revenues</i> ● <i>Revenues from Green Products</i> ● <i>Investments in TBL</i> ● <i>Cost related to TBL</i> ● <i>Energy cost savings</i> ● <i>Percentage of cost going back to the environmental protection</i> 	<ul style="list-style-type: none"> ● Investments on social infrastructure development ● Total local suppliers ● No. of new recruitments ● Retention rate of employees ● Average turnover rate ● Training hours of employees ● No. of beneficiaries on social activities and community development ● Operations with local community engagement and development programmes ● <i>Awards of Sustainability</i> ● <i>Community Investment</i> ● <i>Health and Safety of Employee</i> ● <i>Health and Safety of Customer</i> ● <i>Employee Satisfaction</i> ● <i>Customer Satisfaction</i>

Internal Business Process Perspective	Learning and Growth Perspective
<ul style="list-style-type: none"> • Materials used by weight or volume • Recycled input materials used • Total energy consumption • Reduction of energy consumption • Water withdrawal by source • Water recycled and reused • Reduction of GHG Emissions • Methods of water disposal • <i>Product quality and certifications received</i> • <i>Green Supply Chain Management</i> • <i>No. of safety improvement projects</i> • <i>Process improvements to reduce power consumption and carbon emissions</i> 	<ul style="list-style-type: none"> • No. of Employees trained • Training investment • No. of Health and safety programmes • Employee trained on health and safety • Health and safety training hours • Programmes for upgrading employeeskill • <i>R&D for Green Technologies</i> • <i>Environmental Information Systems</i> • <i>Employee Volunteer Hours</i>

The above developed SBSC contains four perspectives: financial perspective, stakeholder perspective, internal business process perspective, and learning and growth perspective. Its three perspectives, other than the stakeholder perspective, are similar to Kaplan and Norton's traditional BSC, whereas the "Customer" perspective is changed into the "Stakeholder" perspective to meet the increasing needs of all types of stakeholders who are engaged in everyday operations of the organisation as discussed in the literature of corporate sustainability management (Nikolaou & Tsalis, 2013). The proposed framework encourages business organisations in various sectors to compare sustainability performance outcomes and report them to stakeholders more accurate and transparent manner.

4. Data Presentation and Analysis

4.1 Background and the Case Organisation's Current Sustainability Practices

Prior to the year 2000, most of the business organisations considered sustainability as a separate part from its business strategies and performance evaluation because the economic performance measures are used as the main criteria to assess (Clarkson, 1995). However, in the contemporary business world, senior managers have implemented a sustainability culture within their organisations by adopting sustainability into the company's vision, mission, and other priorities (Adams & Gonzalez, 2007).

When the TPC is considered, as a global company, the organisation is currently dealing with 15 countries across 16 business sectors and have employed over 30000 employees. It is widely recognised as a leader in the area of sustainability with environmental and social factors which considered more deeply in strategic business decisions. Confirming this significant thought on sustainability, the vision, mission and the other priorities of the company also attempts to cover the area of sustainability.

It also needs to emphasise that providing due care to maintain the highest possible Eco-friendliness in the organisation's practices, investments in sustainable agricultural and manufacturing practices, develop the team and the resident communities and further to conserve and protect the environment with the aim of "becoming the most admired plantation company in Sri Lanka" (Annual report 2018/19). To achieve the company vision successfully, the company has implemented its mission as "managing the plantations to enhance the quality of life of employees, producing market quality teas that delight our customers, driving to sustainable growth while enhancing the shareholder value". Further, the organisation has developed its strategic imperatives in order to achieve this vision and implement its mission. The ten elements of these strategic imperatives include providing quality teas, labour productivity, land productivity, value addition, new revenue streams, cost controls and management, climate change and environmental management, workforce development, community development and governance and risk management (Annual report 2018/19).

It has been identified that, through these strategies and the other priorities, TPC is trying to emphasise its concern towards more sustainable value creation. As already mentioned in the literature, "sustainability" is not always covering economic, environmental and social aspects. According to the value that each organisation provides on it, the results and the area of coverage may differ. When TPC sustainability and its practices are considered, it needs to identify how it has defined sustainability from the organisation's point of view. "A sustainable business meets customer needs while treating the environment well. Environmental protection, righteous agricultural practices, producing high-quality Ceylon Tea and improving the quality of life of our people is the basis of our sustainable business philosophy".

By adding more value to this definition that is taken by the organisation's website, the sustainability manager has also mentioned that;

Our company has much concern on sustainability. The main reason for this consideration is, as a plantation company, our entire organisation is depending 100% on the natural environment. Therefore, we believe that we should protect the natural environment as well as to society. Moreover, there is a marketing benefit on becoming more sustainable, as most of our major customers are from overseas and are requesting for sustainable practices and asking for internal audits, customer audits, sustainability performance ranking and sustainability suppliers in the supply chain. Because of these reasons, we are embedded sustainability within our organisation's strategic priorities.

When it considers about the organisation's current sustainability practices, the assistant sustainability manager commented,

We are aware of the importance of integrating organisational sustainability strategy with day-to-day business, and we have adopted strategic and more effective sustainable initiatives within the entire group. We strongly believe that this strategic approach towards sustainability would assist the group to contribute towards the advancement of our community and the society at large while being a responsible environmental citizen.

4.2 Approaches used to Measure Sustainability Practices

TPC uses several reporting standards in sustainability reporting such as, Global Reporting Standards (GRI), the United Nations Global Compact (UNGC), National Green Reporting Standards in Sri Lanka and also guidance on ESG reporting issued by Colombo Stock Exchange. However, it should be emphasised that these standards are just using for reporting purposes, and no measurements are considered at this point. When the sustainability performance measurements of the TPC are considered, its General Manager / Strategic Performance Management stated that;

In our annual report, we are just reporting our performance according to the GRI guidelines and other regulatory requirements. Other than the sustainability-report group develops separate reports for every sector of the organisation based on the three areas of sustainability. When we are having

monthly meetings with the Managing Directors we present this sustainability performance by linking with the organisational performance. As an example, energy per glove pair, water per glove pair and so on. Further, the company consider areas such as performance variations between the years, how to increase this current performance, reasons for the increase in resource usage and precautions to eliminate these increase in resource usage at the Managing Director meetings. When it needs to compare the results with the sectors, this performance is calculated with revenues. Performance measurements are merged with financial and sustainable performance.

The sustainability manager of the plantation sector has explained this sustainability measurement as, “*We measure and report sustainability performance through standardised and pre-defined objectives of the organisation*”.

The organisation uses a large number of sustainability performance measures including, emissions intensity, GJ of renewable electricity generation, water usage, water recycled, biogenic carbon emissions, the rate of emissions offset by renewable energy generation, health and safety measures, average training hours, investments in personal training, the rate of increase in the use of renewable energy, the retention rate of employees, as well as financial measures such as sales growth rate, the ratio of debt to equity and the proportion of profit margin etc. Despite the fact that these measures exist inside the organisation, there is no proper method that combines them into a specific framework. However, the group assistant sustainability manager further mentioned that,

These measures are not using regularly. Because measuring more indicators would make confusion and the employees spend more time by collecting data, than actually doing their job. Therefore, we measure these non-financial indicators only when it needs.

The protection of the natural environment has been identified as one of the strategic priorities of the organisation. Therefore, the company uses various measures to reduce environmental impact, including recycling waste, reducing water consumption and reducing emissions of pollutants.

4.3 Current Status of the Application of BSC in TPC

As already mentioned above, in general, the BSC has four perspectives and is used to measure and manage the organisational performance against the set of pre-defined strategies (Table 5). However, TPC is not using the BSC to measure its overall performance, whereas they have placed a clear measurement criterion to evaluate employee performance. The senior manager-finance further emphasised;

Here, the BSC is using in Human Resource Management department, when they are evaluating the individual performance of the employees. Their performance evaluation covers staff, executives and management categories. However, these evaluations are carried out on both individual and collective levels. All the rewards such as salary increments, bonus and incentives are awarded on achievements and the results they achieved during the performance evaluation process.

However, it has been identified that assigning targets on employee performance and checking whether those targets are achieved or not is insufficient to decide on the organisation's overall performance.

4.4 The Sustainability Balanced Scorecard for TPC

Sustainability performance represents a significant concern in most of business organisations at present. Therefore, a suitable evaluation of this sustainability performance is becoming a necessity in the current business world. As already mentioned in the literature review and the conceptual framework, many researchers have shown that the BSC is an effective tool to evaluate this sustainability performance. As the aim of this study is to develop a standalone SBSC for TPC, the general framework developed in the above will be taken and modified based on the organisation's vision, mission and strategic proprieties.

As discussed in 4.1 above TPC has clearly identified its vision, mission and strategic proprieties with ten strategic imperatives. Consequently, strategic objectives have been identified in order to create strategic values and these strategic objectives have been translated into tangible goals and objectives (Kaplan & Norton, 1996).

Moreover, the below has mentioned the strategic objectives that have been identified from the strategic imperatives mentioned above.

- Providing quality teas

- To produce quality teas in line with sustainable, ethical and best food safety business practices and in conformance with international certification bodies.

- To invest in sustainable field practices and in automated solutions to improve factory processes.

- Labor productivity

- To mechanise harvesting, increase management controls at the estate level, closely monitor productivity and motivate on performance.

- To engage closely with the workforce, trade unions, and other relevant stakeholders to educate and support the movement to a revenue-share business model where productivity is linked to remuneration and benefits.

- Land Productivity

- To continue with timely soil management practices, including weeding and fertiliser applications to prevent soil degradation.

- To continue with replanting and justify the land use by planting fuelwood in uneconomical land.

- Value Addition

- To invest in research and development to increase the value-added product range and formulate long-term marketing plans.

- New Revenue Streams

- To invest in non-core crop operations including cinnamon, coconut and agarwood and venture into hospitality and leisure business-themed on tea tourism. Bring timber and fuelwood planted into commercial use.

- Cost Controls and Management

- To control production costs through productivity-based incentives, adoption of energy-efficient technologies and maintain a lean overhead cost structure.

- Climate Change and Environmental Management

- To maintain environmental-friendly business practices, focus on reducing greenhouse gas emissions and protect biodiversity and water sources.

- To take forward the tree-planting programme, switch to renewable energy sources and work towards carbon neutrality.

- Workforce Development

- To create a performance-oriented workplace; invest in learning and development and employee wellbeing.

- To build an empowered workforce enhancing their quality of life, and change the mindset to be a stakeholder rather than a worker.

- Community Development

- To integrate programmes to ensure the wellbeing of resident communities.

- To maintain and build long-term and reciprocal ties with residents and neighbouring communities.

- Governance and Risk Management

- Ensure effective risk management, internal controls and uphold current best practices in governance.

To develop a SBSC for the TPC, first, it is needed to identify the most significant KPIs in relation to the organisation's strategy and reported GRI guidelines (Table 5). The company has identified most of the KPIs and reported in their annual report under the six capitals. As the General Manager / Strategic Performance Management commented, *"Our top management and the business consultants review the validity of the KPIs annually, and KPIs are modified or adjusted if it is necessary"*.

Further, they have identified that sustainability strategy becomes more effective when both internal and external stakeholders are addressed. Therefore, both internal and external stakeholders were identified in the company's annual report. Internal stakeholders include employees and the management team, whereas external stakeholders include customers, suppliers, shareholders, government and the community. Then an analysis was done on the selected GRI standards to check their suitability and significance with the organisational strategies. However, after sustainability related measurements had been selected, approval was taken from the management to determine whether all the related measures were included or are there any important measurements have been omitted. However, the measures which have less suitability and significance with the organisation's strategy and decision-making process was eliminated. This review also examined the number of measures, as too few may be unable to assess the effectiveness of strategies and sustainable practices. Using

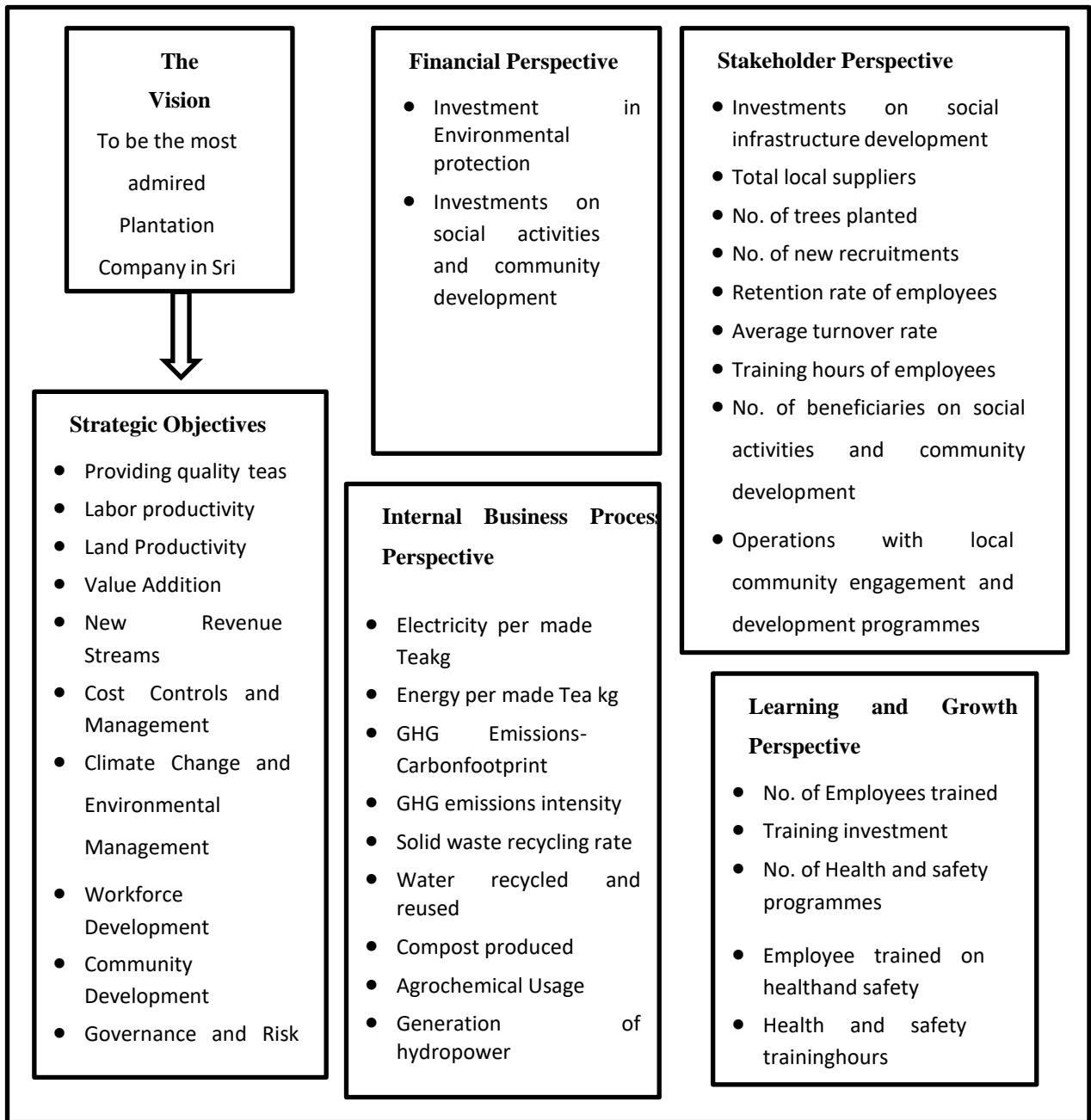
too many measurements is a waste of both money and time and typically is unproductive (Butler & Henderson, 2011). Too many measures may give a perception that no particular measure is significant. In addition, the KPIs identified in the general framework and KPIs not used in TPC is excluded.

Finally, the KPIs have been recognised, based on the GRI standards which are significant and currently covered by the organisation and also the core indicators that are found to be common in the past research findings. In particular, the financial perspective includes two sustainability indicators from eight indicators identified. The stakeholder perspective includes ten sustainability indicators, internal business process perspective includes ten sustainability indicators whereas learning and growth perspective includes five sustainability indicators.

As mentioned in Figure 4 below, each four perspectives of the SBSC contain indicators that can be used to measure the performance of that perspective. The sum of those indicators results shows the overall performance of the perspective. Thus, the performance of all four perspectives equals the overall sustainability performance of the organisation.

Figure 4

Developed SBSC for TPC



4.5 Practical Application of the Developed SBSC to TPC

After developing the SBSC, the study focuses on evaluating the sustainability performance practically by taking TPC as the base. However, in evaluating this sustainability performance, several researchers have used some improved methods, such as multi-dimensional decision making (MCDM), Analytical network process

(ANP) and Weighted values method to measure the overall sustainability performance (Arora, 2015).

As using the above methods are complicated, for the purpose of this research, it is only compared the goals identified for the KPIs and their actual performance just to identify the level of sustainability performance; whether they are achieved the goal or is there a deviation in achieving the targets in the selected organisation. When defining the standard performance/ targets for the identified KPIs, as it is needed to link those targets with the organisational strategy, those targets were identified from the TPC annual report for the year of 2018/19.

The process used in identifying current performance, developing targets and initiatives are, first, the information was collected on historic performance on the identified KPIs. Then the developed targets were also taken from the annual reports on KPIs identified. For each KPI, the goal has also been identified, which represents the level to achieve in order to guarantee the success of the company. For each goal, it has been inserted KPI to evaluate the performance goal ratio. Then the overall sustainability performance is measured. Based on these measures, the initiatives that are needed to achieve the targets can be decided by the organisation itself.

Table 6, it presents the results of the four perspectives in the BSC and the overall sustainable performance of the selected organisation. The scores for each indicator are obtained by comparing the actual and target performance. Further, it can be observed that there are significant differences in performance among different indicators and perspectives. The results show a higher level of contribution towards financial perspective, as it performed “excellent” (> 90) during the year within the two KPIs identified. It was followed by the stakeholder perspective that the company gives great importance to safeguarding its employees, giving the maximum returns to its shareholders and providing quality products to its customers. After that, the Learning and growth perspective represents only one excellent achievement (>90) of the sustainability performance, where the company care about its employees and maintain their health and training at a significant level to raise the productivity of its employees. The worst performance among the overall sustainability performance has been shown

by the internal business process perspective, where they have used more resources than expected amounts. However, by looking at the results, it can be stated that the aggregated performance of “sustainability” in the selected organisation as “good”.

Figge et al., (2002) have also mentioned that the SBSC would facilitate a better understanding of the concept of sustainability, helps to highlight the areas in which sustainability actions were lacking, helped to clarify how social and environmental issues were being integrated into the company’s decision-making processes and activities and provided a theoretical guideline for the Sustainable Development Department to plan its operational activities on the basis of long-term sustainability and business excellence objectives.

The proposed SBSC framework represents an effective solution for the problem of not having a strategic management tool to evaluate sustainability performance. So it can be concluded that it will help managers not only to evaluate the sustainability performance but also to plan, manage and control organisation’s sustainability practices. In addition, it can serve as a template for the organisations which aims to achieve higher sustainability.

5. Conclusion

Sustainability is a newly emerging area of the business world that assists business organisations in their strategic planning process. Even though Butler & Henderson (2011) have identified that there are strong barriers to incorporate sustainability into the strategic plan and difficulties in measuring the effects that sustainability has. Further, the deficit knowledge of managers on the measurements of this sustainability performance and the inappropriateness of the current sustainability measures would make it difficult to evaluate the positive effects of sustainability on the business as a whole. Therefore, the necessity of implementing a proper framework in order to measure this sustainability performance was realised.

In order to facilitate this need, the research aimed to recognise a way to incorporate sustainability perspectives into the strategic plan through the development and the practical application of a SBSC. Based on a qualitative analysis done by conducting

interviews, reviewing secondary data sources as well as analysing the past research findings, the most suitable and significant KPIs have been identified in this study, which can be used by any organisation for those who are currently reporting based on GRI guidelines as well as for those who are not using GRI in sustainability reporting. More specifically, this developed framework, the sustainability balanced scorecard (SBSC), was used to practically evaluate the sustainability performance of the case organisation by linking the organisation's strategic objectives within the developed SBSC framework. Based on the findings, it has been recognised that, what are the areas where the organisation gives much concern as well as the areas which are needed to improve. Further, it can be clearly observed that, although the organisation is currently following a wide range of sustainability practices, most of those practices are not considering in the strategic decision making whereas they were just using in reporting purpose and not include any numerical values or allocation of resources.

This study has identified two specific limitations. The first one is, in the practical application of the SBSC, it was just compared to the standard and the actual performance of the organisation in the reporting year. However, the organisation could get more accurate results on its overall sustainability performance if it has used the weighted average method. In this method, the organisation can provide suitable weights on the perspectives of the BSC based on the factors such as competitive environment and the organisation's position in the markets. Therefore, the main limitation of this study is, it could not measure the overall sustainability performance value by taking the percentages of actual and standard performance. The other limitation identified is, the secondary data analysis method of annual and sustainability reports would not provide an exact picture of the organisation's actual performance. As the study is basically on evaluating the sustainability performance, if the data gathered through these reports were incorrect, it may negatively affect the value of the study.

Literature and prior research on the application of the SBSC as performance measurement techniques in the Sri Lankan context are hard to find. Therefore, the findings of this study significantly contribute to the management accounting discipline as it adds new knowledge to the existing literature on organisational performance measurements. Furthermore, it provides guidelines on the measurements of

sustainability performance through the existing BSC approach. So, the outcomes of this study will be mainly important to the practitioners and strategic level managers for the formulation of sustainable development strategies for their organisations. In the future, the SBSC framework developed in this study can be further improved and applied in different industries to measure sustainability contribution logically.

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ANNEXURES

Table 1

GRI standards into three dimensions of sustainability

GRI Standard into three dimensions of sustainability		
GRI 200 (Economic)	GRI 300 (Environmental)	GRI 400 (Social)
GRI 201- Economic Performance	GRI 301- Materials	GRI 401- Employment
-GRI 201-1 (EC 1)	-GRI 301-1 (EN 1)	-GRI 401-1 (LA 1)
-GRI 201-2 (EC 2)	-GRI 301-2 (EN 2)	-GRI 401-2 (LA 2)
-GRI 201-3 (EC 3)	-GRI 301-3 (EN 28)	-GRI 401-3 (LA 3)
-GRI 201-4 (EC 4)		
GRI 202 - Market Presence	GRI 302- Energy	GRI 402- Labor/Management Relations
-GRI 202-1 (EC 5)	-GRI 302-1 (EN 3)	-GRI 402-1 (LA 4)
-GRI 202-2 (EC 6)	-GRI 302-2 (EN 4)	
	-GRI 302-3 (EN 5)	
	-GRI 302-4 (EN 6)	
	-GRI 302-5 (EN 7)	
GRI 203 – Indirect Economic Impact	GRI 303- Water and Effluents	GRI 403- Occupational Health & Safety
-GRI 203-1 (EC 7)	-GRI 303-1 (EN 8)	-GRI 403-1 (LA 5)
-GRI 203-2 (EC 8)	-GRI 303-2 (EN 9)	-GRI 403-2 (LA 6)
	-GRI 303-3 (EN 10)	-GRI 403-3 (LA 7)
		-GRI 403-4 (LA 8)

GRI 204- Procurement Practices -GRI 204-1 (EC 9)	GRI 304- Biodiversity	GRI 404- Training & Education
	-GRI 304-1 (EN 11)	-GRI 404-1 (LA 9)
	-GRI 304-2 (EN 12)	-GRI 404-2 (LA 10)
	-GRI 304-3 (EN 13)	-GRI 404-3 (LA 11)
	-GRI 304-4 (EN 14)	
	GRI 305- Emissions	GRI 405- Diversity & Equal Opportunity
	-GRI 305-1 (EN 15)	-GRI 405-1 (LA 12)
	-GRI 305-2 (EN 16)	-GRI 405-2 (LA 13)
	-GRI 305-3 (EN 17)	
	-GRI 305-4 (EN 18)	
	-GRI 305-5 (EN 19)	
	-GRI 305-6 (EN 20)	
	GRI 306- Waste	GRI 406- Non discrimination
	-GRI 306-1 (EN 22)	-GRI 406-1 (HR 3)
	-GRI 306-2 (EN 23)	
	-GRI 306-3 (EN 24)	
	-GRI 306-4 (EN 25)	
	-GRI 306-5 (EN 26)	
	GRI 307-Environmental Compliance	GRI 407- Freedom of Association & Collective Bargaining
	-GRI 307-1 (EN 29)	-GRI 407-1 (HR 4)
	GRI 308- Supplier Environmental Assessment	GRI 408- Child Labor
	-GRI 308-1 (EN 32)	-GRI 408-1 (HR 5)
	-GRI 308-2 (EN 33)	
		GRI 409- Forced or Compulsory Labor
		-GRI 409-1 (HR 6)
		GRI 410-Security Practices
		-GRI 410-1 (HR 7)
		GRI 411-Rights of Indigenous Peoples
		-GRI 411-1 (HR 8)
		GRI 412-Human Rights Assessments
		-GRI 412-1 (HR 9)
		-GRI 412-2 (HR 2)
		-GRI 412-3 (HR 1)

	GRI 413- Local Communities -GRI 413-1 (SO 1) -GRI 413-2 (SO 2)
	GRI 414- Supplier Social Assessment -GRI 414-1 (HR 10) -GRI 414-2 (HR 11)
	GRI 415- Public Policy -GRI 415-1 (SO 6)
	GRI 416- Customer Health & Safety -GRI 416-1(PR 1) -GRI 416-2 (PR 2)
	GRI 417- Marketing & Labeling -GRI 417-1 (PR 3) -GRI 417-2 (PR 4) -GRI 417-3 (PR 70)
	GRI 418 - Customer Privacy -GRI 418-1 (PR 8)
	GRI 419- Socioeconomic Compliance -GRI 419-1(PR 9)

Table 2

GRI Indicators into four perspectives of the BSC

SBSC	No. of indicators	GRI Indicators
Financial Perspective	11	EC1, EC2, EC3, EC4, EC5, EC8, EN28, EN30, SO6, SO8, PR9.
Stakeholder Perspective	41	EC6, EC7, EC9, EN9, EN11, EN12, EN13, EN14, EN15, EN25, LA1, LA2, LA3, LA4, LA5, LA6, LA7, LA9, LA12, LA13, LA14, HR1, HR2, HR4, HR5, HR6, HR7, HR9, SO1, SO2, SO4, SO5, SO7, PR1, PR2, PR3, PR4, PR5, PR6, PR7, PR8.
Internal Business Process	21	EN1, EN2, EN3, EN4, EN5, EN6, EN7, EN8, EN10, EN16, EN17, EN18, EN19, EN20, EN21, EN22, EN23, EN24, EN26, EN27, EN29.
Learning and Growth Perspective	6	LA8, LA10, LA11, HR3, HR8, SO3.

Table 3*Identifying KPIs from GRI guidelines and Literature*

Perspective	GRI Guidelines	KPIs identified from the GRI guidelines	Additional KPIs – Non GRI (found in the literature)
Financial Perspective	<ul style="list-style-type: none"> • Direct economic value generated and distributed(EN1) • Financial implications and other risks and opportunities due to climate change (EN 2) • Defined benefit plan obligations and other retirement plans (EN 3) • Financial assistance received from government (EN 4) • Ratios of standard entry level wage by gender compared to local minimum wage (EN 5) • Significant indirect economic impacts (EN 8) • Reclaimed products and their packaging materials (EN 28) • The G4 Aspect of Transport and its Indicator G4-EN30 have been discontinued to reduce duplication. The environmental impacts of transport are already covered in the following topic-specific Standards: GRI 302: Energy and GRI 305: Emissions (EN 30) • Political contributions (SO 6) • Non-compliance with laws and regulations in the social and economic area (SO 8) 	<ul style="list-style-type: none"> ✓ Economic Value Generated ✓ Economic Value Distributed ✓ Employee benefits paid during the year ✓ Non Compliance with laws and regulations in social and economic area ✓ Environmental Investments ✓ Investments on social activities and community development 	<ul style="list-style-type: none"> ✓ Recycling Revenues ✓ Revenues from Green Products ✓ Investments in TBL ✓ Cost related to TBL ✓ Energy cost savings ✓ Percentage of cost going back to the Environmental protection

	<ul style="list-style-type: none"> • Non-compliance with laws and regulations in the social and economic area (PR 9) 		
Stakeholders Perspective	<ul style="list-style-type: none"> • Proportion of senior management hired from the local community (EC 6) • Infrastructure investments and services supported (EC 7) • Proportion of spending on local suppliers (EC 9) • Water sources significantly affected by withdrawal of water (EN 9) • Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas (EN 11) • Significant impacts of activities, products, and services on biodiversity (EN 12) • Habitats protected or restored (EN 13) • IUCN Red List species and national conservation list species with habitats in areas affected by operations (EN 14) • Direct (Scope 1) GHG emissions (EN 15) • Transport of hazardous waste (EN 25) • New employee hires and employee turnover (LA 1) • Benefits provided to full-time employees that are not 	<ul style="list-style-type: none"> ✓ Investments on social infrastructure development ✓ Payments on local suppliers ✓ No. of new recruitments ✓ Retention rate of employees ✓ Average turnover rate ✓ Average hours of training ✓ No. of beneficiaries on social activities and community development ✓ Operations with local community engagement and development programmes 	<ul style="list-style-type: none"> ✓ Awards of Sustainability ✓ Health and Safety of Employee ✓ Health and Safety of Customer ✓ Employee Satisfaction ✓ Customer Satisfaction

- provided to temporary or part-time employees (LA 2)
- Parental leave (LA 3)
 - Minimum notice periods regarding operational changes (LA 4)
 - Workers representation in formal joint management-worker health and safety committees (LA 5)
 - Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities (LA 6)
 - Workers with high incidence or high risk of diseases related to their occupation (LA 7)
 - Average hours of training per year per employee (LA 9)
 - Diversity of governance bodies and employees (LA 12)
 - Ratio of basic salary and remuneration of women to men (LA 13)
 - New suppliers that were screened using social criteria (LA 14)
 - Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening (HR 1)
 - Employee training on human rights policies or procedures (HR 2)
 - Operations and suppliers in which the right to freedom of association and collective
-

bargaining may be at risk (HR 4)

- Operations and suppliers at significant risk for incidents of child labor (HR 5)
 - Operations and suppliers at significant risk for incidents of forced or compulsory labor (HR 6)
 - Security personnel trained in human rights policies or procedures (HR 7)
 - Operations that have been subject to human rights reviews or impact assessments (HR 9)
 - Operations with local community engagement, impact assessments, and development programmes (SO 1)
 - Operations with significant actual and potential negative impacts on local communities (SO 2)
 - Communication and training about anti-corruption policies and procedures (SO 4)
 - Confirmed incidents of corruption and actions taken (SO 5)
 - Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices (SO 7)
 - Assessment of the health and safety impacts of product and service categories (PR 1)
-

- Incidents of non-compliance concerning the health and safety impacts of products and services (PR 2)
- Requirements for product and service information and labeling (PR 3)
- Incidents of non-compliance concerning product and service information and labeling (PR 4)
- Approach to stakeholder engagement Key topics and concerns raised (PR 5)
- Activities, brands, products, and services (PR 6)
- Incidents of non-compliance concerning marketing communications (PR 7)
- Substantiated complaints concerning breaches of customer privacy and losses of customer data (PR 8)

Internal Business Process Perspective	<ul style="list-style-type: none"> • Materials used by weight or volume (EN 1) • Recycled input materials used (EN 2) • Energy consumption within the organisation (EN 3) • Energy consumption outside of the organisation (EN 4) • Energy intensity (EN 5) • Reduction of energy consumption (EN 6) • Reductions in energy requirements of products and services (EN 7) • Water withdrawal by source (EN 8) 	<ul style="list-style-type: none"> ✓ Materials used by weight or volume ✓ Recycled input materials used ✓ Total energy consumption ✓ Reduction of energy consumption ✓ Water withdrawal by source ✓ Water recycled and reused ✓ Scope 2 Indirect GHG Emissions 	<ul style="list-style-type: none"> ✓ Environmental and Social Standard Certified ✓ Green Supply Chain Management ✓ Green Purchasing ✓ No. of safety improvement projects ✓ Process improvements to reduce power
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- Water recycled and reused (EN 10) ✓ Scope 3 Other consumption and carbon emissions
 - Energy indirect (Scope 2) GHG emissions (EN 16) ✓ Reduction of GHG Emissions
 - Other indirect (Scope 3) GHG emissions (EN 17) ✓ Methods of water disposal
 - GHG emissions intensity (EN 18)
 - Reduction of GHG emissions (EN 19)
 - Emissions of ozone-depleting substances (ODS) (EN 20)
 - Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions (EN 21)
 - Water discharge by quality and destination (EN 22)
 - Waste by type and disposal method(EN 23)
 - Significant spills (EN 24)
 - Water bodies affected by water discharges and/or runoff (EN 26)
 - The G4 Aspect of Products and Services and its Indicator G4-EN27 have been discontinued to reduce duplication. The environmental impacts of products and services are already covered in the following topic-specific Standards: GRI 301: Materials, GRI 302: Energy, and GRI 305: Emissions. Indicator G4-EN28 (now Disclosure 301-3) has been
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	moved to GRI 301: Materials (EN 27)		
	<ul style="list-style-type: none"> • Non-compliance with environmental laws and regulations (EN 29) 		
Learning and Growth Perspective	<ul style="list-style-type: none"> • Health and safety topics covered in formal agreements with trade unions (LA 8) • Programmes for upgrading employee skills and transition assistance programmes (LA 10) • Percentage of employees receiving regular performance and career development reviews (LA 11) • Incidents of discrimination and corrective actions taken (HR 3) • Incidents of violations involving rights of indigenous peoples (HR 8) • Operations assessed for risks related to corruption (SO 3) 	<ul style="list-style-type: none"> ✓ Programmes for upgrading employee skills ✓ Percentage of employees receiving regular performance and career development review ✓ Incidents on discrimination and corrective actions taken 	<ul style="list-style-type: none"> ✓ R&D for Green Technologies ✓ Environmental Information Systems ✓ Employee Volunteer Hours

Table 4
Identifying KPIs from past literature

Perspective	Measures	References
Sustainability	<ul style="list-style-type: none"> • Operating Expenditures • Profit • Resource Productivity • Market Share • Recycling Revenues • Revenues from Green Products • Green Image 	Kaplan and Norton (1996) Epstein and Wisner (2001) Dias-Sardinha and Reijnders (2005) Figge et al. (2002) Sidiropoulos et al. (2004)
Stakeholders	<ul style="list-style-type: none"> • Anti-bribery • Avoiding Discrimination • Freedom of Association 	Kaplan and Norton (1996) Epstein and Wisner (2001)

	<ul style="list-style-type: none"> • Child Labor • Signing the Code of Conducts or Voluntary Initiatives • Corporate Sustainability Reporting • Product Take back • Awards of Sustainability • Community Investment • Health and Safety of Employee • Health and Safety of Customer • Employee Satisfaction • Customer Satisfaction 	<p>Dias-Sardinha and Reijnders (2005) Figge et al. (2002) Sidiropoulos et al. (2004)</p>
Internal Business Process	<ul style="list-style-type: none"> • Green Design • LCAs Performed • Environmental and Social Standard Certified • Green Supply Chain Management • Green Purchasing • Energy Consumption • Water Consumption • Greenhouse Gas Emissions • Packaging Volume • Waste Volume • Lost Workdays • Employee Accidents • Days' Work Stoppages 	<p>Kaplan and Norton (1996) Epstein and Wisner (2001) Dias-Sardinha and Reijnders (2005) Figge et al. (2002) Sidiropoulos et al. (2004)</p>
Learning and Growth	<ul style="list-style-type: none"> • R&D for Green Technologies • Environmental Information Systems • Employee Training • Employee Volunteer Hours • Employees with Disabilities • Proportion of Female Executives • Proportion of Disabilities for Management Executives 	<p>Epstein and Wisner (2001) Bieker and Waxenberger (2002)</p>

Source: Hsu et al. (2011)

Table 5*GRI Standard Used by the Selected Organisation*

GRI Standard	GRI Standards Used by the Selected Organisation	Related Capital	Reporting Priority	KPIs reported
GRI 200 (Economic)	GRI 201- Economic Performance	Financial and Human Capital	High	<ul style="list-style-type: none"> • Revenue • Gross Profit • Environmental Investments
	-GRI 201-1			
	-GRI 201-2			
	-GRI 201-3			
	GRI 201-4			
	GRI 202 - Market Presence	Human Capital	Medium	-
	-GRI 202-1			
	-GRI 202-2			
	GRI 203 – Indirect Economic Impact	Financial and Social Capital	Medium	<ul style="list-style-type: none"> • Investments on social infrastructure development • Investments on social activities and community development
	-GRI 203-1			
	-GRI 203-2			
	GRI 204- Procurement Practices	Relationship and Manufactured Capital	Medium	<ul style="list-style-type: none"> • % of local suppliers • Tea smallholders
	-GRI 204-1			
GRI 300 (Environmental)	GRI 301- Materials	Natural Capital	Medium	-
	-GRI 301-1			
	-GRI 301-2			
	-GRI 301-3			
	GRI 302- Energy	Natural Capital	High	<ul style="list-style-type: none"> • Electricity per made Tea kg • Energy per made Tea kg
	-GRI 302-1			
	-GRI 302-2			
	-GRI 302-3			
	-GRI 302-4			
	-GRI 302-5			
	GRI 303- Water and Effluents	Natural Capital	Medium	-
	-GRI 303-1			
	-GRI 303-2			
	-GRI 303-3			

	GRI 304- Biodiversity	Natural	High	• No. of trees planted
	-GRI 304-1	Capital		
	-GRI 304-2			
	-GRI 304-3			
	-GRI 304-4			
	GRI 305- Emissions	Natural	High	• GHG Emissions- Carbon footprint
	-GRI 305-1	Capital		
	-GRI 305-2			• GHG emissions intensity
	-GRI 305-3			
	-GRI 305-4			
	-GRI 305-5			
	-GRI 305-6			
	GRI 306- Waste	Natural	High	• Solid waste recycling rate
	-GRI 306-1	Capital		
	-GRI 306-2			• Compost produced
	-GRI 306-3			• Fertiliser usage
	-GRI 306-4			• Agrochemical Usage
	-GRI 306-5			
	GRI 307-Environmental Compliance	Natural Capital	High	-
	-GRI 307-1			
	GRI 308- Supplier Environmental Assessment	Natural Capital	Medium	-
	-GRI 308-1			
	-GRI 308-2			
GRI 400 (Social)	GRI 401- Employment	Human	High	• No. of new recruitments
	-GRI 401-1	Capital		
	-GRI 401-2			• Retention rate
	-GRI 401-3			• Average turnover rate
	GRI 402- Labor/Management Relations	Human Capital	High	-
	-GRI 402-1			

GRI 403- Occupational Health & Safety -GRI 403-1 -GRI 403-2 -GRI 403-3 -GRI 403-4	Human Capital	High	<ul style="list-style-type: none"> No. of Health and safety programmes Employee trained on health and safety Health and safety training hours
GRI 404- Training & Education -GRI 404-1 -GRI 404-2 -GRI 404-3	Human and Intellectual Capital	High	<ul style="list-style-type: none"> Training hours Employees trained Training investment
GRI 405- Diversity & Equal Opportunity -GRI 405-1 -GRI 405-2	Human Capital	Medium	-
GRI 406- Non discrimination -GRI 406-1	Human Capital	Medium	-
GRI 407- Freedom of Association & Collective Bargaining -GRI 407-1	Human Capital	High	-
GRI 408- Child Labor -GRI 408-1	Human Capital	High	-
GRI 409- Forced or Compulsory Labor -GRI 409-1	Human Capital	High	-
GRI 413- Local Communities -GRI 413-1 -GRI 413-2	Social & Manufactured Capital	High	-
GRI 414- Supplier Social Assessment -GRI 414-1 -GRI 414-2	Supplier Relationship Capital	Medium	-
GRI 415- Public Policy -GRI 415-1	Social Capital	Medium	-

GRI 416- Health & Safety -GRI 416-1 -GRI 416-2	Customer Relationship & Intellectual Capital	High	• Product quality and certifications received
GRI 417- Labeling -GRI 417-1 -GRI 417-2 -GRI 417-3	Marketing & Relationship & Intellectual Capital	Medium	-
GRI Socioeconomic Compliance -GRI 419-1	419- Social Capital	High	-

Table 6

Practical application of the developed SBSC for the case organisation

Perspective/ Objective	KPIs	Standard Performance	Actual Performance	Actual performance to Standard performance (%)
Financial Perspective	• Environmental Investment	45	40.8	90.66%
	• Investments on social activities and community development	50	90.9	181.8%
Stakeholder Perspective	• Investments on social infrastructure development	50	54.9	109.8%
	• Total local suppliers	100%	100%	100%
	• Tea smallholders supplies quantity	1700	1650	97.05%
	• No. of trees planted	50000	21760	43.52%
	• No. of new recruitments	600	378	63%
	• Retention rate of employees	96%	93.2%	97.08%
	• Average turnover rate	4.5	6.8	151.1%

	• Training hours of employees	15000	10011	66.74%
	• No. of beneficiaries on social activities and community development	Whole community	Whole community	100%
	• Product quality and certifications received	16	14	87.5%
Internal Business Process Perspective	• Electricity per made Tea kg	0.6	0.75	125%
	• Energy per made Tea kg	0.01	0.03	300%
	• GHG emissions-Carbon footprint	4500	4876	108.35%
	• GHG emissions intensity	0.6	0.78	130%
	• Solid waste recycling rate	50%	49%	98%
	• Compost produced	15	2.71	18.06%
	• Agrochemical Usage	3	3.4	113.33%
	• Generation of hydropower	10	7.96	79.6%
Learning and Growth Perspective	• No. of Employees trained	15000	10156	67.7%
	• Training investment	2.5	4.2	168%
	• No. of Health and safety programmes	150	33	22%
	• Employee trained on health and safety	7000	4224	60.34%
	• Health and safety training hours	5000	3818	76.36%

**CORPORATE CONTRIBUTION FOR SUSTAINABLE
DEVELOPMENT: A CASE FROM A MANUFACTURING
SECTOR ORGANISATION IN
SRI LANKA**

Rajapakse, T. C. B.

Faculty of Business Management, Solent University, United Kingdom

Rajapakse, B.

Department of Accounting, Faculty of Management and Finance, University of Colombo

r mrb_rajapakse@dac.cmb.ac.lk

Abstract

Since human activities, business operations, and development projects have adversely affected the physical environment and society, the need to achieve sustainable development, which emphasise a balanced economic, environmental and social development, was recognised in early 2000. Later in 2015, the UN officially accepted it, introducing sustainable development goals (SDGs), which have to achieve by its member states by 2030. Therefore, sustainable development strategies play a key role in the business agenda of both public and private entities of UN member states worldwide as they are responsible for achieving SDGs by 2030. This study aims to examine the corporate contribution towards sustainable development (SD) of Sri Lanka in the context of a large-scale manufacturing company (referred to as INSEE) as a case study. The research philosophy used in this study is interpretivism, and the research approach used is inductive. The case study method was used as the research strategy, and data was collected through interviews, field visits, observation, and documentary reviews. Thematic analysis based on Triple Bottom Line (TBL) was used for data analysis. Further, contributions towards the achievement of SD goals were also analysed.

The study reveals that since INSEE operates in the cement manufacturing industry, it creates several environmental and social issues in its areas. But the company has made significant efforts to overcome such issues minimising its CO₂ emissions, air pollution, and use of non-renewable energy, and resettling biodiversity in affected areas, while

the company has initiated several community development programmes as Corporate Social Responsibility (CSR) projects for the benefit of the society. Furthermore, the study reveals that INSEE has substantially contributed to economic sustainability in the way of economic value creation, paying government tax, and creating employment opportunities while successfully attempting to achieve SDGs by 2030. Finally, the study concludes that INSEE plays a role model in the industry formulating and implementing SD focus strategies.

Keywords. Sustainable development, Sustainable development goals, Triple bottom line, Stakeholder theory

1. Introduction

1.1 Background of the Study

Sustainable development (SD) has been identified as one of the significant factors for organisational success; corporate entities accomplish sustainability practices and transform businesses operations to contribute to SD (Schaltegger et al., 2017). So, currently, SD plays a bigger role in the corporate agenda worldwide. However, “no country has currently achieved SD, and some countries are far off the target. Thus, thought of actually achieving SD may seem overwhelming” (Holden et al., 2014 p.130-139). Meanwhile, United Nations (UN) has introduced 17 sustainable development goals which are expected to be achieved by 2030. Therefore, at present corporate managers’ role is challenging as they have to work in order to achieve SD balancing environment (plant), social (people), and economic (profit) impact of business operations. Assessing the corporate contribution for SD is a more popular research topic among many academic researchers, particularly in developed countries during the last decade. For example, Royo et al. (2020), Omri and Mabrouk (2020), Adenle (2020), and Qureshi et al. (2019) can be named.

At present, the corporate sector in Sri Lanka is also playing a key role in the economy in value adding and earning a large amount of revenue while significantly contributing to SD. Although there are limited numbers of research in the sustainability aspects of the Sri Lankan context, they are unable to highlight the corporate contribution to sustainable development as the majority of those research mainly focus on CSR

disclosure (Fernando et al., 2015). Furthermore, they claim that large companies are mainly engaged in marketing or image building based on environmental activities. Meanwhile, Yong and Fie (2016) say that about 60% of leading Sri Lankan corporate entities practiced CSR as charitable activities rather than a meaningful activity that contributes to SD. Although Rajapaksha (2017) emphasises reasons for engaging in sustainability practices based on one company, its scope is not enough to make a meaningful conclusion about corporate sector contribution for SD in Sri Lanka. A dearth of research has discussed the contribution of corporate sector for SD in Sri Lanka, and available research does not address sustainability issues adequately. Hence, researchers are motivated to carry out this study to assess the macro and micro level corporate contribution for SD as Sri Lanka, a member country of the UN, is responsible for achieving SDGs by 2030.

1.2 Objectives of the Study

The main objective of the study is to examine the contribution of the corporate sector in Sri Lanka towards achieving sustainable development. Apart from that, the study aims to;

1. identify the main initiatives of the selected company to meet sustainable development of the country.
2. explore how these initiatives contribute to achieve micro and macro level sustainable development.
3. examine how these initiatives contribute to achieve UN sustainable development goals.

2. Literature Review

2.1 Sustainable Development

Enhancing human activities, increasing population, industrialisation, and expansion of business activities has adversely affected the physical environment in the way of natural disasters, increasing pollution, climate changes, global warming, and the survival of the society and future generation (Klarin, 2018). Therefore, SD, which aligns with socio-economic and environmental development, is a global requirement at present in order to meet balanced development.

Although there are many definitions for SD, the Brundtland Commission's definition for SD "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" is commonly accepted (Emas, 2015). Meanwhile, Smith and Shaicz defined sustainability as the ability of the organisation to carry out the viable business operation in a way of voluntary or governed by the law without negatively affecting the social or ecological system (as cited by Murray et al., 2010). Achieving SD goals is not easy as it needs to comply with three pillars of the economic, social, and environment (Ishak & Ishak, 2017). Sachs (2010) has stated there is no development or sustainability without SD. With this respect, SD is a hot topic in the business agenda across the world. Corporations have initiated various activities and programmes to overcome man-made negative environmental and social impacts while achieving SD (Adams & Frost, 2008).

Particularly, United Nations (UN) has announced SD agenda to mitigate the negative environmental impact of human activities. Therefore, organisations are urged to accommodate SD practices to their business objectives and strategies (Davis & Searcy, 2010). Implementing such practices in the business can uplift benefits to the environment and society, and the corporate sector. It could be helped to diminish operation costs by minimising wastage and resources consumption while enabling the ability to optimise the revenue and profits through the green concept.

2.2 Triple Bottom Line (TBL) and Sustainable Development

Triple bottom line (TBL) attempts to keep a balance between three main pillars of economic, social, and environmental sustainability as introduced by Elkington in the mid-1990 (Hammer & Pivo, 2017). The notion of these three aspects in the sense of an organisation is to be measured by the bottom line for each pillar to obtain long-term sustainability and maintain the organisation's operations in a balanced manner (Carrick, 2012). According to Klarin (2018), environmental sustainability refers to the corporate contribution to enhance human well-being by protecting natural resources mainly consisting of minerals, air, water, land, and the entire ecological system. It focuses on how the business runs while protecting the physical environment and maintaining an ecological balance essential for protecting the earth and sustaining society.

Social sustainability emphasises the corporate contribution and investment to develop social capital which is required to generate a basic framework for society. Therefore, it further tries to ensure equality, labor practices, human rights, ethical work, product responsibility, improving people's living status and helping to community development, etc. Economic sustainability refers to maintaining and controlling constant capital through earning a fair return. So, firms need to contribute to economic development by creating employment opportunities, contributing to Gross Domestic Production (GDP), performing to improve value for money, etc.

2.3 Corporate Contribution for Sustainable Development Goals

At present, the entire society is facing serious challenges with respect to the rapid reduction of natural resources, mainly forest, water and energy, unsustainable consumption of goods and resources, increase of global warming, waste and toxic and urbanisation etc. as it may be a challenge to the entire world (Glenn & Gordon, 2002). With an understanding of the consequences of these environmental, social and economic problems, in 2015 United Nations (UN) has introduced 17 SD goals to be achieved by 2030 by its member countries (figure 01). So that irrespective of ownership structure, sector, size, legality or location, most countries are collectively working to avoid negative social and environmental issues of their operations while contributing to SD (Organisation for Economic Co-operation and Development, 2017). At present, business managers have identified the complexity and significance of these problems and their responsibility and contribution to minimise such adverse impacts on society and the the environment. The extent of corporate contribution for SD depends on the extent of their social responsibility. After SD concept came as a part of the business agenda corporate community paid their attention largely to overcome current environmental and social problems accommodating sustainability strategies into their corporate goal.

Since the business sector is the key player in addressing such sustainability issues, the UN has requested both public and private entities to adopt SD practices into their business strategy as such practices will be benefited to the company and the environment economy and society. Furthermore, the literature says that after the term 'sustainability' was popularised in 1987, it has been widely accepted by all

organisations as to demonstrate their commitment to sustaining the environment, economy, and society (Ishak & Ishak, 2017). In parallel to that, corporate entities will be able to gain competitive advantages as they can operate with low cost to reduce resource consumption, earn additional income through green products, enhance market share through customer loyalty and reputation, avoid environmental penalties, etc. So, companies that adopt sustainability practices are stronger in the market as well as having more competitive advantages. According to Kolk (2016) building, a corporate reputation for environmental responsibility has become an important target for many corporate entities today.

But balancing the economic, environmental, and social impact is a great challenge to business managers. However, after understanding the importance of SD, almost all public and private entities globally now largely contributes to different aspects of maintaining attractive return on investment, adding economic value for their products, creating value for money, meeting mandatory tax payments, helping to community development, adhering and maintaining acceptable labour regulations, protecting the environment in the way of reducing pollution, contributing to reduce carbon footprint and global warming and sustaining natural resources in order to meet SD at present.

2.4 Sri Lanka Moving towards SDGs

As a member country of UN, Sri Lanka has taken several steps to meet SDGs by 2030, enacting Sustainable Development Act No.19 of 2017 to introduce and implement national policies through the Sustainable Development Council. At present, the corporate sector has also identified its responsibility and contributed to achieving SD in Sri Lanka. By recognising the contribution for SD, 130 corporate entities (out of 287 listed companies) were awarded by the Institute of Chartered accountants in 2019. It implies that the effort and contribution of the Sri Lankan corporate sector to achieve SDGs is substantial.

Sri Lanka currently performs with an average contribution towards SD as a country and ranks as 94 out of 193 countries with an overall score of 66.9. Sri Lanka achieved the dominant aspect of controlling the country's poverty level from 13.2 to 0.27 percent in between 2002-2018 (Cuaresma et al., 2019). Moreover, the country has placed in 66th

rank of the Global Food Security Index while the country has shown considerable positive progression on many indicators such as free health care, welfare programmes, and free education at the national level (Financial Times, 2015). Moreover, the Unemployment rate in the country declined from 8.76% (2002) to 4.20% in 2019 (International Labour Organisation, 2020), which illustrates that the country has positive labor options and security. Corporate and government entities have encouraged females to be occupied while giving equal opportunities to them. Additionally, Sri Lanka has achieved all aspects of quality education, and in 2018, 99.11% of children aged between 5 to 11 years and 98.4 % of aged 12-14 years children received education (United Nations Educational, Scientific and Cultural Organisation, 2020).

Meanwhile, free health services significantly diminish infant, child, and maternal mortality towards a very low range compared to other regions. The neonatal mortality rate has declined from 9.60% (UNICEF, 2020) to 4.5% in 2000 to 2018 while the mortality rate under age five declined to 7.4% in 2018. As a result of free and quality health services, forecasted male life expectancy is 71.7 years in 2025 whereas 81.7 years for women. Further, Sri Lanka has recorded a very low HIV infection among people as 0.01% in 2018 (United Nations Children's Fund, 2020). As a result of negligent driving, 14.09% of traffic deaths occurred, whereas the global indicator illustrates its value of 3.2%.

3. Research Site

The selected company for this study (referred to as INSEE) is a prominent cement producer across Southeast Asia, established in 1969. This company is the foremost green cement manufacturer in the Sri Lankan context with having green labeling certificate. Few years ago cement industry was considered as the greatest contributor towards environment pollution. Still, this company has successfully mitigated environmental issues by implementing strategies while maximising process and production. INSEE operates its plant in three locations with five logistics and distribution centres throughout the country to fulfill consumers' requirements. The Puttalam plant is a fully integrated factory in Sri Lanka, and Galle and Ruhuna plants are grinding plants that give fresh cement to the market with high quality. Five logistics

centres are located at Colombo, Palliyagoda, Keleniya, Kurunagala, and Trincomalee, while the main quarry site is at Aruwakkalu, and head office is at Colombo. The company has exposed its brand and trust across the country and widespread its distribution channel networks among more than 7000 dealers. Moreover, sustainable waste management is one of the dominant aspects of the company. Company eco-cycle has managed more than 600,000 MT of industrial wastages and converted them into electricity. As a responsible corporate entity in Sri Lanka, INSEE is aligned towards achieving SD by covering all aspects such as social, economy, and environment (sustainability report, 2018). Since its operations are having crucial issues with respect to the environment and social aspect researcher is of the view that this company is the best case to analyse how it contributes to SD managing such issues.

4. Research Design

In this study, the research philosophy that was adopted is interpretivism, and approach is inductive. Research questions mainly address “why and how” questions. Therefore, the research strategy employed in this study is explanatory in nature since the main focus of the study is to discuss how Sri Lankan corporate entities contribute to sustainable development, selecting a leading manufacturing company as a case.

4.1 Data Collection and Analysis

Primary data was collected mainly through in-depth interviews, observations, and field visits. In total, nine interviews were conducted with key organisational members who are in the top position in the decision-making hierarchy of the company and whose work is much sensitive to create environmental issues. They are Plant Manager, Environment and CSR Manager, Process Performance Engineer, Health and Safety and Admin Manager in Puttlam plant, site manager of mining site at Arruakkalu, site manager eco- cycle plant at Katunayaka, Logistic operations manager at Peliyagoda warehouse, Company Communications and Reputation Manager and System Compliance Manager in Colombo office. Furthermore, the validity and reliability of data collected through interviews were confirmed during the field visit at Puttlam plant. We were able to observe the real operation process and its environmental impact. Further, the secondary data collected after reviewing the company website, handbooks, and other internal reports available at the plant site and the head office, and

sustainability reports of the company and similar companies in the South Asian region were also used to confirm the findings. Due to the prevailing Covid-19 pandemic situation, face-to-face interviews were conducted only with the managers at Puttlam plant site, whereas other managers were interviewed over the phone.

All the transcripts and detailed notes of the interview were labeled under main themes, which were most appropriate to this study. Since this research is to analysis corporate contribution for SD as per the classification of Akinyode and Khan (2018) contribution for SD is named as a global theme while economic, environmental and social themes were named as organising themes and individual components of each organising theme (for example components of environment sustainability such as waste management, carbon emission control and power consumption etc.) were named as basic themes. These themes were analysed in-depth with the support of the theoretical framework proposed in this study to draw a meaningful conclusion about contribution towards Sri Lankan corporate entities for sustainable development.

4.2 Theoretical Framework

Stakeholder Theory (ST) was applied as the theoretical framework of this study since ST broadly focuses on optimisation of wealth and value creation for all stakeholders rather than maximisation of shareholders' wealth (Hörisch, 2015). The term stakeholder(s) covers a border range of individuals and groups with a 'critical eye' on corporate activities (Harmoni, 2013). In 1984, Freeman discussed the accountability of business entities to entire stakeholders when he introduced ST as a new business strategy and model (Colvin & WittJustine, 2020), while Aly et al. (2019) identified the significance of understanding stakeholders' relationship and their needs and objectives. Carroll (1999) has discussed corporate social responsibility under four economic, social, ethical, and philanthropic pillars through the CSR pyramid. As many prior literatures have concluded, corporate entities need to satisfy all stakeholders' expectations creating value for their interest to successfully run the business at the society. It implies that corporate entities are accountable to the entire society, and it is known as social responsibility. ST has broadly discussed stakeholders' "right and power" to know information about how business entities operate in society while using

social resources. Therefore, at present, business entities focus not only on economic development but also on social and environmental development.

After the SD concept was introduced mainly after 2000, corporate entities globally contributed significantly under three broader economic, social and environmental areas, known as the Triple Bottom Line (TBL) concept (Hammer & Pivo, 2017). Therefore, TBL concept, which has been derived from ST, is also applied as part of the study's theoretical framework since the main objective of the study is to discuss corporate contribution for SD.

5. Data Presentation

5.1 Sustainability Concern of INSEE

The cement manufacturing process generally creates many environmental and social issues. By understanding such problems, INSEE has formulated its processes under four main green concepts of sustainable operations; high quality products with low carbon footprint, sustainable construction with low social cost and process, production with green mark certification to minimise environmental and social issues while contributing to SD (INSEE sustainability report 2018). Company vision about SD is evident from the plant manager's view;

Our effort is to minimise negative impact of our activities on the environment, facilitates to underprivileged people in our operation areas and contributes to economic development of the country in way of adding value to local resources; strengthen local supplies and contributing to macro level economic development.

5.2 Economic Sustainability

As a responsible corporate citizen, every corporate entity needs to contribute to economic development of the country which it operates. As plant manager stated;

Our company has significantly contributed to the economic development of the country in way of paying taxes, investing in infrastructure development, providing employment opportunities and adding value to GDP of the country.

Referring to 2018 sustainability report INSEE import tax payment to the government was Rs.2,214 Million (Mn) while company has spent Rs.2,199 Mn for infrastructure development of the country in the way of production capacity expansion, eco- cycle capacity expansion and contributing to national development projects. Company has provided about 650 fulltime employment and 1,100 contract employment opportunities while more than a thousand indirect employment opportunities and more than 3,500 people economically benefited from the company's CSR projects.

Direct economic contribution of INSEE for SD in the year 2018 is summarised as shown in Table 1.

Table 1

Direct Economic Contribution (Rs. Mn.)

Economic value generated - Revenue	30,585
Economic value distributed	
Operating costs	25,025
Employee wages and benefits	2,306
Payments to Government	2,214
Project Expansion	2,199
Community investments	12
Environmental investments	42
Dividends/Capital cost	1877

Source: INSEE Sustainability Report, (2018)

5.3 Environmental sustainability

According to the nature of the manufacturing process, the cement industry creates many environmental issues. But INSEE has taken significant steps to minimise its environmental problems. As per the INSEE sustainability report 2018 p.32 “we want to take definite actions to support the Paris climate agreement which aims to prevent the rise of global warming”. So, the company has incorporated its environmental management practices into business strategy, whereas environmental issues have been integrated into the decision-making process.

5.3.1 Environmental Compliances

As System Compliance manager of INSEE stated;

We need to get two Environmental Protection License (EPL) certificates. One from the Central Environmental Authority (CEA) of Sri Lanka and another one from the Environmental Authority of North-western province. In addition to that, quarry site operations should comply with prescribed guidelines of the lease agreement with the government. But our present operation practices are much better than the minimum legal requirements as we voluntarily do many environment-friendly activities.

This aspect has further documented in INSEE sustainability report 2018 as;

Our plants' operations have fully complied with all regulatory requirements applicable to the cement industry; including the National Environmental Act and other specific covenants, adopt globally accepted best practices for the benefit of wider range of community, BASEL conservation on hazardous waste and disposal and annual audits are conducted as part of the ISO 14001 EMS and ISO 50001 EMS.

The Plant manager mentioned;

We exercise a zero-tolerance approach towards non-compliance with all laws, rules, regulations, including laws pertaining to anti-competitive behaviour. To ensure 100% compliance record in all relevant economic, social and environmental areas, we have in place an integrated Plan-Do-Check-Act cycle. Meanwhile, we have appointed compliance champions at the site level. As part of their duties, they are required to seek employee inputs for formulation of policies and effective implementation of compliance programmes for Quality, Environmental, Occupational Health and Safety and Energy programmes in their line of work.

Compliance track record of the INSEE for the year 2018 is shown in Table 2.

Table 2*The compliance track record of the INSEE for the year 2018*

Incidents of non-compliance regarding anticompetitive behaviour and violations of anti-trust and monopoly legislation	Zero
Incidents of non-compliance with regulations and/or voluntary codes concerning product and service information and labeling	Zero
Significant fines and non-monetary sanctions for non-compliance with laws and regulations in the social and economic area	None
Significant fines and non-monetary sanctions for non-compliance with environmental laws and regulations	None

Source: INSEE Sustainability Report (2018)

5.3.2 CO₂ Emission Control

Since INSEE has an utmost concern about how to reduce global warming, it has taken several steps such as upgrading combustion equipment, reducing limestone contents, using substitute material and introducing sophisticated monitoring systems, etc. over the last few years (INSEE Sustainability Report, 2018). As Process Performance Engineer said;

As we realised that the limestone content of our product is higher than that of international standards, we reduced it up to international level. Consequently, we were able to reduce CO₂ emission at burning stage of limestone which leads to reduce global warming.

Further he added;

We have reduced coal consumption by 34% and use alternative fuels such as biomass, garment waste and seed materials (paddy husk) while clinker replaces with mineral component like dolomite, unburned limestone and fly ash. As a result, now we operate with less CO₂ emission, i.e. 573 kg CO₂/ ton of cement which is the lowest level at the industry of the southern region.

Logistic operations manager said;

At present wholesale customers can buy from our regional warehouses since we transport production from plant site to regional warehouses using heavy vehicles which carries bulky load at a time. So number of vehicles come to plant site can be minimised. Consequently, we indirectly contribute to reduce fuel consumption and CO₂ in our distribution channel.

5.3.3 Sustainable Power Consumption

The Cement industry is a high energy-intensive industry. Mainly coal is used at the Puttalam plant kiln which requires more than 1450°C to produce clinker, while electricity is used mainly for grinding and mixing process. In 2018, 125,434,477 KWh of electricity was consumed by the Puttalam plant and Ruhuna cement plants. So, the company has initiated several steps to reduce power and energy consumption and CO₂ emission. As Process Performance Engineer commented;

We took several steps towards reducing the dependency on fossil fuels especially coal. So, we have begun researching the use of greener fuels i.e. bio fuel. As we have a separate business unit for eco cycle which entirely focuses on waste management and we take waste from many industries and paddy husk from rice mills and disposing of them through our Kiln. The facility currently meets approximately 34% of the energy requirements of the Puttalam cement plant kiln. Our target is to increase alternative fuel mix up to 45% within next few years.

INSEE sustainability report (2018) shows the percentage that company has reduced energy consumption over the years, as shown in table 3.

Table 3

Energy Savings Records

			2008	2018	Saving	
Specific Thermal Energy Consumption(STEC)			3860	3789	-71	MJ/t Clinker
Specific Electrical Energy Consumption (SEEC)			105.35	94.3	-11.1	KWh/t Cement
TSR% Thermal Substitution Rate			22.36%	33.94%	11.60%	

5.3.4 Sustainable Water Consumption

As INSEE has remained conscious of water efficiency in the areas of its plant operations, the company's water resource management efforts mainly focus on the careful use of water resources, develop infrastructure for rainwater harvesting and investing in the effluent treatment plant (INSEE Sustainability report, 2018).

On this, Environmental and CSR manager said;

We have improved production process to reduce water consumption, do recycle and reused and rain water harvesting. As a policy, our plants do not discharge wastewater to the ground, and all water used in our operations is treated in sewage or effluent treatment plants. Additionally, we have installed a water recycling unit and rain water harvesting system in this plant site.

In 2018 its total water consumption was 97,843 cubic meters (m³) and 80,770 m³ (82.6%) were withdrawn from deep wells at the plant site and 12,274 m³ (12.7%) were purchased from Municipal supplies and 600 m³ (0.4%) from rain-water harvesting while 4,200 m³ (4.3%) was recycled water (INSEE Sustainability report, 2018).

5.3.5 Circular Economy- Waste Management

Considering that INSEE is in the cement manufacturing industry, it does not generate any waste. But it provides the best solution to waste generated by most of the other industries in the country by collecting their waste and using them to generate power requirement of Kiln. INSEE is the only waste management service provider in Sri Lanka licensed by CEA for the handling and transport of hazardous waste. The site manager eco- cycle plant at Katunayaka stated on this aspect as;

We collect about 250 mt of industrial waste per day at our eco-cycle waste pre-processing facility unit and shredding facility unit. Furthermore, we have signed agreements with 50 local government councils to take and dispose their non- recyclable and non-degradable solid waste through our operating system.

5.3.6 Air Pollution Control

In general, the cement manufacturing process primarily generates dust emissions which may create many environmental problems such as air pollution and water pollution. So, INSEE has taken proactive approaches to ensure its processes operate with low dust emissions. As Environment and CSR manager commented;

We have implemented several dust suppression initiatives to ensure they remain within the CEA's baseline standards. More recently, we use filtering systems, which absorb dust through bags. Also, we use dry fogging system, road watering, covering and closed yards to reduce the dust. Our filtering system runs as an air purifier which filters up to 99.97% of airborne particles, help

effectively to control and reduce dust emissions. Currently, plant site dust emission level is 1mg per cubic meter which is much better of its standard of 293mg per cubic meter.

As Plant Manager said. *“In every year company plants 1000 trees like a belt called as green belt to control dusty wind flow”.*

5.3.7 Environmental Conservation

INSEE is committed to environmental conservation in all aspect of its operations. Its main environmental conservation initiatives are bio-diversity conservation, animal rescue programme, coral reef restoration and restoration of a degraded fern land.

With this regards, the System compliance manager said;

Our all operations are conducted according to the national environmental regulations. So we have ensured that our entire operations from manufacturing to dispatch, warehouse and even general office operations are carried out without any damages to the environment of the surrounding area. We extracted limestone in an environmentally compatible and economical manner. Our quarry site is totally managed according to the national environmental regulations such as the National Environment Act and Flora and fauna ordinance as well as the international best practice of RAMSAR convention.

Manager of mining site at Arruakkalu, site stated;

After completion of mining those areas rehabilitate with the same layers of soil and restored plants, bushes, flora and maintain the ecological system and aquatic habits such as artificial wetlands and salt marshes etc. as it were before mining. Furthermore, it needs regularly maintain until growing up replanted forest.

Sustainability report (2018) has stated that 665,000m³ total habitats areas protected and restored in the main quarry site and under animal rescue programme over 12,000 animals rescued and relocated to-date.

5.4 Social Sustainability

Assessing social contribution for SD is another aspect of this study. INSEE’s social sustainability has focused on three main pillars of strong partnership with suppliers

and customers, team building and community development (sustainability report, 2018). As Communications and Reputation Manager stated;

We continuously do research and development to introduce innovative products through our sustainable construction solution of value-added, eco-friendly, quality, strength and durability products. Moreover, we train masons and educate building contactors about green building concept. Further we do suppliers' environmental assessment to ensure their supplies are complying with the requirement of our sustainability agenda.

Health, Safety and Admin Manager stated;

We have developed safe work environment and provide safety equipment to all employees. No one can work without safety wears. As a result of our 'Fatality Prevention Elements (FPE)' procedures, no death or casualties have been reported during the last few years.

In 2018, the company spent Rs. 46 Mn. for employees' training programmes for 18,656 hours with an average of 40hr per employee. Out of total training hours 23% allocated for safety-related training as most of the employees work in an environment with heavy machinery.

CSR policy of the company widely covers social benefits and community development. So, company's special attention is given for the benefits of neighboring people in Puttalam and Ruhuna plants and Aruwakkalu mining site. INSEE has implemented several CSR programmes during the last few years spending Rs. 61Mn i.e. 0.79% from total revenue for the community development projects.

Environment and CSR manager mentioned that;

First we initiate community advisory panel consisting internal and external stakeholders such as District Secretary, Head of the police station, Grama Niladari, Leaders of community-based societies and internal team including Plant manager and Environment and CSR manager. Additionally, we have initiated proper community grievances handling mechanism at company level.

Furthermore, he explained;

CSR projects which we implemented during the last few years are Youth vocational training programme which is implemented by the Enterprise Based Vocational Education (EVE) Training Centre of INECC and the National Apprentice and Industrial Training Authority (NAITA) of Sri Lanka. One other unique programme with the support of Institute of Engineers' Sri Lanka for youth is the 'Concrete Challenge' programme for the final year Civil Engineering students of the state Universities of Sri Lanka.

As he said other community based programmes are

Student support activities which sponsoring for subject teachers of several core subjects (Mathematics, Science and English language), providing library facilities and conducting two pre-schools and providing free school van services for the children living in village nearby Puttalam plant, Clean drinking water supply project for neighboring schools, Campaign to prevent drug use among youth with the support of Galle and Puttalam police stations to prevent school children from using drug and alcohol and other new project is One-Child One-Tree project. At the first phase around 800 school children from 10 primary schools were selected and gifted one plant per student. Additionally, company conducts two medical centres which provide free consultation and prescribed medical drugs to Eluwankulam and Puttalam people at twice a week.

5.5 Alignment with Sustainable Development Goals (SDGs)

INSEE as a responsible corporate citizen it has taken commendable efforts to achieve UN SDGs. As Environment and CSR manager said;

We have designed separate goals for each SDG to achieve a better and more sustainable future for all. In each year we measure their progress and level of contribution for each goal and report it.

Sustainability report, 2018 gives comprehensive details about the company initiatives and level of SDGs achievements. It shows that, although company has not fully

achieved any SDG it has taken significant efforts to achieve them. Furthermore, he said;

By recognising our contribution for sustainable development we were awarded in several times by different national and international organisations in 2018.

Those awards are summarised in table 4.

Table 4

Awards and recognitions

<p>Global Gold Winner of the Industry category at the Green World Awards 2018 in Turkey</p> <p>Presidential Environment Awards 2018 under Solid Waste Recovery, Recycling, Disposal or Processing Category by Central Environmental Authority (CEA)</p> <p>Responsible Care Awards 2018 under Waste Management category by Responsible Care Council</p> <p>Bronze award in recognition of the contribution to the green production process at the Puttalam Cement Plant by the CEA</p> <p>GOLD Green Mark Certification by the Ceylon Institute of Builders (CIOB)</p> <p>Puttalam Cement Plant won Bronze Award in the Chemical Industry Sector at the “Presidential Environment Awards 2018”.</p> <p>Gold award in the Large-Scale Manufacturing Sector of National Level for Social Dialogue and Work Place Cooperation organised by the Ministry of Labour and Trade Union Relations.</p> <p>Recognised as the “Best Mining Company 2018” at the “Bhoo Abhimani Haritha Harasara Pranama Ulela” organised by the Geological Survey and Mines Bureau, Sri Lanka.</p>

6. Discussion and Analysis

6.1 Understanding Social Accountability

INSEE has engaged in environmentally sensitive manufacturing operations mainly using natural resources such as limestone, water and non-renewable energy. So, it creates many social and environmental issues in the areas which it operates. As Freeman (1984) discussed, accountability of business is to all stakeholders (cited by Colvin and WittJustine (2020)). Therefore, INSEE is largely accountable to society mainly local community in neighboring villages of quarry and plants sites as company uses local natural resources of the operating areas. As Harmoni, (2013) and Hörisch, (2015) emphasised, the importance to formulate business strategies and perform operations to maximise value creation of all groups of stakeholders rather than maximising interest of economic stakeholders. Thus, INSEE has developed wider

network covering all possible stakeholders including economic and social stakeholders groups and by conducting regular meetings with them as a part of its business management model. As Carroll (1999) discussed, based on corporate social responsibility under four pillars of economic, social, ethical and philanthropic endeavours, the INSEE also largely contributes to macro and micro level economic development of the country (refer section 5.1) while contributing to social and community development and environmental protection in the areas which it operates (refer section 5.2. and 5.3) broadly identifying its economic and social stakeholders and their expectations while it is operating in a sustainable manner.

Since UN has announced SD agenda to mitigate negative social and environment impacts of human activities, business entities of UN member countries are urged to adopt SD practices to their business agenda to uplift benefits to environment, society and entire economy (Dhahri & Omri, 2020). With deeper understanding of the sustainability, INSEE has clearly presented its sustainability agenda together with the SD strategies and different economic, environmental and social friendly initiatives taken by the company.

6.2 Contribution for Economic Sustainability (EcS)

EcS plays a significant role in SD as it motivates entrepreneurship towards economic development (Royo et al., 2020). As per the TPL, EcS refers to maintaining constant capital through earning fair return and contributes to economic development through creating employment opportunities, contributing to GDP and performing to improve value for money etc. (Klarin, 2018). Both micro and macro level economic contribution is important for EcS (Thomas & Chindarker, 2019). INSEE as a responsible corporate entity has directly and indirectly contributed to EcS of the country generating an economic value in addition of RS. 30,585 Mn, as shown in table 4.1 and implementing many other social projects explained in 4.2.3 by investing Rs. 12 Mn in the year 2018. Further company has used 49% of total procurement from local sources paying Rs.14,335 Mn for local suppliers. So, INSEE has commendably contributed to the EcS of the country like other similar corporate entities of Lafargeholcim and Ambuja cement etc.in the region.

6.3 Contribution for Environmental Sustainability (EnS)

According to the TPL concept EnS refers to the corporate contribution to enhance human wellbeing by protecting natural resources like minerals, air, water, land and entire ecological system (Klarin, 2018). Further, reducing the use of non-renewable resources (Dhahri & Omri, 2020), reducing CO₂ emissions and environmental pollution (Song et al., 2019), green production process to reduce ecological scarcity (Ucala & Xydis, 2020) are the other mechanisms to improve EnS which focuses on how business can operate while protecting physical environment and maintaining an ecological balance. As study found INSEE maintain leadership status of environment management and it has ensured 100% compliance in all relevant environmental areas and the company has properly structured environmental management systems in every aspect of its operations while effectively contributing to control global warming through reducing CO₂ emission, providing sustainable solution for non-renewable energy consumption, water consumption, waste management, air pollution and maintaining bio-diversity.

6.3.1 CO₂ Emission Control

Reducing CO₂ emissions and environmental pollution in every aspect is important to achieve EnS (Song et al., 2019). The cement manufacturing industry is among the most energy-intensive industrial sectors and one of the largest contributors to CO₂ emissions and air pollution (Morrow et al., 2014). The global cement industry has released 5.1 billion tons of CO₂ into the atmosphere in 2018 (Arel, 2016), and it has a significant adverse impact on socio-economic development in the locality (Ince, 2019). As this study revealed, INSEE has a clear concern about reducing CO₂ emission in their production process. They were able to reduce 78-80% of clinker content, which mainly generates CO₂ using substitute material of fly ash, which does not generate additional CO₂ at their process. Currently, they operate with 573 kg CO₂/ ton of cement, which is the lowest level at the industry of the southern region. It implies that INSEE has made a momentous contribution to controlling global warming through reducing CO₂ emission of its operations.

6.3.2 Sustainable Power Consumption

The use of renewable energy may aid economic growth and reduce CO₂ emissions (Mahmood et al., 2019). Meanwhile, Dhahri and Omri (2020) have stated that replacing

non-renewable energy resources with renewable sources is an effective way to achieve EnS. A study found that INSEE has been able to reduce coal consumption by 34% using alternative fuels such as biomass, garment waste, and seed materials. The company's target was to increase the proportion of alternative fuel mix up to 50% by 2022. So, it will help to reduce non-renewable energy consumption immensely. Table.3 shows the contribution for EnS through sustainable power consumption.

6.3.3 Sustainable Water Consumption

Scarcity of water will be a prominent environmental problem in the future. One of the key elements of SD is water security (United Nations, 2015). The relevance of water security coped with the global water crisis and urged water security as an overarching global goal (Zhu & Chang, 2020). As the environmental and CSR manager said INSEE has clear consciousness of water- efficiency, which is also evident from the sustainability report as they do water recycling, reuse water, and rainwater harvesting. According to the Sustainability report, 2018 and section 4.2.2.4 of the study explain that company effort to improve water- efficiency and sustainable water consumption policy.

6.3.4 Circular Economy- Waste management

A huge amount of solid waste collection and its treatment is a real environmental burden in every country (Seara-Paz et al., 2016). Since, at present, the cement industry worldwide uses municipal solid waste (MSW) as its energy generating source and substitute raw materials, it will provide the best solution to mitigate the solid waste burden (Carvalho et al., 2017). Findings of the study show that INSEE collects about 250 mt of MSW and industrial waste per day at their eco-cycle waste pre-processing facility unit and shredding facility unit at Puttalam cement plant. Furthermore, the study says INSEE, a socially responsible corporate citizen, plays a vital role in disposing of non-recyclable and non-degradable solid waste through its operating system providing sustainable solutions to the waste problem in Sri Lanka.

6.3.5 Air Pollution Control

One of the crucial inherent environmental pollution factors with respect to the cement industry is air pollution through generated dust at the plant sites and neighbouring areas.

According to Li, Zhang, Du, and Chen (2020), the cement manufacturing industry is the second largest emitter of air pollution while Zhang et al. (2016) said the cement industry generates 5–7% of anthropogenic CO₂ worldwide with very high air pollutant emissions. So, with understanding, this situation INSEE has installed dust filters that absorb dust through bags and use other methods like dry fogging system, road watering, covering, and closed yards to reduce the dust. Consequently, its plant site's dust emission level at present is 1mg per cubic meter, which is much better than its standard of 293mg per cubic meter. It indicates that INSEE has made significant efforts to reduce air pollution to maintain a healthy environment at the workplace and surrounding areas.

6.3.6 Biodiversity and Environmental Conservation

Biodiversity and sustainable development are interrelated (Xu et al., 2020). So in 1992, more than 150 countries signed the Convention on Biological Diversity (CBD) as a common goal of conservation and sustainable use of biodiversity (Wang et al., 2020). Therefore, business needs to perform their operations preventing damage for biodiversity. But integrated cement manufacturing process heavily damage to biodiversity as it does mining to supply limestone requirement. However, the findings of the study reveal that INSEE takes substantial efforts such as environmental impact assessment and biodiversity mapping, including existing flora and fauna stock and special biological values before starting mining. Then after mining, the company rehabilitates all mining lands with the same soil layers, restores plants, bushes and flora, and maintains the ecological system and aquatic habits such as artificial wetlands and salt marshes, etc., while rescued and relocated animals reside at the quarry expansion areas.

When compared with the contribution for environmental sustainability of similar companies in the Southern region, mainly Lafargeholcim and Ambujha cement (INSEE sustainability reports, 2018), they also have taken the same kind of initiatives in different levels. This study found that INSEE is a responsible corporate citizen in Sri Lanka. It has taken generous voluntary initiatives as it contributes to preserving the environmental sustainability of the country, and outcomes of those initiatives are in line

with the environmental sustainability pillar of the TBL.

6.4 Contribution for Social Sustainability (SoS)

According to the TPL concept of SoS refers the corporate contribution to develop social capital and engage in ethical and socially responsible business (Klarin, 2018). SoS further tries to ensure equality, human rights and labour practices, improving the people's living status and helping to community development, etc., since better social sustainability would lead to an improvement in people's living conditions of current and future generations (Shirazi & Keivani, 2017). The study found that INSEE has taken several initiatives to achieve SoS as follows.

6.4.1 Strengthen Partnerships with Key Stakeholders

Strengthen partnerships with multi-stakeholders is one of the key drivers of the business success and the successful implementation of SDGs (Joon, 2017). Therefore, most of the leading corporate entities worldwide use stakeholders' engagement to manage them to run the business smoothly while supporting all the stakeholders in the society. Consequently, INSEE has been able to strengthen partnership with a wider range of stakeholders and identify and implement several social projects for the betterment of society and the company's prosperity. Sustainability reports of similar companies like Lafargeholcim and Ambuja cement and other leading companies in Sri Lanka also use stakeholders' meetings as a part of their business strategy.

6.4.2 Team Building

A motivated and enthusiastic work team is the main secret of the organisational success as it effectively contributes to corporate sustainability (Jamali et al., 2014). Similarly, effective work teams support overcoming organisational challenges while designing strategies and implementing them. Hence, caring for the employees is a part of the wider social responsibility agenda organisations use to build effective work teams through better work conditions, work environment, improving workplace safety, supporting skill development, and improving welfare and other work related facilities (Digalwar et al., 2020). The study found that INSEE prioritises building effective work teams by implementing workplace safety programmes to prevent workplace accidents, developing a healthy workplace environment, providing training

facilities, and paying attractive remuneration package. Moreover, findings prove that workplace accidents have been zero over the last few years whereas Lafargeholcim and Ambuja were also able to maintain a similar position.

6.4.3 Community Development

Corporate entities and communities are interrelated. Thus, community development is one of the other aspects of SoS (Kochhar, 2014). Many corporate entities do community development activities that carry social welfare as philanthropic responsibility (Moyeen & West, 2014). The study reveals that INSEE has identified its social responsibility in terms of community development as the company mainly depends on local resources available in operations areas. The company has taken many momentous initiatives, as discussed in section 5.3 above, to benefit the local community. When community development activities of similar companies in the region are compared, they also do similar activities in different levels that depend on their operating scales.

6.5 Alignment with Sustainable Development Goals (SDGs)

SDGs as a universal agenda encourage both the public and private sectors to contribute to achieving them by 2030 by performing economically, socially, and environmentally friendly (Campo, et al., 2020). Adenle (2020) found that solar technology adopted by selected African countries contributes to SD in all three aspects of TPL and achieves SDGs. Ike et al. (2019) stated that multinational enterprises significantly contribute to achieving SDGs at their mother countries and operating countries. According to the findings of this study, the level of SDGs fully achieved by INSEE are; SDGs No.4 Quality education and No.13 Climate action while No. 1 No poverty, No. 8 Decent work and economic growth, No.12 Responsible consumption, and production have not been fully achieved due to the challenges. With respect of No.3 Good health and well-being, No. 11 Sustainable cities and communities, No. 14 Life below water, No. 15 Life on land and No.17 Partnerships for the goals have not been significantly achieved, and significant challenges remain while level of achievement of No.2 Zero hungry, No.5 Gender equality, No.6 Clean water and sanitation, No.7 Affordable and clean energy, No. 9 Industry, innovation and infrastructure, No. 10 Reduce inequalities, No.16 Peace, justice and strong institutions are still poor and major challenges remain.

When it compares with the level of SDGs achievements of Lafargeholcim, it has achieved all SDGs other than No.2 Zero hungry, No.10 Reduce inequalities and No.11 Sustainable cities and communities (Lafargeholcim sustainability report, 2018). Although the level of SDGs achievement of INSEE do not reach up to the level of Lafargeholcim achievement, study reveals that being INSEE is a responsible corporate entity in Sri Lanka by understanding its social responsibilities, stakeholders' expectations and UN guidelines for SD, it has initiated and implemented several programmes to achieve SDGs while satisfying TBL concept and stakeholders theory.

7. Conclusion

The study has mainly aligned with three key pillars of TBL identified by Elkington, 1990 (Hammer & Pivo, 2017), principles of stakeholder theory as presented by Freeman (1984) (cited in Colvin & WittJustine, 2020), and UN SDGs. The study applied a qualitative methodology based on a leading cement manufacturing organisation in Sri Lanka (INSEE) as a case. The study aims to understand the main initiatives of INSEE for the SD of the country, to examine how these initiatives contribute to achieving micro and macro level SD, and to examine its achievement of SDGs. INSEE mainly depends on the natural resources of limestone, which is extracted from the local area in which it operates. According to the nature of the operation process, it creates several environmental and social issues due to high CO₂ emissions, high power and water consumption, air pollution through dust, and damage to biodiversity, etc. However,, INSEE, a responsible corporate entity that has operated over many years in the country, has properly understood such adverse impacts and has formulated its strategies to overcome those issues while creating economic, environment, and social values.

With respect to economic sustainability (EcS), the company has been able to contribute to macro and micro level economic development of the country. Its economic value added during the year 2018 was Rs. 30,583 Mn whereas 7.5%, 7.2% and 6.1% have been paid for employees, government as tax, and investors as dividend and capital cost, respectively. Additionally, over 5,000 employees were directly and indirectly benefited while local suppliers were empowered by buying 49% procurement from them. Moreover, the company has extended its support to neighbouring villages in terms of CSR activities to uplift their economic and living status, which indicate macro level

economic development of the country. Apart from that, results of company initiatives to reduce energy cost while generating energy using MSW, sustainable water consumption with recycling and rain water harvesting, reduce material cost through substitute material and upgrading operating system to reduce waste and CO₂ has directly contributed to increase bottom line (profits) of INSEE as micro level economic benefits.

Although INSEE operations heavily create many environmental issues, the company is able to control such impacts by implementing a strong environmental management system. Currently, company tremendously contributes to reduce global warming and climate change by reducing CO₂ emissions of 573 kg CO₂/ ton of cement which is the lowest level at the industry of the southern region in way of reducing coal consumption by 34%, reducing clinker mix in the product up to 78%-80% and using substitute material. Further, INSEE follows sustainable power consumption policy and sustainable water consumption policy through recycling and rain-water harvesting. Plant site dust emission level of INSEE is 1mg per cubic meter while it's standard is at 293mg per cubic meter. Moreover, the company has initiated environmental conservation projects such as bio-diversity conservation, animal rescue programme in quarry sites, coral reef restoration, and restoration of degraded fern land in upcountry.

INSEE has identified that it is possible to manage stakeholder groups and strengthen partnerships by conducting regular meetings to understand their expectations. Caring employees is one of the other key concerns of INSEE. Hence, the company has implemented several programmes to prevent workplace accidents, improve a healthy workplace environment, provide training facilities, pay attractive remuneration package, etc. to build an effective work team with satisfied employees. Further, INSEE has carried out different community development programmes such as youth vocational training programmes, student support activities, clean drinking water, and sanitary projects, campaign to prevent drug use among youth and community wellness programmes etc for the benefit of school age children, youth, adults, and the entire society to improve their education, health, living and social status.

In conclusion, the findings of the study reveal that INSEE has significantly contributed to the sustainable development of the country in every aspect as an ethical corporate citizen while its activities have been directed and moving towards the achievement of SDGs by 2030.

8. Implications of the Study

Stakeholder theory has emphasised that when corporate entities operate in society as part of the wider social system, all possible stakeholders' expectations will be addressed reasonably. Consequently, corporate entities will be able to achieve micro level (organisational - economic) and macro level (social) development, which is broadly discussed as a corporate contribution for SD under TBL concept. So, this study aims to analyse how INSEE has been contributed to SD while satisfying stakeholders' expectations. Findings are in line with the stakeholder theory and TBL since INSEE has implemented several economic and social projects in order to satisfy all possible stakeholders' expectations while significantly contributing to SD of the country. Moreover, the findings of the study provide valuable insights to managers of INSEE to assess their own contribution for the SD and formulate new strategies to further improve the performance of the areas which have not been achieved so far. Similarly, findings of the study could be useful to managers of the other corporate entities since INSEE plays a role model for the industry while significantly contributing to the SD of the country.

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WORKING CAPITAL MANAGEMENT AND BARGAINING POWER IN THE NEO-LIBERAL ECONOMIC CONTEXT

Abeyasinghe, C.

Department of Accounting, Faculty of Management & Finance, University of Colombo
c_abey@dac.cmb.ac.lk

Abstract

Working capital management is largely discussed in the literature for its importance to maximise the performance of business firms. However, an all-agreed definition is yet to be found in the literature for the phenomenon of working capital. On the other hand, the performance of working capital management is explained mainly as its relationship to profitability. Some of these findings are conflicting. This research note, benefitting from theories of managerialism and neo-liberalism, analyses these explanations and find that the bargaining power of business firms in their markets influences some working capital management decisions. Findings of this paper question some existing explanations based on managerialist ideology and inform the need of paying attention on the bargaining power in the market instead.

Keywords. Working capital management, Neoliberalism, Managerialism, Bargaining power of business firms

1. Introduction

This is a research note aiming to invite the attention of researchers to see the working capital of an organisation from a different angle. Currently, many scholars consider working capital as an internal phenomenon within the control of managers of a business firm. However, this research note intends to show its dependency on the bargaining power of a firm in its market. Hence, this paper adds to the body of knowledge on working capital management (WCM), inviting a different perspective to look at it for further development.

Working capital enables business firms to operate with no interruptions, and therefore WCM has been in discussion since the 1950s. Sagan (1955) attempted to theorise WCM focusing on managing money for day to day operational needs. Gitman (1974)

introduced Cash Conversion Cycle as a measure of the performance of WCM in firms. Since then, attention has mainly been drawn to see the implications of managing working capital. The majority of studies have attempted to see how WCM influences profitability (Deloof, 2003; Zariyawati et al., 2009; Zhang, 2017a). Some other studies showed how WCM influences the determination of the firm value and shareholder wealth (Abuzayed, 2012; Kieschnick et al., 2013). However, still, no theory has been developed to show how to manage the working capital of a firm, although some studies have attempted to see how to manage some elements of working capital (Pratap Singh & Kumar, 2014).

Some authors attempt to identify WCM as a function of financial management (Ganesan, 2007; Pass & Pike, 1984). Such a perspective prompts the researchers to focus on the opportunity cost of funds invested in working capital. However, a close theoretical inquiry into the working capital suggests that working capital is a result of operations decisions rather than a financial investment decision. Some studies suggest that firms manage working capital by adopting aggressive or conservative policies (Nazir & Afza, 2009). It implies that working capital is an optional decision of a firm to determine whether a smaller amount (aggressive policy) or a larger amount (conventional policy) of working capital needs to be maintained.

The majority of studies in working capital literature attempt to see how WCM create implications on the profitability of firms. Some studies attempt to identify the correlation between its Cash Conversion Cycle (CCC) and its profitability (see, for instance, Gitman, 1974). CCC comprises three elements: days in inventory, days in accounts receivables, and days in purchase outstanding. Some other studies have attempted to investigate the correlation between levels of individual values of the CCC and the firm profitability (Kieschnick et al., 2013). Many studies investigate the relationship between CCC and its elements and firm profitability in different situations (Abuzayed, 2012). Some studies conclude a negative correlation between the two variables and others a positive correlation (For instance, Kaddumi & Ramadan, 2012; Zariyawati et al., 2009). However, the practical relevance of the negative relationship between CCC and firms' profitability is questionable. According to the negative relationship, an increase in customer receivables should decrease profitability.

However, from a practical point of view, higher credit granted to customers can increase sales revenue leading to increased profitability and customer receivable balance. On that ground, a negative relationship between CCC and profitability is questionable.

Common findings on WCM studies imply working capital as an intentional investment made by a firm. These studies look at the increases or decreases in the value of CCC or its elements such as inventory value or accounts receivables as an outcome of a planned decision. Accordingly, the improvement of profitability is an outcome of managers' decisions to increase or decrease working capital. Practically, this situation is different. In the competitive market, the potential sales revenue depends on the market, and customer credit is a strategy to obtain a higher revenue. However, a firm that has been able to establish its brand well in the competitive market may not provide extended credit facilities for creating a higher sales potential. Therefore, working capital can be an outcome of the bargaining power of a firm in its market.

This research note aims at drawing the attention of researchers to further investigate this reality of understanding WCM. For this purpose, working capital as a phenomenon needs to be understood. Currently, some define it as a balance between current assets and current liabilities (Pass & Pike, 1984). Some others identify it into gross and networking capitals (Pratap Singh & Kumar, 2014) differently (Kieschnick et al., 2013). The literature reveals a variation in understanding the concept of working capital, and such a variation can blur the theorisation of WCM. Hence, this paper questions how to find a commonly accepted definition of working capital and WCM. This paper has two objectives: first, to identify a firm and useful definition of working capital. Secondly, to identify whether the WCM is fully under the control of management, as shown in most studies.

The rest of the paper is structured as follows. First, the existing knowledge of working capital and WCM is presented to understand how the working capital and WCM are defined and major findings on them. Second, the theoretical framework for analysing existing explanations of WCM is constructed, benefiting from theories of managerialism and neo-liberalism. Being a research note, this paper does not discuss the methodology. Then, the analysis of the existing knowledge based on the theoretical

framework is carried out. Finally, conclusions are brought as to the validity of some existing arguments and recommendations for future research.

2. Literature Review

Most research papers explain working capital as the balance between current assets and current liabilities (Pass & Pike, 1984). The same idea is presented as the net short term assets, Current assets minus current liabilities (Ramamoorthy et al., 2019). Filbeck and Krueger (2005) give the same explanation in different wording, as ‘the difference between resources in cash or readily convertible into cash (Current Assets) and organisational commitments for which cash will soon be required (Current Liabilities)’ (p.11). It is common knowledge that equity and borrowings are long-term funds to finance any business. The cost of capital of long-term finances are higher than short-term finances, or in other words, long-term funds are expensive (Filbeck & Krueger, 2005). Hence, long-term finances are invested in non-current assets, which have a higher earning potential than current assets. However, no business firm can continue to operate without current assets as inventory, accounts receivable, or cash. Earnings from current assets are very low: no earnings possible from the inventory but stock holding cost needs to be incurred; no earnings from accounts receivables and no earnings from cash in hand or at bank. Smaller income is possible from short-term investments. On the other hand, accounts receivable and cash are changing values of the inventory, which is acquired from suppliers on credit basis. Under this situation, additional funds are required to settle payables to suppliers. For this reason, some long-term funds need to be invested in current assets namely working capital. Accordingly, the working capital of a firm, whether it is identified as the balance between current assets and current liabilities or the net short-term assets, is the long-term funds invested in current assets.

However, some studies explain working capital into two categories: gross working capital and net working capital, where the former is considered the total of all current assets and the latter as the current assets net of current liabilities (Pratap Singh & Kumar, 2014). When we are convinced that working capital is the long-term funds invested in current assets, we cannot find a rationale to agree with this definition. We need working capital for day to day operations and to avoid interruptions to business

operations. We would like to collect this money from operations. If such collections are inadequate, would like to take from short term facilities (Kieschnick et al., 2013) such as bank overdraft. However, if such a shortage of funds continues, we need long-term funds to be invested for this purpose as working capital. Working capital, in that sense, does not require to be identified into gross and net as explained by (Pratap Singh & Kumar, 2014). However, gross and net amounts of working capital are recognised elsewhere with a different meaning: gross working capital recognises the excess of current assets over current liabilities, whereas net working capital is the excess of the total value of inventory and accounts receivables over accounts payables. Such identification is sensible because the gross amount of working capital may involve items that are not related to day to day operations, such as short-term deposits, income tax payables or dividends payable etc. Hence, this paper continues with the definition of working capital at its 'net' version and therefore perceive that inventory, accounts receivable and accounts payables as elements of working capital.

2.1 Controlling working capital

Controlling working capital involves controlling three elements, namely accounts payable, accounts receivables and inventory (Kieschnick et al., 2013). Controlling working capital is also identified as an integrated control. It identifies the concept of the Cash Conversion Cycle (CCC), which is the time lag between the payment for the purchase of raw materials and the collection from the sale of finished goods. Hence, controlling working capital is meant controlling CCC. There are arguments to the effect of how managers can control working capital to create the intended performance. For example, Deloof (2003) finds from an investigation of 1009 Belgium firms between 1992 to 1996 that managers can reduce the number of days in inventory and customer receivables to enhance profitability. As a result, less profitable firms have a longer cash conversion cycle.

2.2 Managing Working Capital

Working Capital Management (WCM) is the most talked about topic in the working capital discourse. In common sense, managing is more than controlling. Working capital management is considered to be the management of this net operating working capital (Kieschnick et al., 2013). Abuzayed (2012) argues that working capital

management has implications on the firm value. Working capital management is important because of its effects on a firm's profitability and risk, and consequently the firm value (Caballero et al., 2010).

WCM aims at maintaining efficient levels of current assets and current liabilities (Gul, 2013). The efficient level of working capital is the least cost amount of working capital. The cost of working capital can come from two sources: One is the cost of capital invested in working capital. Secondly, when the working capital is inadequate, interruptions to operations can create costs such as loss of customers due to unavailability of sufficient inventories and their potential income, penalties on delayed payments, and high cost of idle assets. The latter affects profitability. Therefore WCM is meant to be the maintenance of a trade-off between liquidity and profitability (Zhang, 2017b). Liquidity needs to be maintained in order to avoid interruptions mentioned above. This incurs a cost of capital. The effort to reduce the cost of capital reduces liquidity, and it interrupts business operations and, thereby, profitability. Accordingly, efficient working capital can be recognised as the best trade-off between liquidity and profitability. This amount is identified as the optimum amount of working capital. The optimal level of working capital is the amount of working capital required to maintain a balance between risk and efficiency (Filbeck & Krueger, 2005; Zariyawati et al., 2009), where the risk captures the probability of maintaining customer satisfaction and the efficiency captures the cost of capital.

However, Filbeck and Kruger (2005) bring a different argument showing how business improvements such as the six sigma approach can provide maximum satisfaction to customers resulting in less investment of expensive funds as working capital. Accordingly, six sigma, Total Quality Management (TQM), Just-In-Time (JIT) and Lean management approaches attempt to maximise customer satisfaction with the least amount of resource usage. These approaches perceive inventories as a waste. Within such a context, the working capital reduction becomes the focus for increasing profitability. Such a minimum amount of working capital could be the trade-off or optimal amount of working capital.

2.3 Performance of WCM

Cash Conversion Cycle (CCC) better indicates the performance of WCM (Abuzayed, 2012). Gitman (1974) introduced the concept of CCC as an element of WCM. Although accounts receivable, inventories, and accounts payable are the main elements of WCM, cash is the element most vulnerable (Gill & Biger, 2013). Referring to Keynesian postulations, Gill and Biger (2013) identify three purposes of cash to a business firm: transactional, speculative, and precautionary. However, only transactional purpose is connected to normal day-to-day operations, and the other two are specific purposes. On the other hand, for the possible availability of cash from non-operational sources such as amounts available for capital investments, many studies ignore cash balances from WCM.

Some working capital studies investigate the overall CCC performance and profitability (Abuzayed, 2012; Zariyawati et al., 2009). Zariyawati et al. (2009) suggests referring to the theory of risk and return, that shorter CCC for its possibility of higher risk brings higher profitability. Others investigate the relationship between individual elements of CCC with profitability. For instance, Tauringana and Adjapong Afrifa (2013) find that some elements of WCM as to supplier payable and customer receivables are important to the SME sector in the UK while inventories and CCC are not.

Some studies investigate internal and external conditions influencing WCM. Gill and Biger (2013) claim that bad corporate governance results in weaker WCM, leading to bad levels of cash, accounts receivable, inventories, and accounts payable. Economic, environmental conditions such as interest rates, innovations, and competition influence the working capital management performance. For example, when interest rates rise, it can lead to postponing payments for accounts payable as well as collection from accounts receivables (Filbeck & Krueger, 2005).

While CCC indicates the performance of WCM (Abuzayed, 2012), WCM performance is reflected on profitability and other aspects of firm performance, such as the value of the firm. Most researchers have attempted to investigate the performance of WCM using CCC. Accordingly, most studies show how WCM creates implications on profitability or other aspects of firm performance. For example, Abuzayed (2012) argues that efficient WCM creates implications on the firm value, and they study the

effect of WCM on both firms' accounting and market performance in emerging economies. They attempt to link between accounting as well as market performance and management of CCC.

Most studies investigate the relationship between CCC or the elements of CCC and profitability and find a negative relationship. Raheman and Nasar (2007) suggest that managers of firms can increase shareholder wealth by reducing the amount of customer receivables, inventories, and CCC length. To them, less profitable firms take longer to settle accounts payable and therefore have a negative relationship with profitability CCC has a negative relationship with firm profitability. Thus a shorter CCC can help create shareholder wealth (Kaddumi & Ramadan, 2012; Zariyawati et al., 2009). Shin and Soenen (1998), cited in (Deloof, 2003) find a negative relationship between the cash conversion cycle and the corporate profitability from a survey among a larger sample of US firms from 1975 to 1994.

In managing working capital, managers adopt aggressive or conservative working capital management policies. The former focuses on keeping a minimum level of working capital while the latter keeps a higher level. Nazir and Afza (2009) investigated any relationship between aggressive/ conservative working capital asset management policies and financing policies and profitability. For this, they used 204 Pakistani companies for the period from 1998 to 2005. They found a negative relationship between profitability and the degree of aggressive working capital management policy. Nazir and Afza (2009) report that Weinraub and Visscher (1998) found from a survey that when companies adopted aggressive working capital asset policies, it is balanced by adopting conservative working capital finance policies.

Empirical findings suggest that tighter management of accounts receivable (i.e., lower customer credit period) and inventories (i.e., lower Inventory period) enhances profitability (Knauer & Wöhrmann, 2013, p. 84). Accordingly, reducing the credit period to customers and reducing the level of inventories increase profitability. Theoretically, Knauer and Wöhrmann (2013) increase in Days of Purchase Outstanding (DPO) decreases the working capital. Accordingly, the increase of DPO negatively impacts the CCC. The lower CCC should increase profitability because of the empirically reported negative relationship. Practically, this suggests that delaying

supplier payments at the cost of discounts will increase the CCC and it will cause an increase in profit. Nazir and Afza (2009) report Joes et al.'s (1996) findings of the positive relationship between Cash Conversion Cycle (CCC) and aggressive working capital management policies and at the same time the negative relationship between CCC and profitability.

In contrast, some studies find a negative relationship between CCC or its components and the firm profitability. Abuzayed (2012) investigated the relationship between working capital, indicated by the CCC, and firm value selecting 52 firms listed in the stock exchange from the year 2000 to 2008 and identified a positive relationship between working capital and profitability. It can be interpreted as increased amounts of inventory and accounts receivables increase profitability. These conflicting conclusions create an issue in theorising WCM through investigating relationships.

2.4 A Critique on Existing Knowledge of WCM

The foregoing literature review reveals an ambiguity in the knowledge of WCM. Some studies define working capital differently from others. The findings on studies focused on WCM have been mainly around understanding the relationship between firm profitability and the CCC and its elements. Some studies find a positive relationship, and some others a negative relationship. Some studies question the validity of this knowledge. For example, Aktas et al.(2015), going against Nazir and Afza (2009)'s claim that aggressive working capital policy has a negative relationship with the profitability of firms, rule out the possibility of increasing profitability by taking higher risk following aggressive working capital policy on the basis of their investigation through a survey among an exhaustive sample of US companies, carried out for 30 years from 1982 to 2011. However, They (Aktas et al., 2015) identify that firms are reducing unnecessary working capital report higher profit performance.

According to their findings, firms optimising working capital either by increasing or decreasing show better firm performance. They finally suggest that organisations should minimise unnecessary amounts of working capital to improve the performance of firms. Knauer and Wöhrmann (2013) claim that rather than working capital increases profitability, firms strive to maintain an optimal working capital level to maximise profitability. Despite their critique against the existing knowledge of WCM, Knauer

and Wöhrmann (2013)'s critique is based on the philosophy of managerialism, where managers believe that they have the discretion on the means of best serving organisational purpose.

3. Managerialism in neo-liberalism – the theoretical framework

Apart from conflicting explanations in the literature, this paper problematises the existing knowledge of working capital benefitting from the lenses of 'managerialism'. In general terms, managerialism refers to the application of managerial skills and theory to optimise the performance of organisations (Doran, 2016). Klikauer (2015, p. 2), referring to Locke (2011) explains managerialism 'as an expression of a special group – management – that entrenches itself ruthlessly and systemically in an organisation. Accordingly, managers exploit every possible avenue to optimise the performance of the business firm. It deprives owners of decision-making power and workers of their ability to resist managerialism'. Klikauer (2015) further explains that managerialism pretend to possess advanced knowledge and know-how necessary to the efficient running of organisations not only in the private sector but also in the public sector. According to Klikauer (2015, p. 3);

Managerialism combines management's generic tools and knowledge with ideology to establish itself systemically in organisations, public institutions, and society while depriving business owners (property), workers (organisational-economic) and civil society (social-political) of all decision-making powers

Thus, managers apply all possible techniques to show better performance of the public institutions or private corporations. As per Klikauer (2015, p. 3)

Managerialism justifies the application of its one-dimensional managerial techniques to all areas of work, society, and capitalism on the grounds of superior ideology, expert training, and the exclusiveness of managerial knowledge necessary to run public institutions and society as corporations.

Managerialism believes that managers with their superiority in the knowledge and the positions they hold in firms can bring all necessary conditions under their control. This assumption was valid until the 1980s, when a neo-liberal economic reform started, making market competition more powerful than managerialism.

The core idea and guiding principle of Neo-liberalism is the free market as the mechanism to control the economy. The free market focuses on competition among the organisations (Bal & Dóci, 2018). Principles of Neo-liberalism, as outlined by Von Hayek in his *Road to Serfdom* (1944) cited in (Klikauer, 2015, p. 5), indicate how the neo-liberal market becomes powerful and competitive: (1) deregulation of markets, (2) creating new markets, (3) deregulation of labour and industrial relations, (4) reduction and destruction of social welfare, (5) privatisation of everything, (6) reduction of state regulation, and (7) anti-unionism. In the Sri Lankan economy with open economic policy introduced in 1979 demonstrates the conditions stipulated in principles of neo-liberal economic reforms. Hence, in the Sri Lankan context, due to fact that organisations' freedom is constrained by the free market, managerialism can operate within a limited space. Neo-liberalism and managerialism are not conflicting ideologies. Neo-liberalism's free market ideology from capitalist ideological perspective, strengthen individual wealth maximisation. In that line of thinking, neo-liberalism and managerialism coexist. In that perspective, managerialism transforms neo-liberal capitalism into managerial capitalism (Klikauer, 2015).

The neo-liberalism is a political-economic ideology towards the advancement of human wellbeing (Bal & Dóci, 2018) and the free market component of neo-liberalism constraints the possible exploitation by managerialism. Accordingly, the free market does not provide freedom to managers of organisations to exploit the conditions at their discretion. In that perspective, neo-liberalism is merely an obstruction for managerialism (Klikauer, 2015). In simple terms, managers' decisions are subject to market responses. For example, managers of an organisation operating in the competitive market will have to consider the threat from its competitors in offering credit a period to its customers rather than merely the internal organisational conditions. "Across the world, neoliberalism is widely perceived as the natural state of affairs" (Bal & Dóci, 2018, p. 3). Hence, business firms in the contemporary economic context cannot ignore the competitive implications. Thus, we can conclude that from the capitalist ideology of wealth maximisation, managerialism coexists with neo-liberalism, but from the free market emphasis of the neo-liberalism, managerialism is restricted.

Now we can construct a framework as lenses to be used for the analysis of WCM knowledge. Accordingly, in any decision where managers have independence from the market, for example, inventory management decision, although considered market demand, is an internal decision independent from competitor behaviour or responses. Hence, in determining inventory levels, managers have the discretion to adopt policies such as Just-In-Time (JIT), service level or conventional inventory management, and there, the underpinnings of managerialism will be active. In other words, managers' discretion on ways and means towards optimising business performance could be carried out. However, if any decision is connected with the market, for example, customer credits, market influences rather than managers' discretion will drive managerial decisions.

4. Analysis of current WCM knowledge

This paper analyses the current WCM knowledge available in selected research papers from the lenses of managerialism in neo-liberalism, emphasising the free-market implications. Accordingly, this paper is revisiting their findings from managerialism from a neo-liberalism perspective.

A common finding in many WCM research papers is that managers can change profitability or firm value by changing working capital. As Gitman (1974) identified, Cash Conversion Cycle (CCC) is used to measure the overall working capital condition. Furthering on this, the majority of studies conclude that CCC has a negative relationship with profitability while other studies show a positive relationship. If it is a negative relationship, the maximisation of profitability requires a longer supplier credit period, shorter inventory period, and a shorter customer credit period. If it is taken as a positive relationship, to have a higher CCC, a firm needs to have a shorter credit period from suppliers and longer inventory period and a longer customer credit period. Some authors refer to the rule that 'the higher the risk, the higher the returns' and conclude that shorter CCC can lead to higher profitability (For instance, Nazir & Afza, 2009). Against this conclusion, some authors question how the longer credit period from suppliers resulting in a shorter CCC supports profitability when the credit period is extended forgoing possible supplier discounts (Knauer & Wöhrmann, 2013). Behind these findings on how different levels of working capital or CCC or its components lead

to profitability, managers' discretion as to how to manage the working capital for increased profitability is implied.

These explanations assume that the firm can decide the length of CCC and its elements, looking at the potential profitability. They disregard the possible influence of the market competition on the customer credits and the possible influence of factor market conditions or other conditions such as supplier relations on supplier credits. Thus, the existing explanations on WCM mainly assume the possibility of managerial discretion disregarding the influence of market competition illuminating the underpinnings by the ideology of managerialism.

Nevertheless, some authors indicate that managers are not independent enough to determine working capital conditions but may be subject to influences of internal and environmental conditions. Deloof (2003) explain that when interest rates are lower, firms tend to offer more credits to customers as an investment. This finding could be interpreted as when interest rates are higher, the managers will curtail customer credits implying the underlying managerial discretion.

Deloof (2003) also conclude how a profitability level influences WCM decisions. According to Deloof (2003), when the firm's profitability is declining, customers may require more time to assess the quality of the products. (This implies the assumption that customers are knowledgeable of the profitability of the firm.) Thus, a negative relationship between profitability and inventory is justified for less profitable firms when their market is not growing. The same study explains the negative relationship between accounts payable and profitability as the firm takes more time to settle liabilities when it is declining in profitability. This explanation illuminates the managerial discretion on the length of customer credit period and supplier credit period based on profitability level.

According to Kieschnick et al. (2013), a firm's future higher sales expectations, its debt difficulties, and bankruptcy risk significantly influence the value invested in net operating working capital; and accordingly, investment in net operating working capital is greater when expected future sales growth potential is higher. This view also carries

the managerial discretion in WCM decisions based on their expectations of future market potential.

Thus, most explanations are based on managerial discretion demonstrating managerialism, and their applicability is questionable for firms operating within the competition created by the free market condition of neo-liberalism.

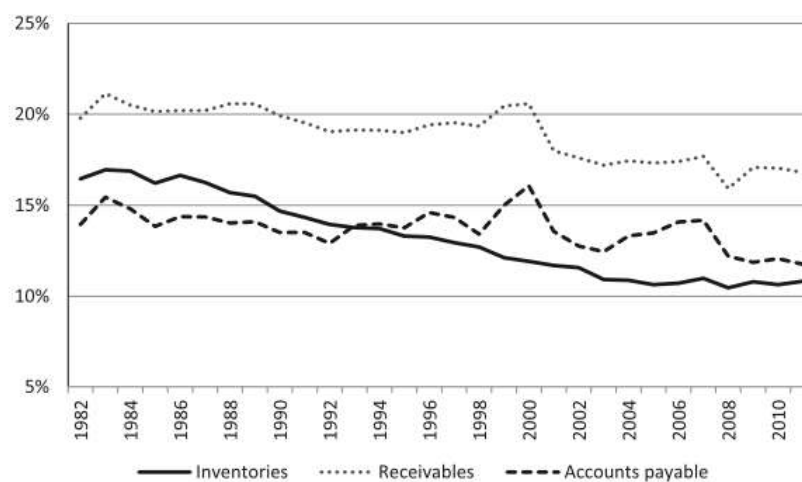
4.1 Bargaining Power in the Market and WCM

A further review of some empirical findings suggests that when a firm operates within a free market, its managers' discretion may be limited to the extent to which it has bargaining power in the market.

Aktas et al. (2015) interpret the results of their survey conducted among 52 US non-financial firms over 30 years to investigate the extent to which the additional amount of working capital contributes to increased firm value and do firms cut down working capital for investing in acquisitions. Figure 1 shows some of their empirical findings.

Figure 1

Change of CCC elements over a period of 30 years



Source: Aktas et al. (2015, p. 102)

Aktas et al. (2015, p. 111) conclude:

We document the existence of an optimal level of working capital investment. Firms that converge to that optimal level, either by increasing or decreasing their

investment in working capital, improve their stock and operating performance over the subsequent period.

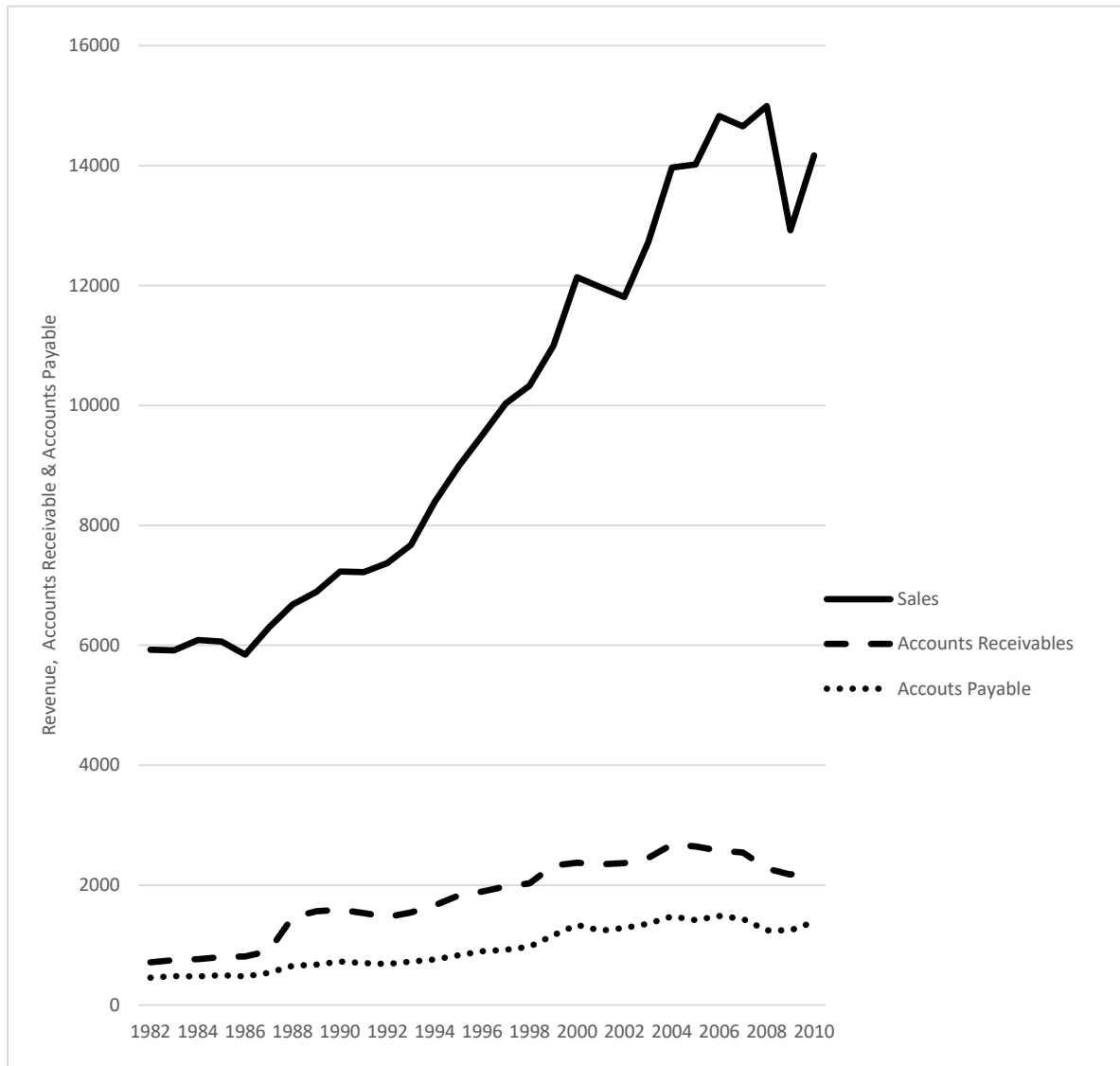
Here, Aktas et al. (2015) attempt to illuminate how the companies have increased and decreased working capital to the prevailing situation to maintain an optimum level of working capital. However, when we look at the trend of sales (extracted from their original data set on page 101) as shown in Figure 2, we can draw a different conclusion. For this, we need to see accounts receivables and accounts payable. As per the trend lines in Figure 2, parallel changes are observable in accounts receivable and accounts payable trends. However, we can see accounts receivable and accounts payable are under the control of the sales trend. After 2008, sales revenue starts coming down. Corresponding to this, we can see in Figure 2 that accounts receivable go up. Necessarily this is followed by increased accounts payable resulting from more purchases. This indicates the dependency of working capital on sales. A similar observation is possible at several points in the graph. However, this emphasis has not been captured in the past WCM studies. We also observe the decline of inventory management as under the control of management where attention is to maintain only the optimal level of inventories, which the lean studies identify as a waste.

In a favourable market condition, the firm has bargaining power, and therefore the accounts receivable may be reduced or not extended. However, in a situation where market decline occurs, business firms attempt to offer extended credit periods. Hence, we can interpret the change of accounts receivable and accounts payable are caused by the change in the bargaining power of the firm resulting from the change in sales in the competitive market.

Figure 2 shows that broadly accounts receivable and accounts payable take the same trend as sales. However, a closed look at the change of the trends shows us that accounts receivable and payables are not changing at the same rate as sales change. Perhaps this may be influenced by changes in selling prices. However, by 1986 the sales value comes down, and in 1987 the customer receivables start going up.

Figure 2

The trend of sales accounts receivable, and accounts payable over 30 years



Source: Aktas et al. (2015), pp. 102–103.

This is followed by an increase in sales income. In 1990 while sales revenue was going up, the customer receivables started coming down. Again by 1990, sales income starts coming down. Responding to this, the firm might have increased credit sales, and as a result, the accounts receivable started going up in 1993. Similarly, we can see when sales drop from 2000 to 2003, the firm increases credit sales and as a result, accounts receivable starts going up. This tells us that when the sales in the market go up, firms may have higher bargaining power and therefore reduce credit sales to optimise working capital.

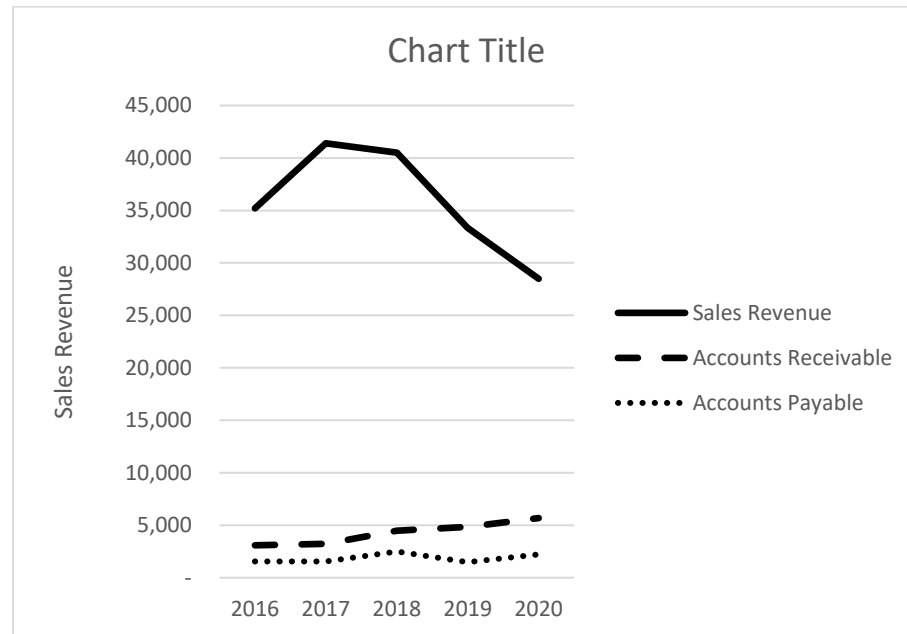
On the other hand, when the market conditions are unfavourable, as indicated by dropped sales, the firm increases credit sales with a consequential increase in accounts receivable. Accounts payable follow the sales trend indicating the increase of purchases responding to increased sales. This implies that suppliers may extend more relaxed credit terms when a firm builds up its bargaining power in the market through increased sales. This can result in shortening the length of CCC. Figure one shows that the inventory value is continually coming down. It can result from the contemporary business policy of moving towards lean approaches, where inventory is recognised as waste. Hence, inventory value and the sales value do not show any relationship. This tells us that credit sale is a strategy of responding to the market conditions rather than an independent managerial decision. It suggests that CCC is influenced by the bargaining power in the market rather than completely a discretion of the management purely responding to prevailing conditions.

A practical example

The same observation is found in a practical example. We consider sales, customer receivables, customer payables, and customer credit period based on its published financial statements Diesel and Motor Engineering PLC (DIMO PLC), a well-established automobile trading company in Sri Lanka. This company is facing tough competition in the automobile market.

Figure 3

Sales accounts receivables, and accounts payable of DIMO PLC.



Source: DIMO PLC (2016, 2017, 2018, 2019, 2020)

Data for Figure 3 are shown in Table 1

Table 1

Sales, accounts receivable and accounts payable of DIMO PLC.

(Rs. 000)

	2016	2017	2018	2019	2020
Sales Revenue	35,194	41,398	40,508	33,337	28,489
Accounts Receivable	3,092	3,244	4,466	4,833	5,685
Accounts Payable	1,566	1,563	2,496	1,482	2,213

Source: DIMO PLC (2016, 2017, 2018, 2019, 2020)

According to Figure 3, the DIMO PLC did not increase credit sales from 2016 to 2017, when it had a rapid increase in sales income. However, when sales revenue starts declining, a slight increase in accounts receivable starts indicating favourable consideration on credit sales. However, when sales revenue starts a drastic decline in the market from 2017, the customer receivables start a significant increase indicating a further favourable consideration on credit sales. Table 2 further explains this through the customer credit period during this period. The changing customer credit period

clearly indicates the change of responses to the change in the company's bargaining power in the market.

Table 2

Customer credit period offered by DIMO PLC

	2016	2017	2018	2019	2020
Customer Credit Period (Days)	31	28	35	51	67

Source: DIMO PLC (2016, 2017, 2018, 2019, 2020)

Table 2 clearly indicates how the company has responded to increasing sales with decreasing customer credit period from 2016 to 2017 and rapidly increasing credit period to the drastically declining sales from 2017 to 2020. This shows how a firm reduces customer credit and credit period when it has strong bargaining power in the market and increases credit sales and customer credit period when it loses its bargaining power in the market.

5. Conclusion

Working capital is not firmly defined in the literature. When some definitions take it as the balance between current assets and current liabilities, some other studies take total current assets value as the gross working capital and the net amount of current assets over current liabilities as the networking capital. Furthermore, some studies identify the net current assets as gross working capital and the value of the net amount of the sum of inventory and accounts receivable net of accounts payable as the networking capital. While some studies advocate the importance of cash balance as an element of working capital, the majority of studies consider only inventory value, accounts receivable, and accounts payable as working capital. Such variations in the understanding may interrupt the further development of the phenomenon of working capital, which is an important element for the better performance of any organisation.

Analysing the requirement of long-term funds to be invested in current assets due to the inadequacy of collections from the business to settle current liabilities, this paper defined it as the long-term funds to be invested in current assets. Opportunity cost and cost of capital of long-term funds, when invested in current assets, are adequately discussed in the literature. Hence, from a financing perspective, always maintaining

the optimal amount of working capital is required to minimise the diversion of long-term funds to current assets and to avoid the risk of interruptions caused by a short of working capital. Some authors include cash balances as an important element for the consideration of working capital. Most studies drop it because cash balance can be a result of many other decisions other than operational decisions. Hence, as an important element for operational performance, we can conclude that working capital includes only the inventory value, accounts receivable and accounts payable, concurring with many studies in the literature.

Literature generally identifies WCM as a key area to be managed for better performance of a business firm. After Gitman's (1974) identification of CCC as the measure of working capital, many studies started investigating CCC and firm profitability. Some other studies started investigating how the three elements of the CCC correlate with profitability. Such studies concluded showing how different elements of CCC influences the profitability of a firm. For example, higher inventory and a higher level of trade credits can increase the sales potential of a firm because credit sales stimulate customers for purchases as they can pay later after being satisfied with quality; and the larger inventory assures that no possibility of stockouts (Deloof, 2003). However, conclusions on the relationship between the CCC and profitability are conflicting, leading to inconclusive knowledge of the performance of WCM.

This paper finds that most past WCM studies provide explanations limiting their investigations only to the relationship mainly between CCC and profitability. As a result, responding to different situations, different results have been obtained, leading to conflicting explanations. Concurring with Pratap Singh and Kumar (2014), it is observable that past studies attempt to test hypotheses on the relationship between working capital management and firm conditions, particularly profitability or firm value. Furthermore, Pratap Singh and Kumar (2014, p. 188) in their conclusion to the literature review, bring a useful observation for researching on WCM:

Literature on WCM has concluded that profitability of firm can increase by reducing the amount invested in working capital. Researchers were reluctant in adopting methods like case study and primary survey to study the WCM practices of firms.

Trochim (2000) states that there are three conditions to be met in establishing a causal relationship between two variables: (i) a correlation between the two variables as cause and effect, (ii) possibility of ruling out the alternative explanations, and (iii) temporal precedence of the cause (that the cause must have occurred before the effect and that there are no possible alternative explanations for the observed behaviour). This challenges regression results that are presented in most studies (Knauer & Wöhrmann, 2013).

This paper benefitting from philosophies of managerialism and neo-liberalism, analysed these past findings. Accordingly, it concludes that these past studies have taken the standing of managerialism, where managers are believed to have the discretion in decisions for optimising business performance. However, today business firms operate in a free market created by neo-liberalised economic policies. As explained before, within such a free market, managerial discretion has limited space. Hence, it was concluded that for managers' decisions connected with the market, for example, customer credit decisions, managers have no discretion but need to be strategic in responding to the market. However, for decisions based on internal policies and conditions, for example, inventory-related decisions, managers cannot neglect the market requirements but have independence from the threat of competition.

Referring to survey data presented by Aktas et al. (2015) and a practical example, this paper found how business firms change customer credit as a strategy to respond to changing bargaining power of a business firm indicated by changing sales in the market. Hence, this paper finally concludes that WCM thinking needs a change to consider that all three elements of WCM are not within the discretion of managers. Therefore, measuring the relationship between CCC and profitability may not produce useful knowledge. Hence, within the current neo-liberal economic context, the bargaining power of a business firm needs to be considered in managing customer credits and supplier credits. Inventory management is available for managers' discretion. The resulting conditions will produce CCC as an indicator of WCM. Concurring with Pratap Singh and Kumar (2014), this paper invites more case-based research in the area of how business firms manage their bargaining power in the market in managing working capital.

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DETERMINANTS OF MOBILE BANKING ADOPTION: THEORY OF PLANNED BEHAVIOUR PERSPECTIVE

Gamini, W. D.

Faculty of Graduate Studies, University of Ruhuna, Matara, Sri Lanka

Galhena, B. L.

Department of Human Resource Management, University of Ruhuna, Matara, Sri Lanka

blgalhena2@gmail.com

Abstract

Information technology has become the most convenient service delivery channel in the financial sector. In the Sri Lankan financial context, most banks and financial institutions invest substantially in Fintech solutions comprising internet banking, Mobile Banking (M-banking), and electronic payment systems. However, the customers' use of M-banking services remains at a lower level compared to some developing and developed countries. Thus, this study explores the significant factors influencing the intention towards using M-banking among Sri Lankan customers in a selected leading finance company in Sri Lanka. The research model was developed based on Theory of Planned Behaviour (TPB). Six independent variables comprising the ease of use, perceived usefulness, perceived risk, subjective norms, compatibility, and perceived behavioural controls were included in the research model. The intention towards using M banking was considered a dependent variable. Data were collected online from a sample of 250 customers from the Southern region and 213 valid responses were received. Multiple regression analysis was used to test the hypotheses. Findings revealed that five out of six hypotheses were supported. Five factors, namely perceived ease of use, perceived usefulness, compatibility, perceived risk, and perceived behavioural control, were found as significant drivers of intention towards using M-banking adoption. This study contributes by providing evidence with a developing context, and research findings contributed to the existing literature by providing insights on the determinants of intention towards using M-banking. Further, this research provided extended knowledge in the domain of technology acceptance literature for a developing country like Sri Lanka.

Keywords. Theory of planned behaviour, Intention to use M-banking, Sri Lanka

1. Introduction

Digital business transformation plays a vital role in the present business context throughout the world (Sayabek & Suieubayeva, 2020). Many businesses are adopting technology with the aim of increasing revenue, cost reduction, and improving customer service (Attaran, 2020). Digital transformation is widely spread to all industries, including financial sector, as revealed by Digital Business Survey in 2018 (IDG International Publishing Services, 2018). The financial sector performed well through technology by providing a variety of financial solutions comprising electronic payment solutions (Oyelami et al., 2020), internet banking (Kumar et al., 2020), mobile wallets (Mombeuil, 2020), online trading to customers (Rajan & Davidson, 2020). Mobile banking, among them, enables customers to perform banking transactions through electronic applications rather visiting branches (Jebarajakirthy & Shankar, 2021).

In Sri Lanka, there are 26 specialised commercial banks, 6 specialised banks and 42 licensed finance companies (Central Bank of Sri Lanka, 2020). In order to provide customers with financial services effectively, almost all the banks have already implemented mobile banking solutions as a differentiation strategy (Ravichandran & Harshani, 2016). As of now, banking firms are looking into providing convenient platforms beyond online banking systems due to certain limitations associated with online banking systems (Premarathne & Gunatilake, 2016). Online banking systems are limited to bank secured websites, and there are limited functions compared to mobile banking (Premarathne & Gunatilake, 2016). Though the awareness on mobile banking among customers has been increased, some customers do not use mobile banking as banking firms expected (Raza, 2011).

Around 5.1 billion people, representing 7% of the global population around the globe, has subscribed to mobile phone services at the end of 2018 (Jan Stryjak, 2019). Further, one billion new entrances have been subscribed during the most recent four years, which represent a yearly growth pace of 5 % (Stryjak, 2019). Parallel to increasing smartphone adoption globally, mobile banking applications are also expected to increase (Lund, 2020). However, certain studies discovered that though mobile banking

application is well known in certain countries around the world, they were not utilised generally as expected (Lund, 2020).

Several studies have been performed in developed countries to examine the determinants of mobile banking usage (Boonsiritomachai, & Pitchayadejanant, 2017; Changchit et al., 2018; Senali, 2017; Khadka, 2018). As far as the extant literature on determinants of mobile banking adoption is concerned, it is obvious that the findings are inconsistent where further studies on this are warranted (Krishanan et al., 2017).

During the last couple of years there has been a significant emphasis placed on mobile banking activities by majority of banks in Sri Lanka (Central Bank of Sri Lanka [CBSL], 2019). Therefore, consumer adoption and usage may be drastically altered, and it has not been adequately tested in the Sri Lanka context in recent studies. Further, the level of mobile banking usage in Sri Lanka remains at a low level compared to developed countries and the developing countries in the region (Arandara, & Gunasekera, 2020). Moreover, Premarathne and Gunathilake (2016) contend that mobile banking adoption levels in Sri Lanka are relatively low despite the high adoption level of general technological advancements such as mobile usage and internet usage.

Determinants of user acceptance of mobile banking have been identified using different models (Boonsiritomachai, & Pitchayadejanant, 2017; Dwivedi, & Mir, 2019; Suhartanto et al., 2019). However, in Sri Lanka context, there is an only hand full of empirical studies on user acceptance of mobile banking has been performed. Moreover, the findings of developed countries cannot be generalised to a developing country like Sri Lanka, as there are notable differences between education level (Sharma et al., 2017), cultural beliefs and values (Cirera, & Maloney, 2017) and economic and technological situations (Bell & Pavitt, 1993) compared to the developed world. Therefore, it is necessary to identify the factors influencing mobile banking acceptance in the Sri Lankan context. Thus, the purpose of this study is to identify the significant factors that influenced on M-banking adoption of customers in the Sri Lankan context limiting to the ABC Company PLC.

1.1 Research Problem

In Sri Lanka, the mobile telecommunication sector has achieved significant growth compared to other sectors in the last two decades (Jayasuriya & John, 2000). According to the following social indicators (Table 1) published by CBSL (Central Bank of Sri Lanka, 2018), it reveals that mobile phone connections dominate in the telecommunication sector, representing 1436 mobile phones per 1000 people. According to this report, Sri Lanka stands in second place in South Asia.

Table 1

Social Indicators of SAARC Countries

Indicator	Ref. year	Sri Lanka	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan
Internet subscription- (Per 100 people)	2013	27.5	11	18.0	42.0	30	59	20	16
Telephones- (Per 1000 people- Main line)	2016	12	3	5	27	19	58	30	16
Telephones- (Per 1000 people - Mobile)	2016	1436	660	779	888	870	2230	1117	714

Source: Socio economic data 2018 - Central Bank of Sri Lanka

At present, the number of mobile phones as well as mobile accounts is higher than the population in Sri Lanka due to the rapid development in wireless technology during the recent two decades (Perera & Wattegama, 2019). Further, the mobile service providers come up with innovative and various kinds of services to expand their network to fill the gaps which they identified in the industry (Perera & Wattegama, 2019). Moreover, mobile phones have formed a wide array of new business opportunities such as mobile banking and has become a platform to extend business transactions through the

extension of remote correspondence in an extremely simple way (Perera & Wattegama, 2019). However, it is surprising that though mobile phone users and internet connectivity in the Sri Lankan context have grown significantly over the years, M-banking usage does not increase in parallel.

ABC Finance PLC is one of the major financial solution providers in Sri Lanka, and the company offers various financial solutions with variety of innovations. The company invests a significant amount in mobile banking with the aim of ensuring better customer service and profitability. Table 2 below shows the relationship between numbers of savings accounts as opposed to a number of registered customers for mobile banking related to ABC Finance PLC. As illustrated in Table 2, 467,470 saving accounts belong to ABC Finance PLC as at 31st of March 2019. However, only 14,904 account holders, which was only 3.2% of the total account base, were registered for Mobile Banking.

Table 2

Mobile Banking registered customers

Factors	As at 31st March 2019
Number of savings accounts	467,740
Number of registered customers for mobile banking	14,904
Mobile banking customer base	3.2 %

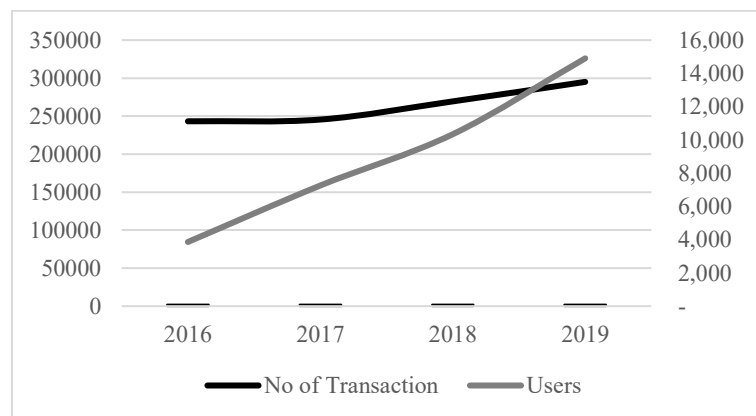
Source: Internal management information from ABC Finance Company (2019)

As illustrated in Table 3 and Figure 1, user registration for M-Banking and transaction count have increased, but it was not at the expected level as explained by the management. It was revealed that the number of mobile banking transactions is insignificant as opposed to the number of total transactions. It is surprising that why the number of mobile users' registration and transactions remains at such a low level though mobile phone users and internet connectivity in the Sri Lankan context has been grown significantly over the years.

Table 3*Number of transaction and M-banking users*

Year	No of Transaction	Users Registered
2016	243,216	3,860
2017	245,496	7,256
2018	269,400	10,340
2019	295,044	14,904

Source: Internal management information from ABC Finance Company (2019)

Figure 1*Transaction growth and user registration*

Source: Internal management information from ABC Finance Company (2019)

Thus, considering this scenario, this study is expecting to investigate what would be the reasons for this gap and consequently to identify the implications. Thus, the research question addressed in this study is what factors are influencing on the intention to use the m-banking with special reference to the ABC Company PLC.

2. Related Literature

2.1 Mobile Banking

Mobile banking is the most convenient banking platform in the modern era. Various authors give many definitions in different perspectives, and Table 4 elaborates them in chronological order.

Table 4*Definitions for M- banking*

Author	Definition
Ravichandran and Harshani (2016)	A channel whereby the customer interacts with a bank via mobile device, such as mobile phone and Personal Digital Assistant (PDA)
Shankar (2016)	M-banking is a kind of m-commerce in which bank customers interact with bank through mobile and enjoying all facilities and services provided by banks via mobile applications.
Sakala and Phiri (2019)	An application that has resulted from the widespread use of computer technologies that are shaping all aspects of everyday life.

Many authors contend that M-banking operates in a digital platform to deliver user convenient banking experiences. M banking is facilitated through SMS, IVR, WAP,tc (Shankar, 2016). Mobile banking is financial innovation which is facilitated to carry out financial services through information technology. M-banking can be classified into two boarder models which are bank-led model and mobile service provider-led model. The bank-led model facilitates banking customers to carry out their banking activities through M- bank solutions, while the mobile service provider-led model facilitates activities through mobile service provider (Ex: mCash e-wallet, Virtual wallets) (Bhatt & Bhatt, 2015). Reviewing extant literature, it can be concluded that there is no universally accepted definition for mobile banking. According to literature on M banking, this study defines M Banking as a digital platform designed to perform banking activities in a convenient way rather than walking into the bank.

2.2 Evolution of Mobile Banking

Mobile banking was first introduced in the late 90s-early/ 2000s by providing SMS banking services. When the internet and smartphones began to gain popularity, few banks introduced simple banking services on their websites like viewing accounts, checking balances, and Automated Teller Machines (ATM) (Cleveland, 2016). At the initial stage of mobile banking, it was limited to personal computers with less thoughts of delivering the service through laptops, notebooks, smartphones, wristwatch, or any convenient technology prevalent today. The usage of mobile banking rapidly increased with the technology of smartphones almost a decade ago; it was easy to make customer convenience in M-banking with the possibilities of emergent technology developments in last decade. Throughout the years, customers moved to smartphones with adopting

new features that simplifying users' lives and demanding convenience banking services (Cleveland, 2016).

2.3 Determinants of Mobile Banking Adoption

An extensive literature review was carried covering both global and local (Sri Lankan) contextual studies to identify the determinants of Mobile Banking Adoption. It was evident that the literature review on the determinants of Mobile Banking Adoption is being discussed and looked at over the span of decades until recent years. After reviewing the previous literature, it was evident that the findings of the research studies had similarities and inconsistencies.

2.4 Theories of Technology Adoption

In order to ascertain the most appropriate theory to build a research model and formulate the hypothesis, this study has reviewed the extant literature on the intention to use mobile banking. As mobile banking is treated as technical innovation, both IT adoption/acceptance and technological innovation adoption/diffusion literature was reviewed. Technology acceptance theories are commonly used in many studies that investigate determinants of the intention to use/adapt/accept mobile banking. Many models have been proposed in explaining and predicting users' acceptance of new technology. The Technology Acceptance Model (TAM) (Davis et al.,1989; Davis, 1989), The Unified Theory of Acceptance and Use (UTAUT) (Venkatesh et al.,2003) have gained a great deal of attention for predicting users' adoption of new technology.

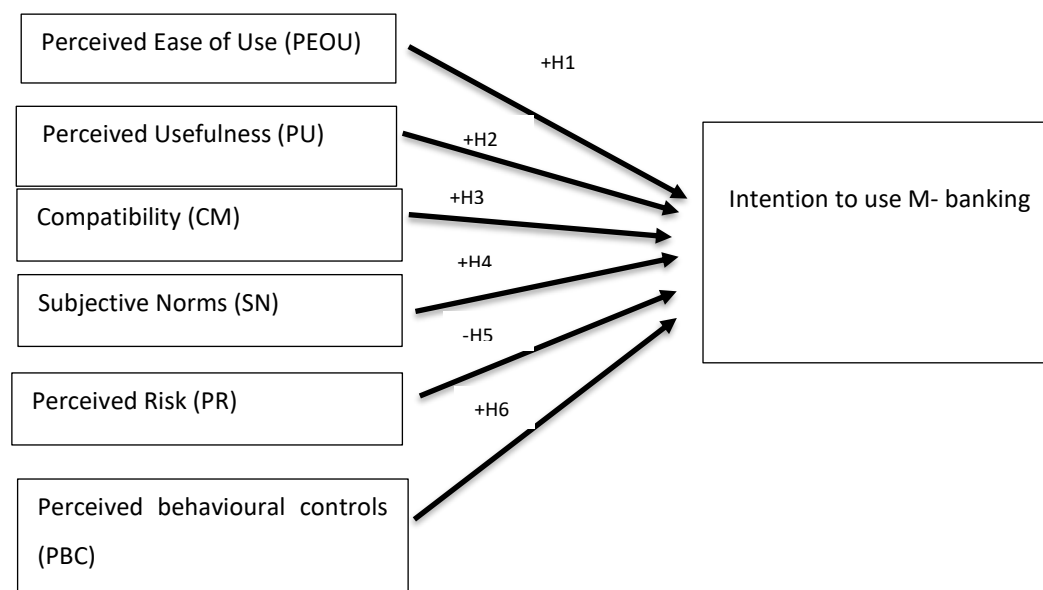
As M-banking also consider as technology related product theses technology adoption theories can be applied to explain M -banking adoption behaviour too. However, these theories have different explanations power in explaining the technological adoption intention. The present study applied the theory of planned behaviour to explain M-banking adoption intention as the model comprises relevant factors. This theory has been used in many studies and confirms its applicability to the M-banking context.

2.5 Conceptual Model

The present study developed following research model based on the theory of planned behaviour. The theory of planned behaviour was used to develop the research model and compatibility and perceived risk have been added to the research model to analyse M-banking adoption related to ABC Finance PLC.

Figure 2

Research model



2.6 Hypotheses

Perceived ease of use

Perceived Ease of Use (PEOU) refers to the degree to which a person believes that using a particular system would be free from physical and mental effort (Davis, 1989). Prior to making an innovation adoption decision, potential adopters strive to make a trade-off between the benefits of the innovation and the complexities of using it (Premkumar & Potter, 1995). Due to the complexity of technology, greater uncertainty is created among potential adopters, particularly in making innovation adoption decisions (Lin, 2011). Since M-banking applications are combined with IT, there is a possibility of higher levels of uncertainty and complexity among potential adopters.

It is necessary to possess adequate knowledge and skills to use or operate IT-related innovations. Such innovations require advanced knowledge and experience of IT to operate (Dunivan, 1991), in order to work effectively with M-banking, individuals are required to deal with certain IT-related operations. To deal with these tasks, individuals need to be equipped with basic to advanced levels of knowledge and competencies of IT. When potential adopters believe that it is rather a cumbersome effort to learn, use, and operate M-banking applications, this can generate negative attitudes and ultimately result in discouragement of using it (Normalini et al., 2012; Raza et al., 2017). On the other hand, when employees perceive that it is easy to understand, learn, and use, they form a positive attitude. This leads to postulate the following hypothesis.

H₁: Perceived Ease of Use (PEOU) has a positive effect on intention to use M -banking

Perceived Usefulness

Perceived Usefulness (PU) refers to the degree to which a person believes that using a particular system could enhance his or her job performance (Davis, 1989). Individuals intend to adopt innovations to overcome performance gaps and deficiencies or exploit new opportunities (Premkumar & Potter, 1995). As M-banking is considered an innovation, M-banking should be able to address the performance-related issues experienced by customers when dealing with a manual mechanism. Since M-banking applications are related to IT, most of the positive and negative outcomes are associated with IT adoption applicable to M-banking (Mutahar et al., 2018).

M-banking enables customers to enhance the effectiveness and efficiency of accomplishing banking transactions by reducing paperwork and simplifying the processes. Moreover, M-banking adoption helps to reduce environmental, social, and economic waste. Environmental waste can be reduced through the minimised use of papers, files, and staples; meanwhile, social waste is reduced by minimising the processing time involved in searching for documents and making decisions (Yusoff et al., 2015). On the other hand, negative consequences such as invading personal privacy (Wen, 2013); distancing the function from each other (Francis et al., 2014) might generate. Based on this reasoning, hypothesis 2 is proposed.

H₂: Perceived Usefulness (PU) has a positive effect on intention to use M Banking.

Compatibility

Compatibility is an important aspect of innovation that refers to the extent to which a new service is consistent with users' existing values, beliefs, previous experiences, habits (Chen, 2008). This explains that when individuals believe that the innovation (M-banking) is incompatible with individual values and norms, they will not use it. M-banking is related with technological applications. However, individuals who do not consistently value technological applications may deny using M-banking (Sitorus et al., 2019). On the other hand, those who value such technological innovation may tend to use M-banking. This difference among individuals leads to the following hypothesis.

H₃: Compatibility (CM) has a positive effect on intention to use M-banking.

Subjective Norms

Subjective norm is defined as “the degree to which an individual perceives that important others believe he/she should use the new system” (Venkatesh et al., 2003). Once an important person in the network of the individual influences to use M-banking, it is more likely for them to adopt. Conversely, such key person who will influence individual decision do not encourage to adopt, they intend not to use M-banking.

Subjective norm is an important factor that affects intention to use M-banking and it was found that Subjective norm has a positive effect on intention to use M-banking (Abu Shanab, & Pearson, 2007; Martins et al., 2014). Thus, this study hypothesised the following.

H₄: Subjective Norms (SN) have a positive effect on intention to use M Banking.

Perceived Risk

Perceived risk refers to the degree to which individuals believe that there is a chance of making some errors. When it comes to M-banking contexts, several risk elements such as time, social, and financial risk are associated. Time risk denotes the loss of time due to difficulties navigating the mobile banking activities and any embarrassment incurred due to the delays in sending or receiving money through mobile banking (Lee et al., 2005). Social risk means the possibility of not using mobile banking services because of dissatisfaction or negative view from family, friends, or any other groups, including

even the media (Chavali, & Kumar, 2018; Lee, 2009). Financial risk could be identified as the possibility of losing money due to a transaction error or misuse of the bank account by somebody else. Performance risk has been identified as the losses which customers may incur due to malfunctions or deficiencies of mobile banking (Han, & Kim, 2008; Lee, 2009). Security risk has been defined as “potential loss due to fraud or a hacker which compromising the security of a mobile banking user” (Lee, 2009). When customers perceive that there is a high risk of using M-banking they are not willing to use it vice versa (Shuhidan et al., 2017). Based on the above facts, the following hypothesis was formulated for the present study.

H₅: Perceived Risk (PR) has a negative effect on intention to use M-Banking of ABC Finance PLC.

Perceived Behavioural Controls

Perceived behavioural controls refer to how individuals believe that they possess the required resources to use the innovation (Ajzen, 1991). This means that when individuals perceive that there are no constraints for them to behave (use M-banking), they are more likely to use it. Customers require several resources such as network and hardware resources and ICT skills to effectively use the M-banking services when it comes to the M-banking context. Previous studies have found empirical support to the relationship between the perceive behavioural controls and intention to use technological innovations (Bhatt, & Bhatt, 2015; Danyali, 2018). Thus, the following hypothesis was formulated.

H₆: Perceived Behavioural Controls (PBC) have a positive effect on Intention to use M-Banking.

3. Methods

The aim of this study is to identify the significant factors explaining the intention to use M-banking. The current study can be categorised under descriptive research as the objective is to describe the antecedents of the intention to use M-banking (Zikmund et al., 2010). The research question of the present study is to identify the key factors determining the intention to use M- banking among customers in the Southern province.

Thereby, the respondents in the survey research would ideally be customers in Southern province. Thus, the unit of analysis for the present study is the 'individual'.

Most of the previous studies on antecedents of the intention to use M-banking have been conducted in the context of developed economies. Compared to a developed economy context, relatively few studies were undertaken by countries in a developing and emerging economy context as they are lagging far behind in technology (M-banking) adoption. Further, it is challenging to generalise findings of the studies in the developed context to the developing and emerging context as these contexts vary in terms of the technological infrastructures, national and organisational culture, individual ICT awareness and expertise etc. Thus, with the purpose of filling this gap in the extant literature the present study is selected Sri Lanka as a research context. Present study chose the ABC Finance PLC as the research context. ABC Finance PLC is one of the major financial solution providers in Sri Lanka, and the company offers various financial solutions with variety of innovations. The company invests a significant amount of money in M-banking to ensure better customer service and profitability. However, they reveal that only 3.2% of the total account base has registered for mobile banking. From the organisational point of view, this low adoption rate creates several problems.

The theoretical population of this study is customers of ABC Company PLC residing in all provinces in Sri Lanka. Due to the complexity of exploring the theoretical population, the present study chooses the customers of ABC Finance limited to the Southern province as the study population. The theoretical constructs were measured using validated items from prior relevant research. The adapted items were validated, and wording changes were made to tailor the instrument for the purposes of this research. Operationalisation of variables is shown in the Table 6. Further, the questionnaires were prepared using both English and Sinhala languages. The back translation of the questionnaire of the present study was done by a professional translator. The questionnaire was designed in a manner where the first section dealt with the demographic variables and general questions, section two comprised of all the questions associated with independent variables and finally the third section of the

questionnaire included questions raised on the dependent variable of intention to use M- banking.

Primary data was collected through a self-administrative questionnaire which has been designed to complete respective questions without intervention of the researcher. Initially, the author planned to collect data through few channels due to limitation of reaching each individual physically. However, we used an online channel due to COVID 19 pandemic, and all data was collected online. We used an internet-based questionnaire and the link was delivered through e-mails, social media, chat groups. Reminders were sent to respondents who were not responding to the questionnaire to maintain acceptable level of response rate to ensure the quality of the study. 300 questioners were distributed among customers in Galle, Matara and Hambantota districts. The response rate was 92% of the original sample. However, 17 responses were disqualified due to various reasons. Ten questionnaires were incomplete due to some questions were not answered by the respondents. Seven questionnaires were answered abnormally since there were similar answers for all Likert scale questions. After removing disqualified responses, the response rate was 85.2% from the sample.

Table 6

Operationalisation of variables

Variables	Measurements	Reference
Perceived Usefulness (PU)	Using M-banking allows me to accomplish more tasks than would otherwise be possible	Venkatesh (2012)
	M-banking addresses my banking needs and requirements	
	M-banking enables me to accomplish banking tasks efficiently.	
	M-banking saves my time	
	I find M-banking is useful when doing banking transactions	
Perceived Ease of Use (PEOU)	I often become confused when I use M-banking	Venkatesh (2012)
	I make errors frequently when using M-banking	
	It is easy for me to remember how to perform tasks using M-banking	
	Interacting with M-banking requires a lot of my mental efforts	
	I find M-banking is easy to use	

Subjective Norm (SM)	People who influence my behaviour think that I should use M-banking	Venkatesh (2012)
	People who are important to me think that I should use M-banking	
	Using M-banking has a positive influence on my personal image	
	In general, the organisation has supported the use of M Banking	
Perceived Behavioural Controls (PBC)	I have the knowledge necessary to use M-banking	Venkatesh (2012)
	I have control over using M banking	
	I have greater confidence over using M-banking	
Perceived Risk	My personal data is safe with the service provider	Chen (2013)
	My credit card/ account number may not be secure when I process transactions	
	M-banking might be overcharged	
	Using M Banking is risky.	
Compatibility (CM)	M-banking does not require significant changes in existing resources	Venkatesh (2012)
	M-banking is compatible with other technologies I use.	
	I think that using M-banking fits well with the way I do things.	
Intention to Use	I intend to adopt with M-banking in near future	Venkatesh (2012)
	I plan to continue to use mobile banking frequently	
	I will always try to use mobile internet in my daily life.	
	Using the M-banking is not appropriate for a person with my values regarding the role of M-banking technology and application	

Data collected through questionnaire survey feed into the SPSS. Consequently, data were examined for outliers and missing values. Frequency distributions were used to analyse the sample profile of the respondents and the Cronbach alpha test run to confirm the reliability of the constructs. Regression analyses was performed to test the hypothesis as the six hypotheses of the present study aims at explain the variance on the dependent variable (intention to use M- banking) using six independent variables (Hair et al., 2010)

4. Results and Discussion

4.1 Results

Demographic factors were first analysed, and results are illustrated in Table 7. The majority of the respondents were male, with 78.9%, while 21.1% responds were female. Most of the respondents were from the age group of age 31 to 40 years, with 51.6% of the total respondents. It was followed by the 21 to 30 year group which represents 38.5% of the participants. Most of the participants i.e., 37.6% have a Diploma as their education qualification. As indicated in the Table 7, 52.6% of the participants are married.

Table 7

Demographic profile of the respondents

Variable	Frequency	Percent
Gender		
Female	45	21.1
Male	168	78.9
Age category		
21 to 30 years	82	38.5
31 to 40 years	110	51.6
41 to 50 years	21	9.9
Education Level		
G.C.E. (A/L)	51	23.9
Diploma	80	37.6
Degree	65	30.5
Others	17	8.0
Residence		
Galle	58	27.2
Matara	111	52.1
Hambantota	44	20.7
Marital status		
Single	101	47.4
Married	112	52.6

Convergent and discriminant validity of the measures were statistically tested using the factor analysis. The suitability of the data for factor analysis was assessed using three criteria suggested by Hair et al. (2010). First, visual inspection of the correlation matrix

revealed a substantial portion of correlations greater than 0.30. Second, Barlett's Test of Sphericity provided statistically significant results (approx. chi-square 8457, df 267, sig.000), indicating that correlations among the variables were sufficient to proceed with factor analysis. Third, the measure of sampling adequacy measured in terms of Kaiser-Meyer-Olkin (KMO) values was observed for both the overall test and each variable. The KMO value for the overall test was 0.682, which exceeds the threshold value of 0.50 (Hair et al., 2010). Each variable also indicated KMO values greater than 0.5. In conclusion, all three criteria were met.

Once initial assumptions for factor analysis had been confirmed, all variables were factor analysed using principal component analysis. Since the present study used previously validated instruments, barring one variable, a priori criterion in which the researcher specified how many factors to extract (Hair et al., 2010) was used as a criterion to determine the number of factors to be extracted. Varimax rotation was used to obtain the rotated factor matrix. As most of the constructs had a well-established theoretical base, items with a factor loading of +/-0.5 and above were selected as significant loadings (Hair et al., 2010). The final factor structure is shown in Table 8.

Table 8

Factor Analysis

Items	Factors					
	Perceived Usefulness	Perceived Ease of Use	Subjective Norms	Compatibility	Perceived Risk	Perceived Behavioural Controls
PU1	0.651					
PU 2	0.576					
PU 3	0.742					
PU 4	0.622					
PU 5	0.673					
PEOU1		0.741				
PEOU 2		0.736				
PEOU 3		0.721				
PEOU 4		0.623				

PEOU	0.574	
5		
COM1	0.611	
COM 2	0.721	
COM 3	0.584	
PR1	0.578	
PR 2	0.651	
PR 3	0.587	
PR 4	0.574	
SN1	0.841	
SN2	0.662	
SN3	0.713	
SN4	0.632	
PBC1	0.789	
PBC2	0.714	
PBC3	0.652	

In order to establish the reliability of the constructs, the Cronbach Alpha values were tested, and results are shown in Table 9. All the variables met the threshold values of 0.6, confirming the internal consistency of the measures.

Table 9

Reliability Analysis

Variable	Cronbach's Alpha	Number of items tested
Perceived Usefulness	0.809	5
Perceived Ease of Use	0.781	5
Compatibility	0.801	3
Perceived Risk	0.924	4
Subjective Norms	0.916	4
Perceived Behavioural Controls	0.914	3
Intension to Use	0.916	4

Source: Survey Data, 2020

Once reliability of the constructs was established, consequently, correlations among variables were tested using Pearson correlation and results are shown in Table 10. As correlation coefficients among few independent variables were relatively high,

multicollinearity was tested using tolerance and Variance Inflation Factor (VIF) values and results are shown in Table 9. The result shows that multicollinearity does not exist among all independent variables as the tolerance values are more than 0.10 and VIF values are less than 10.

Table 10

Correlations

	PEOU	PU	CM	PR	SN	PBC	I U	Toleranc e	VIF
PEOU	1							0.143	6.52
U									7
PU	0.265*	1						0.187	6.44
	*								2
CM	0.729*	0.049	1					0.186	5.47
	*								1
PR	0.465*	0.064	0.317*	1				0.378	3.45
	*		*						2
SN	0.388*	0.075	0.079	-0.079	1			0.142	7.72
	*								8
PBC	0.393*	0.048	0.266*	-0.114	0.808*	1		0.185	5.45
	*		*		*				7
IU	0.069	0.210*	0.177*	-	0.462*	0.614*	1	0.189	5.42
		*	*	0.356**	*	*			5

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data, 2020

Hypothesis testing

Hypothesis testing is based on regression analysis using SPSS. Table 10 provides the results of hypothesis testing with R², standard coefficient, and significance. The Adjusted R Square value amounts to 0.552 (Table 11). Thus, the regression model explains 55% of the variance in the intention to use M-banking among respondents with the six independent variables specified the research model and ANOVA test confirmed that the regression model is statistically significant ($F = 44.501, p = 0.000$).

Table 11*Regression Results*

Variables	Standardised Coefficients Beta	t	Sig.
Perceived Ease of Use (PEOU)	0.529	5.443	0.000
Perceived Usefulness (PU)	0.281	5.460	0.000
Compatibility (CM)	0.440	5.544	0.000
Perceived Risk (PR)	-0.157	-2.677	0.008
Subjective Norms (SN)	-0.155	-1.720	0.087
Perceived Behavioural Controls (PBC)	0.548	6.400	0.000
Adjusted R Square		0.552	
ANOVA	F = 44.501, p= 0.000		

In sum, this study confirms the results of TPB. Supporting H₁, Perceived Ease of Use had significant effects on intention to use M-banking ($b = 0.529, p = 0.000$). Perceived Usefulness had a significant positive impact on intention to use M-banking, supporting H₂ ($b = 0.281, p = 0.000$). Compatibility had a significant positive impact on intention to use M-banking supporting H₃ ($b = 0.440, p = 0.000$). Perceived risk found to have a significant negative effect on the intention to use M-banking, supporting H₅ ($b = -0.157, p = 0.000$). Perceived Behavioural Controls had a significant positive impact on intention to use M-banking, supporting H₆ ($b = 0.548, p = 0.000$). This study did not find empirical support on the relationship between subjective norms and intention to use M-banking, not supporting H₄.

4.2 Discussion

The results indicated that intention to use M-banking was largely influenced by Perceived Ease of Use, Compatibility, Perceived Behavioural Controls, Perceived Usefulness, and Perceived Risk. Perceived Ease of Use was positively influenced on intention to use M-banking. The relationship between Perceived Ease of Use and intention to use M-banking has been documented and the results confirmed the importance of the link between them. These findings indicate that when customers perceived that use of M-banking is not a cumbersome process and it is easy to understand and operate, they tend to use M-banking. This is consistent with the findings

of Raza et al. (2017). The findings also suggested that Perceived Usefulness has a significant positive effect on the intention to use M-banking. As suggested by previous studies of Mutahar et al. (2018) it has been suggested that once an individual perceives that M-banking offers them ample opportunities to perform their banking related tasks more efficiently and effectively they are more likely to use it.

Moreover, consistent with previous findings of Sitorus et al. (2019), this study found that compatibility significantly affects intention to use M-banking. This finding means that when employees perceive that using M-banking is consistent with their technical and personal values, they are willing to use the m-banking facilities. This study also confirms the importance of Perceived Behavioural Controls in predicting customers' intention to use M-banking and confirm the validity of TPB in the context of M-banking. These findings are consistent with previous studies of Danyali (2018).

This study also found empirical support for the relationship between Perceived Risk and intention to use M-banking. This means that once an individual perceives that using M-banking is risk free, they are willing to use the service. This confirms the similar results of the previous studies (Shuhidan et al., 2017). However, this study did not find a statistically significant relationship between Subjective Norms and the intention to use m-banking. This result is not consistent with previous studies. This may imply that customers' perceived subjective norms will not be an influential factor than the other factors in determining intention to use M-banking.

5. Implications

This study was conducted based on the theory of planned behaviour. Compatibility and perceived risk have also been added to the model as they are more relevant to the M-banking context. This model was not significantly tested in a developing economy setting such as Sri Lanka and in the context of mobile banking. Thus, this study contributes by filling the theoretical gap between developed and developing contexts. Research findings contribute to the existing literature by providing insights on the determinants of intention towards using M-banking. The study provides the model for testing customers' intention towards using M-banking in the financial sector. Finally, this

research has provided extended knowledge in the domain of technology acceptance literature for a developing country like Sri Lanka.

Most finance firms face major challenges such as the low usage of its M-banking services by the vast customer group. Thus, to deal with this issue, the present study results will allow banking firms to identify the most suitable marketing strategy that will encourage customers to use M-banking as a more convenient and innovative channel.

According to demographic profile analysis, the study revealed that more men use the mobile banking application of ABC Company than women as well as most users are between 20-40 age categories. This is a significant finding for the company when determining promotion and advertising on M-banking applications. The company can focus on women rather than men since the market is almost there and can be increased through proper technical knowledge-sharing programmes. As well as a different strategy should be implemented for men since they are already aware of M-banking applications, perhaps they might be seeking upgrade of the existing versions with new features and functions, but the same cannot be expected from women, according to demographic analysis. When considering respondents' age distribution, most users were between the ages of 20 to 40 since the factor is significant for decision-making and deciding marketing strategies.

From the perceived usefulness aspect, it can be identified that M-banking users are highly concerned about the effectiveness of what they performed using M-banking. Therefore, it is necessary to create marketing campaign on awareness of M-banking services among the customers about the benefits of M-banking specially focusing on convenience and availability.

Furthermore, the firms should educate their customers on how to do their day-to-day banking activities through the M-banking and make the services more familiar to the customers. When a customer visits the branch, it will be beneficial if the staff members can convince and educate them on how to use M-banking services. Moreover, as this study found perceived risk as a significant driver in explaining intention to use M-

banking, it is important to educate customers about the possibility of the conducting risk-free transactions through M-banking.

6. Limitations and Future Research

This study was conducted in the context of Sri Lanka, targeting M-banking users in the Southern province of a selected finance company. This leads to the issue of the generalisability. Hence, the findings may not apply to Sri Lanka, as there are certain differences. The second limitation pertains to the research design. This study used a cross-sectional design, wherein data were collected at one point in time. As M-banking adoption decision is viewed as a related psychological construct where longitudinal empirical studies are required to understand this phenomenon in-depth. Future studies with a longitudinal research design would greatly contribute to the literature.

The third limitation deals with the sample size of the present study. Due to time and financial constraints, the sample was limited to 213 respondents. A larger sample would increase the statistical power and offer rigorous findings (Hair et al., 2010). Future studies with a larger sample size are therefore required. The fourth limitation is related to the data collection tools. The present study used a questionnaire survey to collect primary data about the phenomenon of interest. Alternative mechanisms, such as interviews, would facilitate an in-depth understanding of the M-banking usage behaviour and its determinants. Thus, future studies that employ interviews and qualitative analysis of interview data would generate important insights into this phenomenon. The fifth limitation relates to the inclusion of independent variables in the research model. The study used only five factors based on TPB. Additional variables specified in other theories such as Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovation Theory might have an impact on M-banking usage. Finally, this study does not consider the institutional, regulatory and security aspect of the M-banking, which can create a significant impact on customer perception.

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Business Economics and Finance

**EXPORTS REVEALED COMPARATIVE ADVANTAGE IN
INTERNATIONAL TRADE:
A STUDY BASED ON EXPORTS IN SRI LANKA**

Gunaratne, M.D.N.

Agriculture Sector Modernisation Project, State Ministry of Development of Minor Crops Plantation
including Sugarcane, Maize, Cashew, Pepper, Cinnamon, Cloves, Betel Related Industries, and
Export Promotion, Sri Lanka

Joseph, R.

University of Vocational Technology, Ratmalana, Sri Lanka
rjmathstat@gmail.com

Abstract

Economic development is one of the main objectives of any society, and the growth of exports is fundamental to economic development. This study aims to analyse merchandise exports in terms of export value and international competitiveness and to identify viable and competitive export commodities of Sri Lanka in international trade. Export figures of 1,062 merchandise export items (by four-digit HS codes) from 2016 to 2020 in Sri Lanka and the World were used in the study. Exports revealed comparative advantage (Export RCA) was calculated for the above exports items in Sri Lanka. The scatter plot of Export RCA versus average annual export values provides visualised information about international competitiveness versus the current performance of each export item in Sri Lanka. This study suggests cluster analysis to identify homogeneous groups of export items based on export RCA and export performances. In Sri Lanka, out of 1,062 export items, only 198 showed Export RCA >1 and contributed 91% of total exports. Garment related items account for nearly half of the total exports (49%), while agriculture and food production contribute nearly one fourth of the total exports (22%) which can be relevant to decision-makers.

Keywords. Merchandised exports, Export RCA, Cluster analysis, International trade

1. Introduction

The Sri Lankan economy has experienced a deficit in trade balance over the past four decades and despite the policy changes that took place to improve the trade deficit in Sri Lanka. It was noted that after the year 2000, the trade deficit had increased significantly, mainly due to a decline in exports as against the growth in imports (Weerasinghe & Perera, 2019). The importance of minimising the import-export deficit in Sri Lanka is more widely recognised as the increasing pressure of the trade deficit in Sri Lanka.

The COVID-19 pandemic negatively influenced world trade and industries. This pandemic situation triggered a global financial shock and recession (World Bank, 2020), and the middle-income countries such as Sri Lanka has been noted for very high economic vulnerabilities and shocks both internally and externally during this period. However, during the COVID-19 pandemic, Sri Lanka's economy contracted by 3.6% in 2020, the worst growth performance on record, as is the case in many countries fighting the pandemic and yet managed to improve Sri Lanka's trade balance narrowed to US\$ -6,008 million in 2020 from US\$ -7,997 million in 2019 (Central Bank of Sri Lanka, 2021). This was mainly due to a significant reduction of imports in 2020, which more than offset the decline in exports (Table 1).

Table 1

Trade deficit in 2019 and 2020 in Sri Lanka (in US \$ Mn.)

Year	Export	Import	Balance of Trade
2019	11,940	19,937	-7,997
2020	10,047	16,055	-6,008
Change from 2019 to 2020	-1,893	-3,882	+1,989

Source: Central Bank of Sri Lanka (2021)

However, with insufficient financial inflows to meet external liabilities, reserves declined, and due to a shortage of foreign currency, the exchange rate depreciated by 6.5% from January to March 17, 2021 (World Bank, 2021). Meanwhile, many economic sectors like tourism, construction, transport, and services were badly affected by the Covid-19 outbreak, while collapsing global demand impacted the textile industry. Job losses and earning shortfalls disrupted private consumption, and uncertainty impeded investments. Therefore, analysis of exports of merchandise items is needed to identify the export potential through competitive advantage, which helps improve export performance, encourage international trade, and ultimately create a favourable balance of payments position.

Sri Lanka was one of the first countries to liberalise trade. The governments of Sri Lanka have made their efforts to mitigate the trade deficit following the trade liberalisation in the early 1980s. Although export volumes to new destinations have increased with the expansion of product range, policies on trade have not been sufficient to identify potential export items with more comparative advantage. However, the range of imports has increased more widely. Consequently, the trade deficit increased continuously, and the fiscal and monetary policies did not contribute much to reduce the trade deficit. Especially in economic shocks and recessions and during the pandemic, including Covid-19, the pressure on foreign remittance, tourism, and many other foreign exchange earner industries experienced falls. Therefore, the importance of increasing exports is more widely recognised by the Sri Lankan government. On the other hand, the International Monetary Fund (IMF) says that many advanced economies are expected to enter a recession (2021), and it further describes the decline as the worst since the Great Depression of the 1930s (BBC News, 2021). Therefore, the vital role of decision-makers requires to become ever precise with the empirical data analysis to identify the priorities of export sectors and corresponding industries in terms of comparative advantage of merchandised exports to reach the international trade.

As a developing nation, the inputs (capital, land, and labour and so on) must be utilised in an optimal manner to maximise economic output. Therefore, identifying the commodities with more comparative advantage is vital for policy makers. This helps focus the limited inputs in the economy to draw the maximum output and, through

increasing merchandised exports, contribute to earning more foreign exchange. Although international trade is dynamic, focusing on export items with more comparative advantage ensures more stability and sustainability in the long run. The study is focused on analysing trade statistics with Exports Revealed Comparative Advantage (Export RCA) and cluster analysis of Exports and Export RCA which will be helpful to grouping them based on international trade related variables for prioritising and expediting the attempt to restore an economy minimising the trade deficit which is required for a sustainable economy. The objective of this study is to analyse merchandise exports in terms of export value and international competitiveness and to identify viable and competitive export commodities in terms of the revealed comparative advantage of Sri Lanka in international trade.

2. Literature Review

Amongst developing countries, Sri Lanka was an early mover and experienced trade liberalisation from 1980s to 1990s. Then export was identified as a main factor in trade balance, and during the period from 1990s to 2000, export promotion schemes were launched in order to rectify the trade deficit problem, which played a major role in the economic dynamics of Sri Lanka (Weerasinghe & Perera, 2019). Textiles and garments, tea, coconut and coconut products, spices, gems, rubber products and fish are the main exports in Sri Lanka (International Trade Centre [ITC], 2021). United States of America (USA), the United Kingdom (UK), India, and some other European countries are major destinations of Sri Lankan exports (Gunawardana, 2020). Sri Lanka's export performance has not been satisfactory since 2000, and the expanding trade deficit is partly explained by the unimpressive performance of the export sector. The global economic downturn is not the only reason for the low export growth in Sri Lanka.

Expanding trade deficit in 2011 and 2012 is partly explained by the unimpressive performance of the export sector (Kelegama, 2013). In 2019, agricultural exports accounted for 20.6%, and it declined due to decreased production of agricultural exports, unfavourable price fluctuations in the global tea market and low demand for seafood in countries of the European Union (Gunawardana, 2020). Under the COVID-19 pandemic situation of Sri Lanka, many Micro, Small and Medium Enterprises (MSME) were adversely affected in several sectors such as apparel, footwear and

leather sector, processed food industry, and handloom and handicraft industry (Gunawardana, 2020). Therefore, the importance of analysing and identifying comparative advantages of export items is more widely recognised with the increasing pressure of the trade deficit of Sri Lanka.

As per the findings contrary to popular belief, concentration is not necessarily a hindrance to export success (Abeysinghe, 2017). The RCA index is greater than one ($RCA > 1$) for 24 products sectors indicating that Sri Lanka enjoys a comparative advantage in these sectors in the global market (Hettiarachchi, 2018). Sri Lanka's markets and products in international trade show significant deviation from global demand, and the data reveals this to be more pronounced in products than in markets (Abeysinghe, 2017). When analysing exports in Sri Lanka, some descriptive statistics show that industrial goods, including the textile and garment sector, have a great share compared to other output and the tea exports recognised as a potential agricultural export in Sri Lanka (Achchuthan, 2013). According to an analysis of the export performance of the coconut sector of Sri Lanka (Prasannath, 2020), market growth rate, relative market share and Boston Consulting Group's product portfolio matrix approach has been used to identify the coconut exporting markets and to classify coconut importing countries from Sri Lanka. As per the results, all the other markets except the USA did not reflect a growth in revenue from coconut exports (Prasannath, 2020). Herfindahl-Hirschman Index (HHI) is a measurement of market concentration and competitiveness, and it has been applied to describe the trends and patterns of export diversification of the processed food industry in Sri Lanka (Sahibzada et al., 2020). The study says that the composition of processed food export baskets has changed in Sri Lanka from a minimally processed level to a moderately and highly processed level during the period between 2001 to 2017.

The RCA can be used as one of the measures of competitiveness in both exports and imports and has gained general acceptance (Abbas & Waheed, 2017). According to Revealed Symmetric Comparative Advantage (RSCA) and Trade Balance Index (TBI), tea, vegetables, textiles, fibres, spices, meal and flour of wheat and flour of meslin, women's clothes knitted or crocheted are the foremost commodities enjoying a comparative advantage in Sri Lanka (Sachithra et al., 2014). However, import

restrictions, export subsidies, the impact of different trade agreements and other protectionist policies of governments to some extent may distort the results obtained from RCA indices (Herath & Ravinthirakumaran, 2013). Using Balassa Index, Riaz and Bergman (2020) found a mutual long run causal relationship between comparative advantage exports and economic growth in the case of Sri Lanka. The agriculture sector shows more comparative advantage than other sectors in Sri Lanka like in other developing countries. Balassa index investigates the comparative advantage and trade specialisation in different sectors of different economies. The policymakers, therefore, may profitably use the results obtained from such indices as benchmarks guidelines and pointers while supplementing their decisions with qualitative surveys and judgments.

3. Methodology

Secondary data was used for the analysis, which was obtained from International Trade statistics. One thousand sixty two (1,062) merchandise export items by four digit HS codes in Sri Lanka and world exports (related to those exports) from 2016 to 2020 was used for the study (ITC. (n.d.)). The analysis was done with merchandised export data and Export RCA values. The RCA index of country i for product j is often measured by the product's share in the country's exports in relation to its share in world trade:

$$RCA_{ij} = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$$

Where, x_{ij} and x_{wj} are the values of country i 's exports of product j and world exports of product j and where X_{it} and X_{wt} refer to the country's total exports and world total exports.

The export RCA index can be used to determine the most important product groups for the country's export trade. A comparative advantage is "revealed" if $RCA > 1$ and if $RCA < 1$, the country is said to have a comparative disadvantage in the commodity or industry. Export statistics were interpreted with tables. Cluster analysis was done to find groups or clusters in average exports p.a. and export RCA by different HS codes. The k -means clustering algorithm was applied to investigate the inherited grouping or partition of data. The approach k means follows to solve the problem is called Expectation-Maximisation.

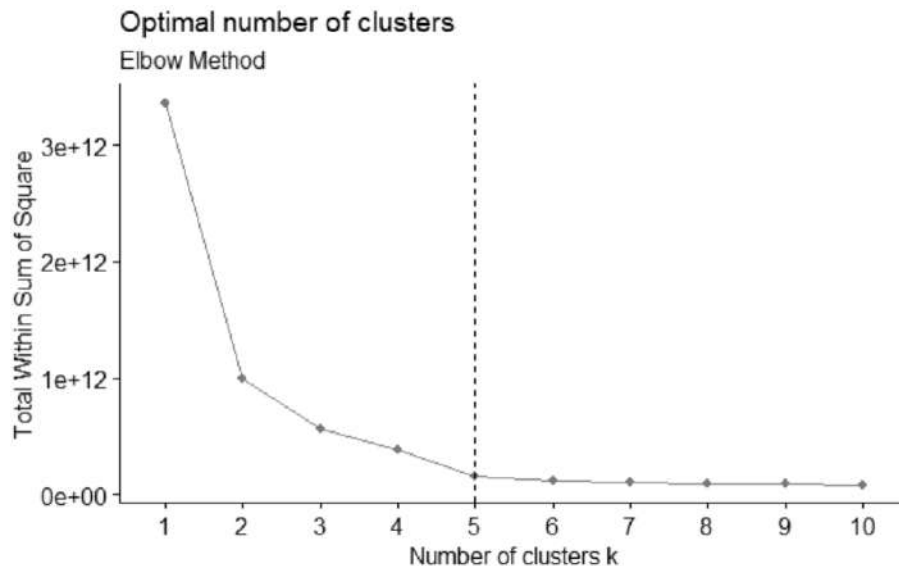
$$J = \sum_{i=1}^m \sum_{k=1}^K w_{ik} \|x^i - \mu_k\|^2$$

Where, $w_{ik} = 1$ for data point x_i if it belongs to cluster k , otherwise, $w_{ik} = 0$. μ_k is centroid of x_i cluster.

The Elbow method was applied to find the optimum number of clusters scree plot, which can find a good k number of clusters based on the sum of squared distance (SSE) between data points and their assigned clusters' centroids. Therefore, the optimum number of clusters is 5.

Figure 1

Optimum number of clusters with elbow method



The R statistical software (version 4.0.5) was used to analyse data. (Annexure A: R Scripts)

4. Results and Discussion

Sri Lanka's export economy is dominated by mainly tea, apparel, and cash-crop exports. The apparel sector plays the biggest role in the country's manufacturing and exports. Table 2 shows the average exports per annum in Sri Lanka under 11 categories from 2016-2020. As per the Table, 2 total export is US\$ 11,381,688 thousand per annum, and nearly half (49%) was from garments related exports and 71% of the total exports was in both garments, textile related commodities and agriculture and food

products categories. Out of one thousand sixty two items, 198 items show more than 1 Export RCA. The contribution of these items to the total export is US\$ 10,290,444 thousand p.a.(91% of total exports). Agriculture and Food production is being more interesting category which contributed nearly one in fourth of the total exports (22%).

Table 2

Sri Lankan Exports by categories: Average p.a : 2016-2020

Category	Average (2016:2020) US\$'000	Share
Garments, Textiles & Related	5,565,204	49%
Agriculture & Food Products	2,539,621	22%
Plastics & Rubbers	979,754	9%
Electrical, Electronics, Machinery	526,648	5%
Processed Stone & Glass	401,596	4%
Transportation Products	380,185	3%
Medical, Consumer & Other Products	308,506	3%
Chemicals & Related	209,170	2%
Wood Products	146,741	1%
Processed Metals	128,450	1%
Extractives	195,812	2%
Total	11,381,688	100%

Source: (ITC.n.d)

4.1 Sri Lanka's Sectoral Specialisation and Export Competitiveness

Sri Lanka's sectoral specialisation and export competitiveness will be discussed in terms of countries' share of exports to world trade and Export RCA. Measures of RCA have been used to help assess a country's export potential. When the export comparative advantage, RCA is greater than 1 for a given product, it is inferred to be a competitive exporter of that product relative to a country producing and exporting that good at or below the world average (United Nations Conference on Trade and Development Stat, n.d.). The RCA indicates whether a country is in the process of extending the products in which it has a trade potential, as opposed to situations in which the number of products that can be competitively exported is static. It can also provide useful information about potential trade prospects with new partners (World Integrated Trade Solution, 2010). A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the

country is said to have a revealed comparative advantage in the product.

Table 3

Ten (10) merchandised exports items with highest RCA in Sri Lanka (from 2016 to 2020)

HS Code	Product label	Sri Lankan Share (%)	Export RCA	Coefficient of Variance % - Export RCA (2016: 2020)
'0906	Cinnamon and cinnamon-tree flowers	25%	396.1	16%
'5305	Coconut, abaca "Manila hemp or Musa textilis Nee", ramie, agave and other vegetable textile ...	19%	291.4	18%
'0902	Tea, whether or not flavoured	14%	217.2	21%
'4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, tyre treads and tyre flaps, ...	14%	211.5	7%
'1404	Vegetable products, n.e.s.	8%	118.3	47%
'6116	Gloves, mittens and mitts, knitted or crocheted (excluding for babies)	7%	108.7	13%
'0907	Cloves, whole fruit, cloves and stems	6%	94.2	44%
'6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, ...	5%	85.9	10%
'9301	Military weapons, incl. sub-machine guns (excluding revolvers and pistols of heading 9302 and others)	5%	83.6	140%
'6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, négligés, bathrobes and others	4%	70.2	3%

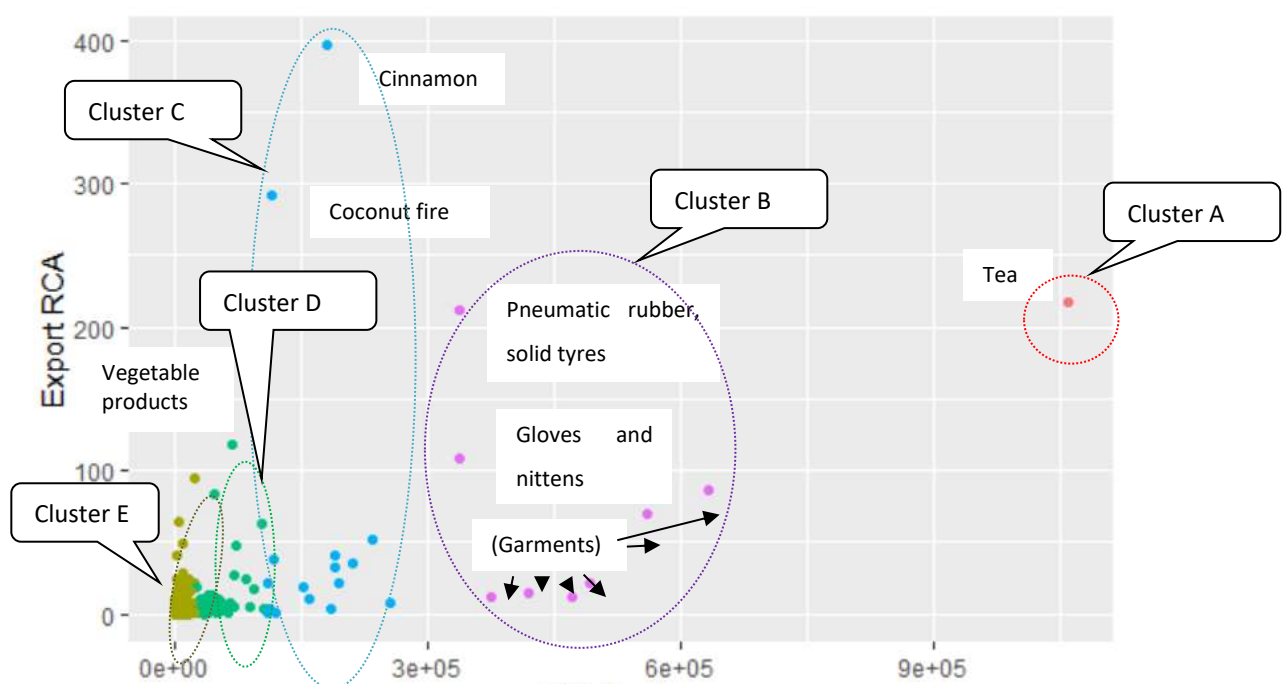
Figure 2 shows the Export RCA against export value (p.a) in Sri Lanka from 2016 to 2020. As per Figure 1, cinnamon (HS code: '0906), coconut fibre (HS code: '5305), tea (HS code: '0902) and pneumatic rubber and solid tyre products (HS code: '4012) shows the highest Export RCA respectively. But tea is yet the only single item which generates more than US\$ 1 billion per annum in Sri Lanka. Even though the competitiveness of Cinnamon and Coconut fibres is higher than tea in the international trade in terms of export RCA those items are far behind the tea exports in value term so far.

In this study, the coefficient of variance % was calculated to compare the variation of export RCA of all export items over the range of time. According to the analysis, garments, textiles and related commodities rubber products, essential oil and coconut kernel products show relatively lower variations whereas some items like manufactured tobacco, frozen fish and light-vessels, fire-floats, show higher variations over the period.

Cluster analysis comprises a series of methods for determining natural groupings in export statistics. Five homogeneous groups were identified by using cluster analysis which analysed export RCA and export values (Figure 2). Cluster analysis comprises a series of methods for determining natural grouping in multivariate data (Wijekoon, 2013). Figure 2 shows five (5) clusters known as Cluster A, B, C, D and E.

Figure 2

Export RCA against average exports in Sri Lanka



As per Figure 2, total export items can be divided into five clusters, as shown in Table 4. Cluster A contributed 9% with a single item. Cluster B, C, D and E contributed 32%, 23%, 20% and 15% respectively. Just nine (9) items contributed 41% of the total

exports (belongs to A and B clusters). Sixteen (16) items in Cluster C contributes 23% of the total exports. Therefore, expediting of re-establishing the production of these items has to be given the maximum priority.

Table 4

Summary of exports and number of items by clusters

Cluster	Exports, 2016-2020 avg (US\$ 000.p.a.)	Percentage (%)	No of items
Cluster A	1,060,571	9%	1
Cluster B	3,629,697	32%	8
Cluster C	2,643,547	23%	16
Cluster D	2,322,883	20%	46
Cluster E	1,724,990	15%	991
Total	11,381,688	100%	1062

4.2 Cluster A

Cluster A contains only tea which accounts for 9% of total exports, as seen in Table 5. It generates the highest foreign exchange as a one four digit HS code.

Table 5

Exports and Export RCA of Cluster A

HS Code	Product label	Exports, 2016-2020 avg (USD 000.p.a.)	Contribution to total Export	Export RCA	Coefficient of Variance %- Export RCA (2016: 2020)
'0902	Tea, whether or not flavoured	1,060,571	9%	217.2	21%

4.3 Cluster B

Cluster B contains eight (8) items contributing 32 % to the total exports (Table 6).

Table 6

Exports and Export RCA of Cluster B.

HS Code	Product label	Exports, 2016-2010 avg (USD 000.p.a.)	Contribution to total Export	Export RCA	Coefficient of Variance %- Export RCA (2016: 2020)
'4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, tyre treads and tyre flaps, ...	337,644	3%	211.5	7%
'6116	Gloves, mittens and mitts, knitted or crocheted (excluding for babies)	337,241	3%	108.7	13%
'6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, ...	633,727	6%	85.9	10%
'6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, négligés, bathrobes, ...	561,648	5%	70.2	3%
'6104	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, ...	492,983	4%	22	8%
'6109	T-shirts, singlets and other vests, knitted or crocheted	419,077	4%	14.8	6%
'6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches ...	374,718	3%	12.3	6%
'6204	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, ...	472,660	4%	11.6	6%
Total		3,629,697	32%		

4.4 Cluster C

Table 7 shows that Cluster C contains sixteen (16) items extending a contribution of 23% of the total exports.

Table 7*Exports and Export RCA of Cluster C.*

HS Code	Product label	Exports, 2016-2010 avg (USD 000.p.a.)	Contribution to total Export	Export RCA	Coefficient of Variance %- Export RCA (2016: 2020)
'6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted (excluding ...	256,104	2%	7.6	21%
'6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar ...	235,761	2%	52.4	25%
'4015	Articles of apparel and clothing accessories, incl. gloves, mittens and mitts, for all purposes, ...	212,503	2%	35.1	16%
'6205	Men's or boys' shirts (excluding knitted or crocheted, nightshirts, singlets and other vests)	194,224	2%	22.1	6%
'7103	Precious stones and semi-precious stones, whether or not worked or graded, but not strung, ...	190,369	2%	32.9	47%
'6111	Babies' garments and clothing accessories, knitted or crocheted (excluding hats)	189,586	2%	40.9	6%
'4011	New pneumatic tyres, of rubber	186,382	2%	3.9	9%
'0906	Cinnamon and cinnamon-tree flowers	180,381	2%	396.1	16%
'8905	Light-vessels, fire-floats, dredgers, floating cranes, and other vessels the navigability of ...	159,248	1%	10.2	90%
'6206	Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted and vests)	153,308	1%	19.1	3%
'2710	Petroleum oils and oils obtained from bituminous minerals (excluding crude); preparations containing ...	119,433	1%	0.3	74%
'6112	Track-suits, ski-suits and swimwear, knitted or crocheted	116,990	1%	37.6	6%

'5305	Coconut, abaca "Manila hemp or Musa textilis Nee", ramie, agave and other vegetable textile ...	116,314	1%	291.4	18%
'8431	Parts suitable for use solely or principally with the machinery of heading 8425 to 8430, n.e.s.	113,289	1%	3.2	37%
'6105	Men's or boys' shirts, knitted or crocheted (excluding nightshirts, T-shirts, singlets and ...)	109,838	1%	21.4	32%
'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...)	109,819	1%	1.5	28%

4.5 Cluster D

Table 8 shows 46 items of cluster D which contributes 20% of the total exports.

Table 8

Exports and Export RCA of Cluster D.

HS Code	Product label	Exports, 2016-2020 avg (USD Mn.p.a.)	Contribution to total Export	Export RCA	Coefficient of Variance %- Export RCA (2016: 2020)
'1404	Vegetable products, n.e.s.	68,798	0.60%	118.3	47%
'9301	Military weapons, incl. sub-machine guns (excluding revolvers and pistols of heading 9302 and ...)	48,262	0.40%	83.6	140%
'3802	Activated carbon; activated natural mineral products; animal black, whether or not spent	103,154	0.90%	62.6	22%
'6208	Women's or girls' singlets and other vests, slips, petticoats, briefs, panties, nightdresses, ...	72,565	0.60%	48.3	25%
'0904	Pepper of the genus Piper; dried or crushed or ground fruits of the genus Capsicum or of the ...	70,211	0.60%	26.6	24%

'1513	Coconut "copra", palm kernel or babassu oil and fractions thereof, whether or not refined, ...	86,216	0.80%	23.9	15%
'6209	Babies' garments and clothing accessories of textile materials (excluding knitted or crocheted ...	26,739	0.20%	18.3	9%
'0801	Coconuts, Brazil nuts and cashew nuts, fresh or dried, whether or not shelled or peeled	95,437	0.80%	17.5	18%
'3301	Essential oils, whether or not terpeneless, incl. concretes and absolutes; resinoids; extracted ...	46,451	0.40%	13.4	10%
'6306	Tarpaulins, awnings and sunblinds; tents; sails for boats, sailboards or landcraft; camping ...	40,521	0.40%	12.7	18%
'6106	Women's or girls' blouses, shirts and shirt-blouses, knitted or crocheted (excluding T-shirts ...	31,219	0.30%	10.9	23%
'6114	Special garments for professional, sporting or other purposes, n.e.s., knitted or crocheted	52,494	0.50%	10.9	52%
'6505	Hats and other headgear, knitted or crocheted, or made up from lace, felt or other textile ...	29,226	0.30%	8.7	21%
'2401	Unmanufactured tobacco; tobacco refuse	56,450	0.50%	8.3	39%
'6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches ...	67,051	0.60%	7.9	25%
'6406	Parts of footwear, incl. uppers whether or not attached to soles other than outer soles; removable ...	41,845	0.40%	7.7	80%
'2403	Manufactured tobacco and manufactured tobacco substitutes and "homogenised" or "reconstituted" ...	32,412	0.30%	7.3	123%
'8712	Bicycles and other cycles, incl. delivery tricycles, not motorised	39,816	0.30%	6.8	16%

'9603	Brooms, brushes, incl. brushes constituting parts of machines, appliances or vehicles, hand-operated ...	40,952	0.40%	6.8	8%
'2008	Fruits, nuts and other edible parts of plants, prepared or preserved, whether or not containing ...	55,451	0.50%	5.6	60%
'4707	Recovered "waste and scrap" paper or paperboard (excluding paper wool)	29,212	0.30%	5.4	4%
'4016	Articles of vulcanised rubber (excluding hard rubber), n.e.s.	90,178	0.80%	5.4	4%
'0302	Fish, fresh or chilled (excluding fish fillets and other fish meat of heading 0304)	69,817	0.60%	5.3	23%
'6211	Tracksuits, ski suits, swimwear and other garments, n.e.s. (excluding knitted or crocheted)	39,561	0.30%	4.9	59%
'0304	Fish fillets and other fish meat, whether or not minced, fresh, chilled or frozen	71,072	0.60%	4.8	53%
'4001	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary ...	38,985	0.30%	4.7	17%
'2106	Food preparations, n.e.s.	105,335	0.90%	3.8	34%
'6115	Pantyhose, tights, stockings, socks and other hosiery, incl. graduated compression hosiery ...	30,892	0.30%	3.7	40%
'2309	Preparations of a kind used in animal feeding	67,455	0.60%	3.5	16%
'0802	Other nuts, fresh or dried, whether or not shelled or peeled (excluding coconuts, Brazil nuts ...)	38,291	0.30%	3.2	31%
'6307	Made-up articles of textile materials, incl. dress patterns, n.e.s.	48,576	0.40%	2.9	40%
'6006	Fabrics, knitted or crocheted, of a width of > 30 cm (excluding warp knit fabrics "incl. those ...)	32,043	0.30%	2.8	61%

'6202	Women's or girls' overcoats, car coats, capes, cloaks, anoraks, incl. ski jackets, windcheaters, ...	26,772	0.20%	2.3	56%
'0306	Crustaceans, whether in a shell or not, live, fresh, chilled, frozen, dried, salted or in brine, ...	38,481	0.30%	2.1	14%
'0303	Frozen fish (excluding fish fillets and other fish meat of heading 0304)	26,604	0.20%	1.8	106%
'9506	Articles and equipment for general physical exercise, gymnastics, athletics, other sports, ...	30,344	0.30%	1.8	8%
'8538	Parts suitable for use solely or principally with the apparatus of heading 8535, 8536 or 8537, ...	32,745	0.30%	1.4	26%
'8901	Cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the ...	63,591	0.60%	1.4	14%
'9503	Tricycles, scooters, pedal cars and similar wheeled toys; dolls' carriages; dolls; other toys; ...	39,442	0.30%	1.3	31%
'8537	Boards, panels, consoles, desks, cabinets and other bases, equipped with two or more apparatus ...	52,132	0.50%	1.3	31%
'9031	Measuring or checking instruments, appliances and machines not elsewhere specified in chapter ...	29,847	0.30%	1	9%
'3923	Articles for the conveyance or packaging of goods, of plastics; stoppers, lids, caps and other ...	35,400	0.30%	1	21%
'8504	Electrical transformers, static converters, e.g. rectifiers, and inductors; parts thereof	53,441	0.50%	0.9	23%
'3926	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.	40,008	0.40%	0.8	76%

'8544	Insulated "incl. enamelled or anodised" wire, cable "incl. coaxial cable" and other insulated ...	50,433	0.40%	0.6	19%
'9999	Commodities not elsewhere specified	36,957	0.30%	0.1	78%
Total		2,322,883	20%		

4.6 Cluster E

Cluster E represents nine hundred ninety-one (991) items, and its contribution to the total exports is 15%.

While identifying more competitive commodities in international trade, much emphasis must be given to identify industries that will have been more competitive in the future. The Global Innovation Index (GII) also suggests the potential areas that each economy should be a focus on to make it more competitive (World Intellectual Property Organisation, 2021).

5. Conclusion and Implications

Both export values and Export RCA are important variables to determine the most important products for the country's trade and export potential. This study suggests Export Revealed Comparative Advantage (RCA) identify competitive merchandised exports of Sri Lanka in international trade, and cluster analysis can be suggested as a statistical tool to clarify multivariate data into homogeneous groups in terms of export revenue and export RCA. Identifying such subgroups will help to develop policies by identifying economic potentials in terms of exports and to reveal characteristics of patterns and structure in export items. As suggested in this study identifying priorities for items such as cinnamon, coconut fibre, and pneumatic tyres will be more effective, which have a more competitive advantage in the international trade.

However, this study can be further extended with a net cost of inputs, employment opportunities generated being incorporated for a more comprehensive study about exports and their impact on the country. It is vital to identify commodities with a more competitive advantage and focus more on expanding the market. At the same time, it is important to identify the commodities that can have the potential for value addition to

make them more productive. This gives information on where more investment is to be made and the direction of the research and development (R & R&D).

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Annexure A : R scripts

```

attach(data)
data <- na.omit(data)

library(factoextra)
install.packages("NbClust")
library(NbClust)
df <- data[,-1]
head(df)
#Elbow method
fviz_nbclust(df, kmeans, method = "wss")

#to draw refernce line
fviz_nbclust(df, kmeans, method = "wss")+ geom_vline(xintercept = 5, linetype=2)

#to add subtitle "Elbow Method"
fviz_nbclust(df, kmeans, method = "wss")+ geom_vline(xintercept = 5, linetype=2)+ labs(subtitle =
  "Elbow Method")

# to compute k means clusters
set.seed(123)
km.res<-kmeans(df,5,nstart = 25)
print(km.res)
km.res$cluster
km.res$centers

#the number of observations in each cluster
km.res$size

aggregate(df,by=list(cluster=km.res$cluster),mean)
dd<-cbind(df,cluster=km.res$cluster)
head(dd, 1062)

k.max <- 15
data <- data
wss <- sapply(1:k.max,
  function(k){kmeans(data, k, nstart=50,iter.max = 15 )$tot.withinss})
wss
plot(1:k.max, wss,

```

```

type="b", pch = 19, frame = FALSE,
xlab="Number of clusters K",
ylab="Total within-clusters sum of squares")

library(ggplot2)
ggplot(data = data, aes(Sri_Lanka, `Export RCA`)) + geom_point()

res.kmeans<-lapply(1:5, function(i) {
  kmeans(data[,c("Sri_Lanka", "Export RCA")], centers = i)
})
res.kmeans <- lapply(1:5, function(i) {
  kmeans(data[,c("Sri_Lanka", "Export RCA")], centers = i)
})

## SS for each cluster (1 cluster to 10 clusters)
lapply(res.kmeans, function(x) x$withinss)

## Sum up SS
res.within.ss <- sapply(res.kmeans, function(x) sum(x$withinss))
plot(1:3, res.within.ss, type = "b", xlab = "Number of clusters", ylab = "Within SS")

cluster.colors <- lapply(res.kmeans, function(x) x$cluster)

library(plyr)
l_ply(cluster.colors,
  function(colors) {

    plot(`Export RCA` ~ Sri_Lanka, data = data, col = colors, main = paste(nlevels(factor(colors))), pch
      = 16)
  })
l_ply(cluster.colors,
  function(colors) {
    plot.dat <- cbind(data, cluster = factor(colors))

    gg.obj <- ggplot(plot.dat, aes(Sri_Lanka, `Export RCA`, color = cluster)) +
      geom_point() + labs(title = paste(nlevels(factor(colors))))

    print(gg.obj)
  })
plot(`Export RCA` ~ Sri_Lanka, data = data, col = Species, pch = 16)

```

```
library(ggplot2)
ggplot(data, aes(Sri_Lanka, `Export RCA`, color=cluster.colors)) + geom_point()

library(factoextra)
k2 <- kmeans(df, centers = 5, nstart = 1065)
fviz_cluster(k2, data = df)

head(dd)
ggplot() +
  geom_point(data = dd,
            mapping = aes(x = Sri_Lanka,
                          y = `Export RCA`,
                          colour = cluster))

geom_point(data = dd,
           mapping = aes(x = Sri_Lanka, y = `Export RCA`, colour = cluster))

geom_point(mapping = aes_string(x = dd$centers[, "Sri_Lanka"], y = dd$centers[, "Export RCA"]),
           color = "red", size = 4)
```

Human Resources Management

PREVENTION OF SEXUAL HARASSMENT IN ORGANISATIONS: EVIDENCE FROM SRI LANKA

Adikaram, A. S.

Department of Human Resources Management, Faculty of Management & Finance, University of
Colombo

Kailasapathy, P.

Department of Human Resources Management, Faculty of Management & Finance, University of
Colombo
pavithra@fmf.cmb.ac.lk

Abstract

The aim of this paper is to present a framework that elucidates what Human Resource Professionals (HRPs) can do in practice to prevent sexual harassment in Sri Lankan companies through the experiences and successful practices of over 30 Sri Lankan companies. Using a qualitative approach, we interviewed 35 human resource professionals from 30 organisations in Sri Lanka. The Theory of Planned Behaviour is used as the theoretical lense of the study. Findings indicate numerous primary and auxiliary strategies and practices organisations use to prevent the occurrence of sexual harassment. The primary strategies include policies and procedures, effective complaint handling and communication and training. Auxiliary strategies include culture of respect, top management who lead by example, recruitment of the right people, protective measures and knowledgeable and capable HRPs. The findings move beyond the commonly discussed preventive strategies that are mainly discussed in the Western context and present a more context specific uncommon strategies that can be used in combination to successfully prevent sexual harassment. This framework will further assist in understanding the actual practices companies engage in to prevent sexual harassment and identify the drawbacks in some of the practices as well.

Keywords. Sexual harassment, Prevention, Policies, Communication, Training

1. Introduction

Research on sexual harassment at the workplace has proliferated over the past few decades, highlighting the seriousness of the issue. The issue has regained the attention of media, researchers and organisations recently with the #Metoo movement. Despite this increased interest and the many efforts and strategies suggested to prevent and handle sexual harassment over the many decades, the issue still persists in organisations (Fitzgerald & Cortina, 2018). Research on preventing and handling sexual harassment has mainly focused on individual strategies as well as organisational strategies. The most common organisational strategies that are discussed are the anti-harassment policies and training and education. Furthermore, these preventive strategies are discussed in relation to the Western context, where the legislation, policies and procedures and the context they are implemented are different. For example, while Equal Employment Opportunity Commission (EEOC) guidelines play a central role in preventing and handling sexual harassment in the USA, the legislation in Asian countries such as Bangladesh (Huda, 2019) is not well developed. At the same time, while Asian countries such as India have well-developed legislation on sexual harassment, its successful implementation is questioned (Sangwan & Thakre, 2018). In Sri Lanka, too, while legislation, directly and indirectly, addresses sexual harassment, its effectiveness is questioned (Udani, 2019).

Further, in Sri Lanka, there are no specific guidelines given to companies through these policies or court decisions to prevent sexual harassment as EEOC guidelines do or the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 in India does. As scholars (e.g. Chappell & Bowes-Sperry, 2015) affirm, organisations have established certain practices such as developing and communicating sexual harassment policies, providing sexual harassment training and having a sexual harassment/grievance procedure. Employees can use these to gain legal recourse. These practices have become 'legalised' in companies to a certain extent. However, as there are no requirements for companies to gain legal recourse in Sri Lanka, whether companies take steps to prevent, mitigate and address sexual harassment has become, more or less, a voluntary decision of companies.

At the same time, in many instances companies do not effectively handle sexual harassment incidents or take preventive action, and mainly follow a more common disciplinary process, rather than considering the unique and complex nature of the issue. Also, companies are more concerned about protecting their companies against unfair termination claims by the perpetrators than being fair to the victim. Nevertheless, sexual harassment is a serious issue in Sri Lankan workplaces. It needs proper action to prevent and handle if companies want to avoid its many consequences to individuals and companies (Dobbin & Kalev, 2019; Hill, 2018; McDonald et al., 2015). Malhotra and Srivastava (2016) highlight the need for HR to be proactive rather than reactive by pursuing measures such as creating sensitisation, formulating and enforcing policies rather than pursuing a reactive approach.

All in all, this points towards the need for Sri Lankan companies to have strategies to prevent sexual harassment within the country's legal context. Hence, within this context, this paper aims to present a framework that elucidates what Human Resource Professionals (HRPs) can do in practice to prevent sexual harassment in Sri Lankan companies through the experiences and successful practices of over 30 Sri Lankan companies. This framework will assist in understanding the actual practices companies engage in preventing sexual harassment and identifying the unique practices and drawbacks in some of the practices.

2. Literature Review

Prior research had explored how organisations prevent and resolve sexual harassment incidents in organisations. These studies have also proposed frameworks and suggested good practices. For example, through their case study of the U.S. Military, Buchanan et al. (2014) identified best practices to reduce sexual harassment in organisations. Practices such as a clear and consistent anti-harassment message from the organisational leaders communicated via a written, widely disseminated policy, training and education to all, and the implementation of formal and informal reporting, investigation, and remediation procedures are thus documented. Fox and Stallworth (2009) highlight the need to design and implement organisational anti-bullying policies, training, conflict management programmes and systems, and anti-bullying public policy and legislation. However, looking at these frameworks and suggestions, it is

clear that they have mainly concentrated on preventive mechanisms such as policies and training and development. While Buchanan et al. (2014) have suggested formal and informal reporting, investigation, and remediation procedures as best practices to reduce sexual harassment, they have not explained or explored these in detail. McDonald et al. (2015) have documented resolving sexual harassment complaints under secondary intervention in their framework. They suggested developing multiple complaints handling channels, ensuring timely, transparent complaint handling and applying commensurate sanctions. However, they do not explore how some of the suggestions can be achieved/ implemented. Hunt et al. (2010) present an intervention model consisting of primary (such as assessment of risk factors and antecedents, regular training using multiple methods, empowering employees), secondary (such as an informal network of advisers, formal responses, advocacy, and active coping strategies) and tertiary (such as crisis intervention, legal advice, rehabilitation and feedback cycle) interventions, supported by management commitment and implemented through legislation and policy.

These frameworks are developed mainly based on prior research (Hunt et al., 2010; McDonald et al., 2015) on a single or few case studies (Buchanan et al., 2014) or explore one or few aspects of handling complaints. For example, Salin (2009) had explored organisational responses such as transfers, dismissals and counselling. Hence, researchers have not sufficiently examined actual practices or effective strategies. Moreover, all these frameworks and strategies are presented and discussed in light of the experiences in the Western context. These findings would be difficult to apply to a context such as Sri Lanka, where the legislation and the cultural edifices are quite different from the West. Hence, in addressing these gaps, our framework considers our unique context while founding the framework on actual good practices of over 30 companies. Further, even though some of these practices, such as the anti-sexual harassment policy, are widely discussed as a preventive mechanism, we attempt to go beyond that and identify some of the variances and alternatives.

Many researchers have used the Theory of Planned Behaviour (Ajzen, 1991) in research related to changes in people's behaviour (Fox & Stallworth, 2009). This theory "offers a view of intentional human behaviour that deals with the relations among individual

beliefs and attitudes, social norms, and personal and organisational control, leaning toward intentions and behaviours” (Fox & Stallworth, 2009, p. 225). Thus, we will be using the theory of planned behaviour as the theoretical lens to relate to social norms, beliefs, and attitude towards behaviour that influences sexual harassment. These aspects are ingrained in the strategies and practices that constitute the framework we developed.

3. Methodology

Employing a qualitative approach, we used in-depth interviews to collect information regarding how HRPs handle sexual harassment complaints they receive in their organisations. Drawing from this main, broader study, we use the information from 35 HRPs of more than 30 companies to understand how they attempt to prevent sexual harassment in their organisations. The respondents were selected using the purposive sampling technique. The job positions of the HRPs ranged from junior- to senior-level management. Most of the HRPs interviewed were females (20) (see Appendix for details).

The companies represented different industries such as manufacturing, information technology, retail, service, finance and education and were all private organisations. We also had a mix of multinational, global and local organisations. Of the 30 organisations, 11 organisations had specific anti-sexual harassment policies. Two of the companies addressed sexual harassment under the broader anti-harassment policies. A few others stated addressing sexual harassment through other policies such as anti-discrimination policies, disciplinary policies, human rights policy and code of conduct. Five companies did not address sexual harassment through any policies, and two companies stated that they were currently developing anti-sexual harassment policies.

Data thus collected from the in-depth, in-person semi-structured interviews were transcribed verbatim, and a thematic analysis was carried out through coding and categorising. The main themes represented the preventive strategies that the different companies were implementing. Accordingly, the primary preventive strategies of companies were captured through three core themes, namely policies and procedures,

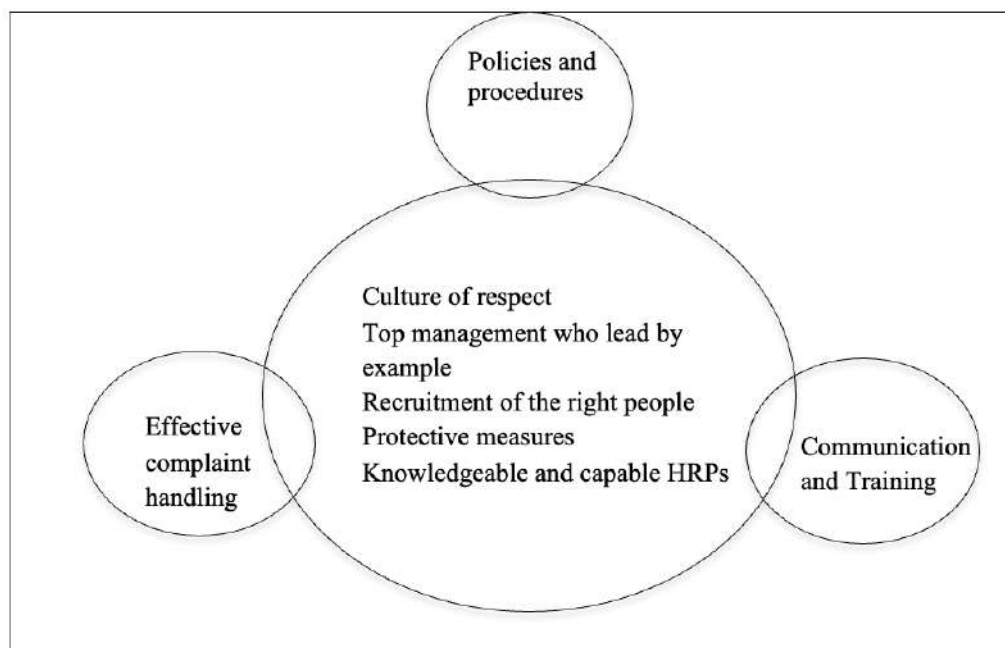
effective complaint handling mechanisms, and communication and training. In addition, auxiliary strategies were also identified (see Figure 1).

4. Findings and Discussion

As mentioned earlier, we used Ajzen's (1991) Theory of Planned Behaviour as our theoretical lens. This theory explains the relationship between attitude towards a behaviour, social norms, perceived behavioural control, intention to perform a behaviour, and the behaviour itself. Although we do not study the process, we identify the components that address what determine an individual's behaviour using the theory. The themes that we arrived at relating to changing or reinforcing the attitude towards sexual harassment, the organisational norms towards sexual harassment (zero tolerance) and the code of conduct/company policies will reduce the behavioural control of the employees. In other words, the themes of communicating and training, policies and procedures, and effective complaint handling procedures relate to attitude towards behaviour and social norms of the theory.

Figure 1

Primary prevention strategies and auxiliary strategies



From the interviews with the HRPs of the companies under study, we were able to identify specific strategies the companies employed in trying to prevent sexual harassment. We perceive these strategies as focussing on addressing determinants of an individual's behaviour. In addition, certain auxiliary factors that provide a basis and a conducive environment for successfully implementing these specific strategies for preventing sexual harassment were identified. These primary and auxiliary strategies and practices are related to changing the employees' attitude towards sexual harassment, raising awareness of the social norms, and reducing the employees' behavioural control of sexual harassment behaviour.

Specific primary prevention strategies that were thus identified as successful were the existence of effective policies and procedures, communication and training, and effective complaint handling mechanisms. While policies and procedures and training and awareness creation are commonly discussed as successful preventive mechanisms, our findings move beyond these common discussions, highlighting different variations of the policies and procedures and training and awareness creation that Sri Lankan companies engage. Further, the importance of communication as a preventive strategy is generally not discussed in detail in prior studies. For example, McDonald et al. (2015) mention that the provision of multiple communication channels is crucial in creating awareness about sexual harassment policies and increasing employees' confidence in using sexual harassment policies. However, they do not explain in detail how communication can be carried out. In our framework, communication is explained in detail as a key preventive strategy.

Similarly, even though complaint handling is generally discussed in detail in prior studies (e.g. Hunt et al., 2010; McDonald et al., 2015), it was not discussed as a primary preventive strategy and in numerous frameworks. This lack of specific attention to the complaint handling process as a preventive strategy can be because it is also part of the procedure related to handling sexual harassment. However, our interviewees highlighted the importance of effective complaint handling as a specific strategy that needs careful consideration.

Interviews also indicated how the mere presence of these preventive strategies would not prevent or reduce sexual harassment incidents. For the effective implementation of these strategies, certain auxiliary factors must be present in organisations. We identified them as a culture of respect, top management who lead by example, recruitment of the right people, protective measures, knowledgeable and capable HRPs or persons empowered to handle sexual harassment. The ensuing discussion will elucidate these factors in more detail.

4.1 Primary Prevention Strategies

4.1.1 Policies and Procedures

Existence of policies and procedures

How anti-sexual harassment policies and procedures lead to the prevention of sexual harassment has been discussed in detail in prior studies. Prior studies also stipulate the different criteria that make a policy and procedure effective. Factors highlighted by prior researchers (Becton et al., 2017) are a clear anti-harassment policy that defines what sexual harassment is and what sexual harassment is not, a complaint handling procedure that encourages employees to come forward with harassment complaints, protections for complainants and witnesses against retaliation, an investigative strategy that ensures privacy and confidentiality of the parties concerned.

While a specific policy on sexual harassment encompassing the many factors essential for its effectiveness is vital, we also identified that other policies could provide additional support to prevent sexual harassment. For example, a whistle-blowing policy with its protection provided for employees to report any illegal or wrongful acts within the company, such as sexual harassment with confidentiality and non-retaliation against such reporting being assured, was found to encourage people to report such instances. HRP8 stated how they have many policies and procedures that ensure that employees have different avenues to seek relief in instances of sexual harassment.

We have also a Human Rights Policy that kind of covers all of this. Then we have our Whistle Blower Policy called Speak Up....there is an Ethics helpline which is an Email and also a telephone number where people can directly report to Amsterdam and in all our new joiner orientations we speak about these policies. The Human Rights Policy, of course, is fairly new.

In addition, HRPs spoke of codes of conduct introduced to ensure employees do not engage in sexually harassing behaviours. Grievance handling policies and processes were also introduced to ensure more avenues for redress. Having these policies in place, in addition to specific anti-sexual harassment policies, would provide more coverage for the issue. Hence, even though there is no doubt that specific anti-sexual harassment policies and procedures are the most effective in preventing sexual harassment, these other policies too had certain benefits by complimenting the anti-sexual harassment policies.

Effective implementation of policies and procedures

It is also imperative to effectively implement these different policies about sexual harassment. In this regard, Hunt et al. (2010) highlight the importance of empowerment, formal support to victims and unconditional punishment for perpetrators as necessary factors for implementing the policies.

4.1.2 Communication and Training

Communication and training were identified as other critical strategies in preventing sexual harassment in organisations. These would mainly include communicating the ‘zero tolerance’ stand of organisations about sexual harassment more generally and about the policies and procedures related to sexual harassment more specifically.

The mere existence of anti-sexual harassment policies without proper communication is undoubtedly found to be useless. However, consistent with prior research, the companies of the current study too indicated how some companies engage in no or very ineffective communication of their policies of anti-sexual harassment. In contrast, some companies engage in very effective mechanisms of communication. The companies where communication of policies was ineffective, would merely mention the policy to employees during the orientation, have the policy on the intranet, and/or request the employees to go through the policy independently. This lack of interest shown by the management would inevitably lead employees not to give much attention to the policy and overlook it. However, in some other companies, such as Company 12, the HRPs would give a detailed explanation about the policy to employees during the orientation and then get the employees to go through the policy carefully. As stated by HRP14,

Orientation programme now I think since about two to three years we have included a special slot where there is an item on sexual harassment and we have an external party coming explaining what your rights are and what you are supposed to do and what job and also not only in terms of the processes and the policies but also making the audience aware of what you should not be doing in the workplace.

Companies 4, 12, and 16 had developed a system where the employees would have to sign/tick-off when they read the policy on the system, ensuring that the employees read and understand the policy. As HRP5 stated “*consciously read and understand the policies. So, every new recruit has to read, understand and sign off on these policies*”.

Some of these systems also require the employees to complete reading the company’s policies within a certain period to ensure that they start their employment with a proper understanding of its policies. However, as some HRPs indicated, whether the employees have read the policies before ticking or signing off is not tractable. Company 12, having understood this situation and the need for employees to be adequately aware of the policies, have developed questions based on the policies which the employees have to answer after reading the policies to ensure that the employees have correctly read and comprehend the policies. HRP14,

We have a questionnaire on these policies to see whether they actually read it because just having a box to tick means you will tick it anyway but they actually go to the website.

A few HRPs specifically highlighted the importance of not making this a one-time communication. For instance, communication takes place not only at the induction of the employee but a regular activity as indicated by HRP10,

Yes, but we have quarterly, we call it Town Hall meetings, so we tell them. As soon as we drafted this policy. we had a Town Hall meeting and then we had, it’s not only this policy, with this there were a couple of policies came out so we in a nutshell we told them this is the thing, these are the harassments, workplace harassments and these are the things that you ya apart from that, company is sending HR on these trainings and apart from this Women’s Day we have these

sessions and next year we are planning to have an awareness for everybody. So, again, through awareness only we educate them.

The content of the policy awareness sessions was also found to be necessary. HRPs said they discussed the policies, what sexual harassment is, what sexual harassment is not, how to seek redress and how serious the company is about creating a culture free of sexual harassment. For example, HRP5 said,

So, we tell them the tree [in seeking redress], your Line Manager first, Head of Department second, if you can't find either come to HR or the General Manager or any of the Heads of Department. So, I think telling people two things: one is you have support and this is a safe working environment and the third thing is if you violate any of this it's a non-negotiable.

Instead of merely talking about sexual harassment, HRP16 stated how they also use cases and scenarios to create more clarity.

Now let's say there are a lot of educational programmes that we do. So, at the time of the induction, we do a separate module on sexual harassment so there is not only this PPT [powerpoint] part, we discuss cases....Now the scenarios so what we tell is it's not about the intention of the guy, it is how you feel. If you feel uncomfortable then it's a you know harassment you know. So, we discuss these case scenarios.

In addition to communicating to employees about the policies on sexual harassment through awareness sessions, the companies appear to use other means to get the policy across. HRP18 stated how the company uses other means to communicate about sexual harassment, such as using screen savers on the issue. Every month, the company concentrates on creating awareness and education about a particular issue and uses screensavers of employees for this purpose. In certain months it would be about sexual harassment. In addition, HRP18 also stated how they use email notices and reminder emails to communicate about sexual harassment and the policies. HRP31 stated that their policies are posted on all the outlets. Further, photos and the contact details of the person receiving complaints are also posted at the outlets with the heading 'do you have a problem? Call [designated person's phone number]'. HRP8

When you get into the lift you probably see a diagram, two diagrams both translated into local language where if people feel that they are being either discriminated or behave in a different way, it covers a wide area from misappropriation to whatever but this also comes as an area where people can contact directly the two trusted representatives of the company that's the MD and myself and if they feel that they don't want to report to the trusted representatives.

Having these different means would undoubtedly assist HRPs to communicate about sexual harassment to employees effectively.

While the importance of training for preventing and effective handling of incidents of sexual harassment is undebatable, the effectiveness of these training programmes is increasingly questioned (Fitzgerald & Cortina, 2018; Medeiros & Griffith, 2019). More specifically, whether these training programmes lead to a long-term attitudinal or behavioural change outside the training environment is questioned (Medeiros & Griffith, 2019). Hence, it is vital to pay careful attention to provide training that would have long term attitudinal change and not mere awareness about sexual harassment.

The present study also indicated how the HRPs engage in various types of training regarding sexual harassment. Some of these training was directly related to creating awareness about the issue, such as what sexual harassment is, what is not sexual harassment, and the process to follow if a person is sexually harassed. HRPs also spoke of training they provide employees on biases, lack of respect, and lack of values. There were also training conducted on building inner strength – targeting women and divorced women (HRP20). HRP5 stated how they conduct sessions/programmes on unconscious biases,

A programme called Unconscious Bias, how to avoid, so that is like when you are selecting an employee at an interview there are some who feel ok, I don't want a female employee for this role because she can get married and have children and not come to work for three months. So, Unconscious Bias trains people to overcome thoughts like that.

Some HRPs spoke about programmes and discussions on being decent, being brave, and being accountable. HRPs also stated how they provide training to all the employees, new entrants, complaint handlers, and managers. For example, HRP25 stated that training needs to be given to Heads of departments (HODs) to identify possible instances of sexual harassment, listen to employees and identify what steps to follow concerning sexual harassment. The HODs would first receive a complaint or get to know of such instances happening in their companies. This training should be done in addition to the normal awareness about the issue. HRP16 indicated how they initially did not have awareness training for the outsourced employees. However, once a case came to light, they started training and creating awareness about sexual harassment among outsourced employees.

Many companies had committees formed to either receive the complaints, carry out the investigations, decide the action or do all of these. It is also essential to train these committee members about sexual harassment and handling complaints in such instances. For instance, in HRP16's company, they provide training to – Prevention of Sexual Harassment (POSH) Committee,

So, the POSH Committee is given in terms of details you know how to handle, if you get to know how you are going to complain, it's for all the employees but the Committee guys you know have a separate training on that.

Moreover, it was seen how this training would be more effective when conducted frequently and not as one-off sessions. Moreover, making the sessions more interactive and using creative means such as drama, poetry, songs related to sexual harassment was more effective.

The companies also stated how they would have online training sessions and physical face-to-face sessions. HRP18 stated that sexual harassment training is part of their certification process, making it compulsory for all employees to participate in the training.

We have mandatory training once a year, that is actually E-learning, that is actually conducted by the Compliance Department, Group Compliance so what happens is...we get the broadcast, the Email broadcast, the Email

communications, so every employee is supposed to log in and do the certification. It's not really a certification as such but it is E-learning and it is mandatory because they are [head office] very serious about it, they will give you a deadline and you have to follow it.

Highlighting a positive aspect of this training, HRP18 stated how these online sessions are interactive, ensuring deeper and active learning. HRP18 *will give some examples of scenarios and ask questions*. HRP5 stated how they conduct training on sexual harassment as a special campaign, rather than *just another training*, to pass a stronger message.

Some of the programmes are directly named as sexual harassment, and, in some companies, different names are used. For example, life skills (HRP5), and building inner strength (HRP20). So, these programmes are not directly handling sexual harassment only but are discussed as a life skill and development of inner strength.

4.1.3 Effective Handling of Complaints of Sexual Harassment

Another successful means to prevent sexual harassment is effective, fair and just handling of sexual harassment incidents. As prior research has detailed the aspects that should be present in handling sexual harassment effectively and fairly, we will not repeat them all here. However, what we found important through this study was the importance of having informal and formal settlement methods.

Further, we also realised that many companies employ their standard disciplinary procedure in handling sexual harassment complaints. Following due process, these disciplinary procedures generally consist of a few steps; 1) preliminary investigation upon receiving a complaint to evaluate the validity of the complaint and the availability of sufficient evidence to proceed with the matter. 2) if the preliminary investigation indicates a valid complaint and sufficient evidence to indicate that misconduct has occurred, a show-cause letter would be sent to the alleged wrongdoer with specific timelines to show reasons for the alleged behaviour. 3) if the alleged wrongdoer accepts the allegations against him/her in response to the show-cause letter, direct disciplinary action can be taken. If the alleged wrongdoer refuses the allegations, then depending

on the reasons, the company can either accept the reasons and set aside the complaint or not accept the reasons and proceed to the next level, i.e., domestic inquiry. 4) in the domestic inquiry stage, the parties will be called upon to a formal investigation in the presence of an inquiring officer. After hearing and cross-examinations by the parties and the inquiring officer, the inquiring officer will give a verdict either claiming the alleged perpetrator as guilty, not guilty or as inconclusive. 5) based on the verdict of the inquiring officer, action can be taken against the perpetrator, declare the perpetrator as not guilty or declare the complaint as set aside. And 6) the relevant disciplinary authority in the organisation can decide the disciplinary action against the employee if he/she was found to be guilty.

A deeper exploration into this common disciplinary process indicates how unsuitable it can be for handling sexual harassment incidents. When the disciplinary process is much dependent on the availability of evidence, sexual harassment is generally accepted to lack evidence as it mostly takes place in privacy and secrecy. If the common disciplinary process is followed, the complaint is more likely to be set aside due to lack of evidence. Further, due to the very sensitive nature of the issue and its harmful impact on the victim, it should be handled with much care. By following the process, on the one hand, the privacy and confidentiality of the parties (which are imperative about handling sexual harassment issues) would be compromised.

On the other hand, the alleged victim will be forced to relate the matter in multiple forums (during preliminary investigation and multiple sittings at the domestic inquiry), exerting more pressure and devastation on the party. Moreover, a lack of evidence can set aside the matter at the domestic inquiry stage. Hence, all in all, the general disciplinary process that many companies follow in handling sexual harassment complaints is unsuitable. As such, companies must have specific procedures developed, keeping the unique and complex nature of sexual harassment in mind. Factors such as justice, due process, legal, human and ethical considerations are protected in the procedures. Further, the process followed is fair to everybody involved (Adikaram & Kailasapathy, 2020) for the effective handling of sexual harassment complaints.

Further, many companies had committees to handle sexual harassment complaints. While having committees have distinctive advantages, there are also pitfalls that companies need to avoid. Lack of training and awareness about what sexual harassment is, lack of awareness of the legal background related to the issue, unawareness of how best to handle complaints, and the conscious and unconscious biases of the committee members can lead to ineffective handling of complaints.

4.2 Auxiliary Strategies

4.2.1 Culture

Many HRPs spoke about creating a culture of zero tolerance, a safe place for women to work, respect, diversity and inclusion, in preventing sexual harassment. HRP11 emphasised the importance of culture in preventing sexual harassment;

For me culture is number one so once you create a culture which recognises good behaviour so people are compelled to behave. It's like a computer system. Even I may have a bad intention but I may control because of the culture. They know the culture does not respect that kind of thing and end results they know.

HRPs also spoke of different ways that such a culture of zero tolerance could be created in organisations. HRP4 stressed the importance of a culture that values diversity and condemns discrimination:

No, no because I think that is where this organisation culture is so valuable. The culture that was coming through which goes on to the extent or change in policies to say that I mean the company changed policies to accommodate, first to accommodate living together cases, then to accommodate same sex marriages, then to accommodate same sex living together, even in expatriation they have gone to that extent. So, this is the psychology so if someone is discriminated or harassed people did not have to think twice to do the right thing.

Another aspect of organisational culture was showing the people that the organisation is serious about sexual harassment issues and punishing the perpetrators. For example, HRP16 stated the importance of harsher punishment for sexual harassment, which would communicate the idea for people that the company is serious about the issue.

Many other HRPs also spoke of the need to punish the perpetrators severely to deter others from similar behaviours. In some instances, termination (or asked to resign) has been the punishment for a comment made, which can be considered a minor act of sexual harassment. These were explicitly done to set an example for others. However, HRPs need to be very careful about how the action is taken as it can also give the wrong message to employees. For example, as HRP2 stated, they terminated both the perpetrator and the victim of a sexual harassment incident to set an example to others.

Now the decision should be an example to the other staff as well, to avoid or stop the future kind of situation like this so that we as a team, myself and the Managing Director and the General Manager plus the lawyer we all come to a decision we need to ask them to leave otherwise we need to sack them because it should be an example to others. It's a serious issue so if we take it lightly then it won't give a good you know example to our current employees. They also might be you know behave same like that so that we decided.

However, rather than setting an example, such an act would deter victims from coming forward and perpetrators to continue their behaviour. Thus, contrary to the intention of the HRP, it works not towards preventing but indirectly perpetrators continuing their behaviour.

4.2.2 Knowledgeable and Capable Hrps or Personnel Responsible for Handling Complaints of Sexual Harassment

HRPs (or the person responsible for handling complaints of sexual harassment) also have a significant role in preventing sexual harassment in organisations. On the one hand, they should support the employees (especially the victims) and the sexual harassment handling process and be ethical in their dealings. On the other hand, they should possess the necessary knowledge and capabilities to handle the issue. These would create trust towards the HRPs.

The HRPs stated how they should be capable of carrying out a fair investigation, especially given that many instances of sexual harassment are complex and ambiguous. For example, HRP26 said,

There are also like the complaint can be entirely false. And the person can be innocent.... That is why investigation part is very valuable. You need all the information. That is up to the HR. to get all the information. All the bits and pieces. To identify whether this is a genuine case. Whether this one is trying to frame another person through a false claim. So that kind. In HR you have to be an investigator as well.

HRP30 stated how important it is to raise the right questions and find the right evidence.

The person who is handling this case should have the skill to get the truth from the person. Without just questioning the person, you have to go with a theory. You have to question and then somehow get the truth. In most cases people say I didn't do that or I didn't think like that, it was not intentional, things like that. So, in the inquiry his answers will depend on the questions we raise. So, the inquiring officer should ask the right questions. If you think that the perpetrator is right, then the questions I raise will also be to prove that he is innocent. But if I think of him as guilty then my questions will be towards that. Then you might be able to get a lot out from the person. So, we need to be fair and non-judgmental. Sometimes, the person can be friendly with me. Then in the inquiry I will have an opinion that this is a false complaint. Then if I question based on that perception, then I will unknowingly be asking questions to prove him right. If I am non-judgmental knowing both parties can be right or wrong then we can get a lot of information.

Another HRP stated how important empathy and support are given to them by HRPs from the moment they contemplate complaining throughout the process. HRP26,

My role would be to comfort the person. To make sure that, she wanted justice. So, to give her that assurance that justice will be served. Saying 'we will make sure justice is served and that you are treated fairly'. According to the HRPs this will make the HRPs be seen as approachable, which in turn will make the sexual harassment issues to come to the notice of the HRPs.

HRP6 had handled a case where the perpetrator was a very senior person. He has even been one of the bosses of the HRP. However, she said that it did not affect how she handled the situation and that she had been stern right throughout.

I have been very, very, very stern and even the Senior Managers like honestly you know someone known to me very personally and even the other HR Manager, I just said that you know, he was trying to sleep with a worker's wife and threatening him, he was in my own team and he was very good, someone whom I would never ever have imagined having this sort of a character and I was very, he still works with me, but I was very, extremely stern with him and had actually given him a time.

Thus, the trust and confidence the HRPs built by being supportive, knowledgeable, ethical and capable will lead to employees trusting the HRPs to do the right thing. In addition, supporting the victim in sexual harassment instances will inevitably act as a deterrent for perpetrators to engage in sexual harassment.

4.2.3 Top Management Which Leads by Example

Another important factor is that the top management of the organisations needs to lead by example. That is, they need to practice what they preach rather than merely paying lip service. As pointed out by HRP11,

I am in this position that the entire organisation expects me to behave in a certain way. I am a Senior member. I am a member within the top ten. So, therefore, I feel that I must be a symbol for others. I must be a symbol for others in all the areas. When I go to a party, even the way I am dressing, my punctuality, my behaviour it matters. Therefore, I feel that all are vigilant right and copying me. Therefore, I must reflect, even when I go to the washroom or when I am walking or when I am talking with other people, I must reflect the appropriate behaviour. Therefore, I have no deviations right, I must be a, I don't like to use the word absolute because I also do mistakes right but I must be a role model for others.

Top management leading by example helps employees learn appropriate and suitable behaviour from them. Top management leading by example also reinforces the organisational culture and norms.

4.2.4 Protective Measures

HRPs have used protective measures such as installing CCTV cameras in order to prevent or deter sexual harassment. Further, they are alert through informal channels and when something is known, alert the manager to be vigilant. As HRP2 said,

We are you know informal communication channels inside the company. So sometimes we are getting inputs especially from the girl's side we are getting here...there is a problem with this manager, they are behaving like this. Likewise, you know inputs are informally gathered, some facts and all...And then we are also aware with this thing and you know pay attention on her behaviour or misbehaviour so based on those you know details also we you know we are taking a decision. At that point, before that point actually we are normally communicating to relevant department and tell him look here there is a problem with him, his behaviour and we are getting some informal complaints please be alert.

These proactive measures and actions by HRPs can also prevent sexual harassment in organisations by deterring the perpetrators from engaging in sexual harassment.

4.2.5 Recruitment and selection

Recruitment of the right people to the organisation is also imperative to prevent sexual harassment, as some HRPs emphasised. For example, HRP11 stated,

Most important is our recruitment. Even though we go to social media and we get that information [about the behaviour of the applicant] to see whether that person is right. So, I consider the recruitment is the critical. For me it's a biased decision. It's like almost marriage, we take the right people for the organisation right so we need that discretion for selection and if we select the inappropriate person as early as possible.

As HRP19 highlighted,

Education levels does not correlate to such behaviour. It's definitely people's attitude related things so it's really hard to change the people's attitudes so we have to recruit people with good attitudes to the company not based on the education level.

In the case of HRP24, he avoids hiring females for the operations level. If there is a need to hire a female, he hires older women as most operational level employees are young males.

And if I put a young female there, obviously... We have hot blooded males in the operations staff. So that's why I have an older female staff, if I need female staff. The operations staff are at the age group of 20-25. So, they call the older females Aunty. Only the qualified younger females are taken to the office staff. In that culture there is less chance of something like that happening. So, to avoid these instances I do these... Even when hiring the male carder, I will take from a reliable source. I will check carefully, for any misbehaviour. I don't take thugs, those who have tattoos, so I very carefully filter them.

Although from the HRP's perspective, these are thought to prevent sexual harassment, such actions are questionable in terms of equal employment opportunity and discrimination based on gender and age.

5. Limitations and Recommendations for Future Research

Our first limitation is that we have relied solely on HRPs. This single-source can weaken the study's trustworthiness to some extent. The victims, witnesses and perpetrators who might have perceptions of preventing sexual harassment were not interviewed. Triangulating this information can increase the trustworthiness of the study. Further, the information shared by the HRPs were retrospective accounts of their experiences. Subsequent events and incidents might have affected their recollections. However, even though these are common limitations in qualitative research, they would inevitably affect our understanding and explanations about the work of HRPs in trying to prevent sexual harassment in their organisations.

6. Practical Implications

Our findings indicate the importance of prevention in combatting sexual harassment in organisations. While in many instances, organisations prioritise handling sexual harassment complaints and instances by following specific procedures and ensuring that the legal requirements are adhered to, we emphasise how prevention is better than the cure. In that, we want to recommend that the HRPs and organisations follow both the primary and auxiliary strategies and practices in preventing sexual harassment, as summarised in Figure 1. We move beyond the commonly explained preventive measures such as introducing policies and providing training and highlight how other factors will play a key role in preventing sexual harassment. Particularly, to combat sexual harassment, organisations need to pay more attention to proper recruitment and selection, creating awareness among top management about the importance of leading by example, taking other measures to assure the safety of employees, and creating a culture that does not tolerate sexual harassment. These measures create a social norm of zero tolerance in the organisations.

Further, HRPs can be given special training and awareness about the issue. Their knowledge of these important issues can be tested during recruitment and selection, as they hold the primary responsibility for eradicating and handling sexual harassment in the workplace. These measures address the attitude and beliefs of the people about sexual harassment, thereby reducing or preventing sexual harassment behaviour in organisations. It should be emphasised that implementing either primary or auxiliary strategies alone will not be enough to prevent sexual harassment in organisations.

7. Conclusion

None of the companies interviewed had a perfect and comprehensive system for preventing sexual harassment, with all of the above-mentioned strategies and aspects being present. The primary and auxiliary strategies and practices identified relate to an individual's planned behaviour process. In order to prevent sexual harassment, an individual's attitude and beliefs about sexual harassment have to be changed. Further, social norms where sexual harassment is not tolerated must be created to prevent sexual harassment in organisations. Hence, we would like to suggest that having as many of

the strategies and practices discussed above as possible would assist companies to prevent and combat sexual harassment more than the companies that do not.

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%2C%20there%20is%20no%20legislation,that%20we%20need%20to%20acknowledge

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Appendix: Company and respondent description

Company	HRP	Company	Position of the interviewee	Sex	Sexual Harassment policy
1	1	Airlines	Compliance Manager	Female	Yes
2	2	Global IT	Head of Administration	Male	No, under code of conduct and disciplinary
	3		HR executive	Female	
3	4	MNC manufacturing	Former HR manager	Male	HR policy
4	5	MNC Global IT	Head of HR	Female	Code of conduct Global ethics committee

		Global IT				
		Local Bank				
5	6	MNC manufacturing	Head of Employee Relations	Female		Code of business principles
6	7	Local Bank MNC bank	Vice President HR	Male		Yes
7	8	MNC manufacturing	HR director	Female		Whistle blowing policy Human rights policy
8	9	Conglomerate	President Group HR	Female		Non-discrimination policy and Code of conduct
9	10	Global IT	Assistant HR manager	Female		Yes
10	11	Sri Lankan bank	Group Learning Officer	Male		Yes
	12		Chief Manager HR	Female		
11	13	Conglomerate	Director – Group HR	Male		Yes
12	14	Conglomerate	Group Head of HR	Female		Yes
	15		GM Group HR	Male		
13	16	Telecom	Head of HR	Male		Yes
14	17	MNC manufacturing	Operations Business Partner	HR	Female	Yes, under anti-harassment policy
15	18	MNC Insurance	Senior Manager – Performance and Rewards	Female		Yes, under anti-harassment policy
16	19	Manufacturing	HRD Executive	Senior	Male	Yes
17	20	Manufacturing	Director HR		Female	Yes, under anti-harassment policy
18	21	MNC Bank	HR adviser/business partner		Female	Yes, under code of conduct
19	22	Financial consultancy	HR manager		Female	No
20	23	Manufacturing	HR executive		Male	No
21	24	Manufacturing	Manager – HR		Male	No
22	25	Hotel	Head of HR		Male	No, in the developmental process
23	26	Hotel	HR executive		Male	No, at the development stage initiated after the incident

24	27	Multinational	HR business partner	Female	Yes
25	28	Multinational	Head of HR	Male	Yes
26	29	Educational institute	Manager Education	Female	No
27	30	Manufacturing	Senior executive - ER	Female	Yes
28	31	Retail – supermarket	Assistant manager – Industrial Relations	Female	Yes
29	32	Group of companies	Chief people's officer	Male	No
	33		Senior Manager – HR	Male	
	34		Training and development manager	Female	
30	35	Information technology	Manager – HR	Female	No

LEARNER BELIEFS AND THEIR SENSE OF SELF-EFFICACY IN CAREER DECISION MAKING

Peiris, J. M. P. M.

Department of Human Resource Management, Faculty of Management Studies, Rajarata University of
Sri Lanka, Mihintale
minolipeiris14@gmail.com

Abstract

English language proficiency has been a subject of controversy in the fields of education and management specifically. It is considered a successful predictor of academic success and career success. English language proficiency has been a primary objective of education administrators in Sri Lanka and other developing countries over the last few decades. Higher English language proficiency is considered a successful predictor of academic and professional success. Students gradually become more focused on making career choices during their higher education. They have to decide upon a suitable university study or an adequate job to engage in at that age, and their career decisions will strongly direct their future career paths. More important than ever is that the English language proficiency of university students compete for knowledge-based and technology-based work. Higher levels of unemployment, lower earnings were linked to low career success among university graduates. The general objective of this study is to investigate the impact of learner beliefs about studying in the English language on career decision self-efficacy among undergraduates and fresh graduates in Sri Lanka. The researcher adopted a quantitative approach as the research methodology. The quantitative approach was used to test hypotheses and to achieve the main objectives. Data was collected through a structured questionnaire. Convenience sampling technique was applied to select the sample, and the final sample consisted of 245 fresh graduates and undergraduates from three state universities in Sri Lanka. The data were analysed using Excel and SPSS, employing correlation, chi-square, and regression. Results from Pearson Correlation Analysis showed a perfect positive relationship between perceived language proficiency and career decision self-efficacy.

Keywords. Analytic learning, Experiential learning, Self-efficacy and confidence, Career decision self-efficacy

1. Introduction

1.1 Background of the Study

English language skills among university undergraduates are more vital than ever as they compete for knowledge-based and technology-based professions. Individuals must be able to undertake non-routine, innovative work today more than ever before if they are to succeed (Robinson, 2010). While abilities such as self-direction, creativity, critical thinking, and invention are not new to the twenty-first century, they are particularly essential in an era when the capacity to excel at non-routine work is not only rewarded and furthermore required (Organisation Economic Co-operation (OECD, 2013). Although enrolment in education is positively associated with a decline in young people's labour market participation, higher levels of unemployment, lower earnings were linked to low career success in university graduates. Attracting workers is a major issue for organisations that employ knowledge workers, people who see task performance characterised by autonomy and responsibility, along with ongoing creativity, learning, and teaching (Drucker , 1999).

A bigger problem than their fear of English is their belief that they are poor English learners (Jabbaifar, 2011). Language learners' beliefs about their ability to learn a language are crucial, and they are also challenging to investigate due to the various factors that influence these perceptions (Alhamami, 2019). Students are always hammered as 'not good enough' learners; therefore, they tend to believe it is difficult for them to succeed in learning English. language's scope and complexity even before the advent of Bandura's (1977) self-efficacy theory in psychology, language scholars have been interested in learners' beliefs about their abilities to master language-learning tasks and achieve higher levels of language proficiency. There is a growing vocabulary of work on self-efficacy beliefs, not only in psychology and also in many other domains such as education, health, and business administration. According to Bandura and Jourden (1991), self-efficacy refers to individuals' beliefs about their ability to accomplish a specific task. Although many studies have explored students' self-efficacy in mathematics, science, and sports, one domain has been surprisingly neglected in language learning (Jabbarifar, 2011; Mahyuddin, et al., 2006). Since language learning has different characteristics from other types of learning, students' self-efficacy when

studying in a second language may vary from other areas and may work differently in influencing their achievement (Pastor, 2014).

Based on this discussion, having a high degree of learner beliefs about English language learning impacts career decision self-efficacy and gives graduates an added advantage, whether in academic or career decision-making. This is because English language proficiency has been well established as one of the important determinants of academic achievement and career development among students. The current study contributes to this relatively unexplored area in the South Asian context that English is used as a second language by studying the impact of learner beliefs about English language learning on career decision self-efficacy among undergraduates in Sri Lanka.

1.2 Problem Statement

Many researchers have identified and suggested the importance of researching factors affecting the career success of university students. Bandura's self-efficacy theory has been adopted by a variety of learning scholars to explore language-learning processes such as language-learning methods (Magogwe & Oliver, 2007; Stracke & Anam, 2016), anxiety (Woodrow, 2011), and learner's attribution (Hsieh & Kang, 2010; Woodrow, 2011). Other researchers looked into the association between language-learning self-efficacy beliefs and language-learning skills, including writing (Pajares, 2003) and listening skills (Graham, 2011). Several research studies have tested the positive relationship between students' beliefs about English language learning and career decision self-efficacy (Alhamami, 2019). Considering the important impact of individual variables on language learning, this study seeks to highlight the relationship between learners' beliefs about language learning and their sense of career decision self-efficacy (Genc et al., 2016).

Many studies have been carried out on this concept of self-efficacy in academic settings. According to Schunk (1995), when students are in activities, they are affected by personal factors such as goal setting, information processing, and situational influences like rewards and feedbacks. These provide students an idea of how well they learn. There has been substantial evidence proving that English proficiency help individuals excel through life transitions starting from school to university and later

into the corporate world in most organisations (Flook, 2019). At the university level, language proficiency is a valuable skill that helps students manage and cope with the demanding nature of the corporate atmosphere. A gap in the research was identified in examining previous research related to relationships between the students' beliefs about English language learning and career decision self-efficacy. The increasing demand for the English language proficiency in higher education as an international language whereby education and cultures are exchanged at all levels, most of the organisations are concerned about this factor to maximise their market effectiveness in multicultural contexts. This study intends to address the above gaps by addressing the research questions: What is the relationship between the concepts of learner beliefs and their sense of self-efficacy in career decision making? Based on the research question, the objectives were to identify the relationship between the concepts of learner beliefs and their sense of self-efficacy in career decision-making.

1.3 Scope of the Study

English language as foreign language learning is almost certainly the subject of many beliefs and convictions among learners, affecting their learning. According to Carroll (1967), learners' aptitudes about learning in a second language can be divided into four categories: analytical learning, knowledge learning, self-efficacy, and trust. There are other beliefs about language learning such as foreign language aptitude, the difficulty of language learning, the nature of language learning, learning and communication strategies, motivations, and expectations (Horwitz, 1987, 1988). Secondly, the self-efficacy theory offered by Bandura (1977) provided a theoretical basis for studying the process of career decision-making and investigating the possible importance of self-efficacy. Hackett and Betz (1981) were the first to apply Bandura's (1977) proposed about self-efficacy to career behaviour in career development. Taylor and Betz (1983) developed the Career Decision-making Self-efficacy (CDMSE) scale to measure these self-efficacy expectations regarding goal selection, occupational information, problem-solving, planning, and self-appraisal. Thirdly, the study will be focusing on Sri Lankan university students and fresh graduates in three state universities.

1.4 Significance of the Study

Firstly, findings from the research would fill the literature gap in this area of study. Despite the evidence of the impact of the learner beliefs about English language learning on career decision self-efficacy in the international context, almost no research has examined learner beliefs about learning a second language and career decision self-efficacy in the South Asian context. This study contributes to filling the above gap. This study contributes to the Career Decision-making Self efficacy (CDMSE) scale developed by Taylor and Betz (1983), by testing hypotheses related to the dimensions of the learner's belief about English language learning. It will strive to assess how English language proficiency contributes to undergraduates' workplace readiness and assist Srilankan state universities in enhancing their capabilities as per the desired level of undergraduates' concern on future employment regarding career decision self-efficacy. A similar study has not been conducted in Srilanka in previous decades and would be a turning point in highlighting the key aspects of the need for English language proficiency as competent undergraduates. The research will provide recommendations that are viable to state universities and any institution in the local context with fresh employees from multi-cultural backgrounds that may be interested in adopting research findings in their institutions.

2. Literature Review

2.1 Learner Beliefs about Studying in a Second Language

Language is our major source of contact. It is the way we share with others our concepts, emotions, beliefs, and thoughts. The value of English cannot be overlooked and ignored in today's global world because English is one of the widely spoken languages. This form of inclination makes it impossible for students to learn English. Some students study English from the exam point of view, so they cannot generate even a sentence without grammatical error. In addition, students are not given enough practice to learn a language. It is the modern world's biggest window. This is even more important because English is the greatest common language spoken universally. The importance of English cannot be denied and ignored in today's global world. (Nishanthi, 2018). According to Gardner (1985), motivation and attitude are the most influential factors in second language acquisition. Language learning is closely related to language attitudes. The focus is on the learners with the paradigm shift from teacher-centric to student-

centric teaching in the present context. With globalisation, English continues to play a distinctive role in Sri Lanka and crossing borders for survival. The ability to communicate in English has become a matter of urgency for all levels of Sri Lankan learners. Developing English skills among undergraduates is a terrible necessity in this context, as they need English for their higher studies and their careers. Students' trust in language learning may influence how they do it.

Further, if students believe they can always get it right, they won't talk until they are completely confident it is right, contrary to language learning research (Horwitz, 1999). Learners concerned with grammatical correctness may become hesitant and lack fluency, and consequently, they might sacrifice communicative effectiveness in using the language their attempt to achieve formal accuracy (Tarone & Yule , 1989). Another perspective is widely recognised that the achievement of education depends not only on the learner's intellectual capacity and skill but also on the learning style of the person (Kolb , 1984). Learner beliefs about language learning can be classified into three types: analytic Learning, Experiential Learning, and Self-Efficacy and Confidence (Alhamami, 2019).

2.1.1 Analytic Learning

Analytical learning is defined as an empirical approach to learning that uses prior knowledge as a basis from which concepts can be defined, theories can be formed, and concepts can be rationally generalised through the study of components and concept structure (Minton, 1993). One of the potential opportunities provided by learning analytics is that teachers may obtain valuable information about successful and unsuccessful learners and thus gain insight into the factors that influence the withdrawal or retention of students. Each and everyone has their preferred way of learning that is determined by our cultural and educational background and our personalities.

2.1.2 Experiential Learning

According to Honey and Mumford (1982), most students with higher degrees and bachelor's degrees preferred active over passive forms of learning since they support learning through participating, exploring, and gaining new experiences. Key elements of experiential learning are, direct involvement of students, active involvement of learners, and opportunities for applied learning based on work (Kendall et al., 1986) According to Kolb (1984), experience plays a key role in human development and

learning. During the learning process, experience is transformed into knowledge. Students engage with and actively participate in work-based experiences through experiential learning, allowing them to apply what they have learned in the classroom to real life. Experiential learning in the form of group education or internships strengthened the curriculum and enhanced learning outcomes for students (Dressler et al., 2011).

2.1.3 Self-efficacy and Confidence

Learners' perceived self-efficacy and beliefs in learning a second language have been important issues in education for the last three decades (Genc, 2016). According to Bandura's self-efficacy theory, self-efficacy is described as beliefs in one's ability to organise and implement the courses of action necessary to achieve certain achievements. Self-efficacy is the personal determination of one's ability to carry out a certain mission. Self-efficacy is a more consistent predictor than any other related variables of behaviour and achievement. Self-efficacy is human agency's most dominant arbiter and has a powerful role in decision making. Moreover, it can be claimed that learning new skills and performing them in authentic situations were much more related to beliefs about self-efficacy than other self-construction (Bandura, 1977).

2.2 Career Decision Self-efficacy

According to Bandura (1977), self-efficacy refers to individual beliefs about a person's ability to successfully perform a task or behaviour. According to his ideology, the expectations that individuals hold in their abilities and the results of their actions greatly influence how they conduct themselves. Self-efficacy is explained in the theoretical framework of social cognitive theory by Bandura (1986, 1997), which asserts that human achievement depends on the interaction of one's actions, personal factors, and environmental conditions. Self-effectiveness helps to assess how much commitment, perseverance, and endurance is placed into a mission. In other words, the greater the sense of success, the greater the commitment, determination, and resilience. Creeds of effectiveness often cause emotional reactions (Mahyuddin, 2006). Individuals with low self-efficacy, for example, feel a mission is challenging and therefore generate tension, frustration, and a narrow vision of how to solve problems. Employability is also related to self-efficacy, the person's self-confidence in their ability to get a job (Coetzee, 2012). The main concern of the concept of self-efficacy is one's trust in one's abilities. Self-

efficacy encourages independent thought, inspiration, and behaviour. According to Sauerman (2005), a career decision is a function of three aspects, the information available to the decision-maker, the career preferences generated partly during the decision process, and the decision strategy, or how information and preferences are combined to choose an alternative. The theory of career self-efficacy was formulated to explain the influence of self-efficacy on career-related behaviours (Betz, 1981).

Measures of self-efficacy can predict behaviour in a variety of domains, such as career decision-making (Betz, 1981). The assessment developers used the Career Maturity Inventory elements to operationalise career decision-making and define specific tasks to assess career self-efficacy. It proposes that individuals who possess both mature attitudes toward the process, and the necessary comprehension abilities, will make career choices that align with their goals (Crites, 1978). He organised these abilities into five competencies: accurate self-appraisal, gathering occupational information, goal selection, making plans, and problem-solving. These five competencies comprise the subscales of the CDSE.

2.2.1 Self-appraisal

Self-evaluation is the process of socially negotiating and modifying the self-concept. Self-evaluation is motivated by a truism of science and culture. Motives affect how people choose self-relevant information, evaluate their truthfulness, draw inferences about themselves, and plan. Empirically focused psychologists have established and researched three cardinal self-motivation motives related to self-examination development, maintenance, and adjustment (Dauenbeimer & Spreemann, 2002).

Self-enhancement is a motivation that works to make people feel good about themselves and keep them motivated against the subjective assessment of an individual's worth. Self-enhancement implies a preference for positive or negative self-examination (Josephs et al., 1992). Further, some people selectively process information that is relevant to themselves, concentrate on information that has beneficial effects for themselves, and ignore information with unfavorable consequences. People also choose to socially compare themselves with others so that they can be put in a good position.

2.2.2 Occupational Information

One of the most important components for making a good career choice is occupational information. The gathering of details regarding occupational and educational options is referred to as occupational information. If a person wants to choose possibilities that meet their interests, values, aptitudes, and talents, they must gather and use vocational information. Details on the work prospects, compensation, related occupations, education and training, and job duties may all be found in occupational information (Shartle, 1952). Occupational information is indispensable. One cannot choose what one does not know, and many occupations are unknown to most of us (Sauermann, 2005). One may stumble into an appropriate occupation by sheer luck, but the wise choice of occupation requires accurate information about what occupations are available, what they require, and what they offer.

2.2.3 Goal Selection

In explaining the impact of efficacy beliefs on selection processes, Bandura (1997) argued that, in addition to the goals selected in a specific activity, efficacy beliefs would also influence the activity that is chosen. Choosing a job direction receives a lot of attention. Many people may experience this since their work is a combination of their beliefs, interests, skills, and abilities that relate to their overall life experience. In the field of job performance, indecision is a major area of study (Germeijs & Boeck, 2002). While job exploration is vital, it is sometimes disregarded until people begin to formally examine career possibilities (Saleem, 2017).

2.2.4 Planning

According to Schermerhorn and John (2002), Career planning is a process where career goals and individual capabilities are systematically matched with opportunities to achieve them. Further career planning is the process of enhancing an employee's future value. A career plan is an individual's choice of occupation, organisation, and career path. It encourages individuals to explore and gather information, which enables them to gain competencies, make decisions, set goals, and act. It is a crucial phase of human resource development that helps the employees make work-life balance strategies.

2.2.5 Problem-solving

According to the Oxford English dictionary, problem-solving ability is defined as the act of finding ways of dealing with the problem. It is the act or process of finding solutions to problems, especially by using a scientific or analytical approach. Further,

the Business Dictionary defines it as the process of working through details of a problem to reach a solution. Problem-solving may include mathematical or systematic operations and can be a gauge of an individual's critical thinking skills. Problem-solving is necessary for every job. Students must develop the skills to resolve problems and have the personal resilience to meet the challenges and pressure that may be the result of a problem. Problem-solving requires a mix of analytical and creative thinking abilities. Which ones are used is determined by the organisation's role and the situation (Shivagunde, 2000).

2.3 The Relationship between Learner's Beliefs When Studying in the Second Language and Career Decision Self-Efficacy

The association between those two concepts is controversial. Some researchers found that learner beliefs about language learning are associated with career decision self-efficacy and some studies suggest that there is no relationship with both variables. Several studies show a positive relationship between self-efficacy and language learning strategies. However, Trinder (2013) has shown how language learning is affected by learners' beliefs as shown in a report based on the responses from an ESL group to an iconic instrument to assess students' beliefs about language learning, Beliefs about Language Learning Inventory (BALLI) (Horwitz, 1999). In Schunk, (1989, 2003), research has linked higher self-efficacy beliefs with positive learning behaviour. Furthermore, research in other academic domains (Usher & Pajares, 2008) has documented substantial variations in how self-efficacy is developed concerning other student characteristics such as gender, prior learning experiences. Taylor and Betz (1983) developed the Career Decision Self-Efficacy Scale to measure an individual's confidence about successfully managing the tasks of career decision-making.

The CDSE is grounded in Bandura's theory of self-efficacy expectations (1977) and Crites' Career Maturity Inventory (1978). Taylor and Betz integrated these two theories to construct a tool that measures self-efficacy as it relates to specific career choice tasks. According to Bandura (1977), self-efficacy can be understood as a psychological belief in a person's ability to master a task, affecting both the initiation and persistence of behaviour. Low self-efficacy can lead to certain behaviours being avoided, while high self-efficacy is more likely to lead to increased behavioural attempts. For an example,

a student who is not confident in their public speaking skills may avoid choosing classes that require presentations, whereas a student who is more certain of that ability may seek out opportunities to use verbal communication skills.

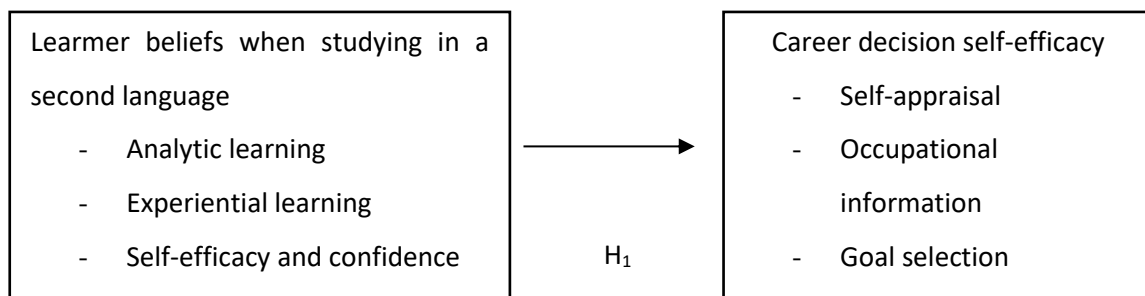
3. Methodology

Here discusses the methodology of the current research model and discusses the conceptualisation of the study through the arguments build upon the literature review. The conceptual framework shows the relationship between the constructs in an illustrative manner. Then the hypotheses presented in the conceptual framework are listed out. Further, this chapter explains the operationalisation of the key concepts, sample, data collection methodology, and data analysis methodology.

3.1 Conceptual Framework

Figure 1

Conceptual framework



(Source: Survey Data)

3.2 Research Hypothesis

H₁: Learner beliefs when studying a second language has a significant impact on their career decision self-efficacy

3.3 Operational Definitions

3.3.1 Learner Belief’s about Studying in a Second Language

According to Bandura (1987), among the types of beliefs that affect action, the most important and pervasive are peoples’ beliefs about their capabilities to effectively deal with different realities. Language learners’ perceptions about the degree to which they have control over the learning process affect learning performance Further, learner

beliefs can be defined as the perception of people towards the learning situation that they are in, and it is also believed that those learner beliefs affect the actual performance of the people in the area that the learning takes place

3.3.2 Career Decision Self-efficacy

Career decision-making self-efficacy is viewed as a causal antecedent to making a career decision, that is, a causal antecedent to being career decided or undecided. Further, it measures an individual's degree of belief that he/she can complete tasks necessary to make significant career decisions.

3.3.3 Operationalisation

Table 1

Operationalisation table

Variable	Dimensions	Indicators	Item	Source
Learner beliefs when studying in a second language	Analytic Learning	The extent to which participant has analytic learning skills	1-12 items in Part 1 of the questionnaire	(Ellis, 2003)
	Experiential Learning	The extent to which participant has experiential learning skills	13 – 19 items in Part 1 of the questionnaire	
	Self-Efficacy and Confidence	The extent to which participant have self-efficacy and confidence	20 - 22 items in Part 1 of the questionnaire	
Career decision self-efficacy	Self-appraisal	Assessing the participants level of confidence on self-appraisal	1 – 5 items in Part 2 of the questionnaire	(Taylor & Betz, 1992)
	Occupational information	The extent to which participants can get occupational information.	6 – 10 items in Part 2 of the questionnaire	
	Goal selection	Assessing the participants level	11 – 14 items in Part 2 of the questionnaire	

	of confidence on goal selection of their career	
Planning	The extent to which participant can plan their future	15 – 18 items in Part 2 of the questionnaire
Problem- solving	The extent to which participants can solve problems.	19 – 23 items in Part 2 of the questionnaire

Source: Survey Data

3.4 Research Approach

The researcher adopted a quantitative approach as the research methodology. The quantitative approach was used to test hypotheses and to achieve the main objectives. There are two broad methods of reasoning in research, such as deductive and inductive strategies. The deductive approach follows the study of how the learner belief's about learning in a second language impact career decision self-efficacy.

The survey is the most popular data collection tool in descriptive research and is usually defined in the collection of data from a large sample by its structured nature. This offers some accurate and concise details that can be interpolated to the community. Conducting a survey is a relatively easy method to administer, as well as economical and efficient in reaching its target population. Therefore, this research has adopted the survey method to collect data

Purpose of the study The current study has focused on assessing the impact of learner beliefs about English language learning on career decision self-efficacy. Learner beliefs about English language learning acts as an independent variable while career decision self-efficacy acts as the dependent variable. Generally, explanatory studies have established a relationship among variables, and such studies have been carried out when the researcher wanted to better understand an issue (Saunders et al., 2009). Thus, explanatory research was designed to conclude the research problem. The population of the study consists of three government university fresh graduates and undergraduates

in Sri Lanka. Sample should be drawn from the best representation of the population for more generalised results. The number of populations is nearly around 10,000.

The researcher used convenience sampling by considering the convenient accessibility and proximity to the researcher. The unit of analysis is the individual level. People who are fresh graduates or undergraduates in the above three universities were taken as the unit of analysis in the study. Primary data was collected from a sample of students who follow undergraduate courses in the University of Sri Jayewardenepura, the University of Colombo, and the University of Kelaniya. The scale measures five aspects of learner beliefs about language learning. (1) Analytic learning (2) experiential learning (3) self-efficacy and confidence. There are 22 items, rated on a 5-point Likert scale from strongly disagree to strongly agree

Career decision self-efficacy was measured with the use of a short form version of a five-item scale developed by (Taylor & Betz, 1992). The scale measures five aspects of career decision self-efficacy, (1) self-appraisal (2) occupational information (3) goal selection (4) planning and (5) problem solving .

3.5 Data Collection

Data was collected through a questionnaire, and it was developed based on existing measurement scales which various scholars already validated. Section two assessed the independent variable, which is the learner beliefs about English language learning. Section three assessed the dependent variable, which is career decision self-efficacy. All the statements in sections two and three were measured on the five-point Likert scale. The first attempt has distributed the questionnaire among seven respondents and amended a few minor changes after getting their feedback. There were 250 questionnaires which were distributed among fresh graduates and undergraduates within three state universities and received data from 220 respondents. After analysing data, it has received data from six respondents.

3.6 Data Entering and Analysis

To interpret research findings and test hypotheses, it has used several statistical methods. Statistical Package for Social Science (SPSS) 26.0 version was used as the

statistic tool to analyse the data. Microsoft Excel was used to draw graphs to visualise research findings. It has calculated mean, median, mode, minimum, maximum, range, variance, and Standard Deviation (SD). The correlation was used to assess the relationship between variables. Further, regression was used to test the impact of learner beliefs about English language learning on career decision self-efficacy.

4. Results, Analysis, and Discussion of Findings

Table 1

Study Response

Total Number of distributed questionnaires	Number of returned questionnaires	Number of not returned questionnaire	Response rate
245	220	25	89.79%

Source: Survey data

Table 2

Gender composition of the sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	102	46.4	46.4	46.4
	Female	118	53.6	53.6	100.0
	Total	220	100.0	100.0	

Source: Survey data

Table 3

Normality of the sample

		Learner Beliefs when studying in the English language	Career Decision self-efficacy
N	Valid	220	220
	Missing	0	0
Skewness		-.889	-.772
Std. Error of Skewness		.164	.164
Kurtosis		-.210	-.259
Std. Error of Kurtosis		.327	.327

Source: Survey Data

According to Pearson correlations, it was computed between learner beliefs about English language learning and self-efficacy. According to Table 5, Pearson Correlation is 0.849, suggesting that there is a perfect relationship between learner beliefs about English language learning and self-efficacy. As the significant value (0.000) is smaller than the desired level of significance (0.05) at a 95% confidential level, the found correlation coefficient (0.849) is statistically significant. So, there is statistical evidence to claim that there is a significant positive relationship between learner beliefs about English language learning and self-efficacy.

Table 4

Correlation

Correlations		Learner beliefs when studying in the English language	Career Decision self-efficacy
Learner beliefs when studying in the English language	Pearson Correlation	1	0.849
	Sig. (2-tailed)		0.000
	N	220	220
Career Decision Self Efficacy	Pearson Correlation	0.849	1
	Sig. (2-tailed)	0.000	
	N	220	220

Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data

Table 5

Summary of Hypotheses Testing

Research Objectives	H	Variables	Data Type	Test	Results	Interpretation
Relationship	H ₁	Dependent Variable – Career Decision Self Efficacy	Scale	Correlation	+0.849 <i>p</i> = 0.000	The significant perfect relationship between Learner beliefs when studying in the English language and Career Decision Self Efficacy
		Independent Variable - Learner Belief’s when studying in the English language	Scale			

Table 6

Relationship between learner beliefs when studying in the English language and career decision self efficacy

Model	R	R Square	Adjusted Square	R	Std. error of the Estimate
1	0.849a	0.720	0.719		0.40475

a. Predictors: (Constant), Learner beliefs when studying in the English language

Source: Survey Data

The purpose of the study was to investigate the impact of learner beliefs about learning in a second language and self-efficacy among fresh graduates and undergraduates in three state universities in Sri Lanka. The results were intended to acquire a better understanding of the relationship between learner beliefs about learning and career decision self-efficacy.

The population of this study was undergraduates who study at three universities in Western provinces. The population consisted of around 10,000 undergraduates, and 245 undergraduates were selected as the sample by using the convenience sampling method. The researcher used a questionnaire to gather primary data needed for the study, and the questionnaire was developed referring to literature related to the subject and questionnaire developed by an earlier researcher.

The researcher adopted a quantitative approach as the research methodology. The quantitative approach was used to test hypotheses and to achieve the main objectives. The collected primary data analysed with the aid of Microsoft Excel. Scores of the variables were calculated using excel. Scores of the variables were added to the SPSS. To analyse data gathered SPSS (Statistical Package for the Social Science) was used. To interpret data analysed and to obtain the result, graphical charts, descriptive statistics, correlation, Chi-Square, regression analysis were used.

Regression analysis was used to identify the significance of the relationship (coefficient analysis) and the degree of the impact of the independent variable on the dependent variable was analysed by using nagelkerke R square value. It was found to be that there is a perfect relationship between learner's beliefs about English language learning and

their self-efficacy. The Pearson correlation between these variables was 0.849, which is significant at 0.000 levels. This was based on two-tailed tests. This correlation was found to be a positive relationship. This regression model was statistically significant. When the 'learner's beliefs about English language learning' score increases by one unit, the odds of self-efficacy increase by 0.849 times. Therefore H₁: learner's beliefs about English language learning have an impact on their self-efficacy accepted.

5. Implications and Conclusion

The research findings provide evidence that undergraduates need to be equipped with higher self-efficacy to allow them to function effectively as students and also effective employees in the future job market since it is noted that having this ability helps potential job candidates to perform academically as well as excel in their career when they embark into the professional world. As per the research findings, it can be concluded that there is a strong positive correlation between learner's beliefs about studying in a second language and their career decision self-efficacy. Based on a result from Pearson Correlation Analysis, it showed that there was a perfect positive relationship between learner beliefs about English language learning has an impact on the career decision self-efficacy. The population selected for the research is too narrow because it is limited to only a few universities in the Western province. Questionnaire responses maybe because they deliberately change the answer. Some students could not take time to read well and answer the questionnaire due to a lack of time in the situation. This study was based on the personal views of respondents through the questionnaire. It may not be effective and becomes biased as the respondents' feelings will be affected. In this research study, the measurement of perceived English language proficiency was a self-report measure of students' perception of their beliefs, not an actual measurement of learner beliefs about language learning. They are self-perceived abilities not actual abilities. It would be valued if future research could assess actual learner belief abilities. As this is a cross-sectional study, the findings may not be valid as time differences can happen. For future researches, a longitudinal study is recommended. Future research needs to observe the long-term effects or longitudinal effects of learner beliefs about language learning on career decision-making. Commonly, only 25% of career decision self-efficacy is impacted by perceived English language proficiency; hence future researchers investigate other 75% of unexplained

factors. The findings of this study undoubtedly have some implications on the student preparation programmes in terms of curricular design and the emphasis on instilling and developing these skills among the student teachers through activities and modules in virtual learning platforms. In this study researcher faced few limitations such as a lack of literature in the Sri Lankan context related to the research problem.

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LEADER-MEMBER EXCHANGE AND INNOVATIVE WORK BEHAVIOUR: THE MEDIATING ROLE OF THE TRUST IN LEADER IN THE NEW NORMAL

H.M.R.D. Kularathne

Department of Human Resource Management, Faculty of Management Studies,
Rajarata University of Sri Lanka
rasanjaliek@mgt.rjt.ac.lk

W.W.A.N. Sujeewa

Department of Human Resource Management, Faculty of Management Studies,
Rajarata University of Sri Lanka

Abstract

The purpose of this paper is to investigate the relationship between leader-member exchange and innovative work behaviour with the mediating role of trust in leader in the new normal condition due to the COVID-19 pandemic. Study adopted quantitative research approach and four hypotheses were developed. Data were gathered through a structured questionnaire and hypotheses were tested by deploying the Pearson Correlation analysis and regression analysis. Results showed that a positive association existed in between leader-member exchange and trust in leader. Leader-member exchange and trust in leader were positively related to innovative work behaviour. Further, trust in leader partially mediated the relationship between leader-member exchange and innovative work behaviour. In terms of originality, trust in leader is considered as an independent construct, even though it is a dimension of leader-member exchange. Further, to the best of the author's knowledge, this study is the first attempt to examine the relationship between -member exchange and innovative work behaviour with the mediating role of trust in leader during the COVID-19 situation.

Keywords. Leader-member exchange, Innovative work behaviour, COVID-19 pandemic and Trust in leader

1. Introduction

The COVID-19 pandemic, which is the recent global health crisis, has disproportionately affected public health, economies and labour markets. People are experiencing uncertain and unexpected levels of disruption in their personal lives, social communities and even their jobs. In line with the World Health Organization (WHO) guidelines, individuals have to restrict public gatherings and work remotely (WHO, 2020). This situation brings new challenges to the workplace such as remote work, teamwork dynamics, communication modes, personal anxiety, attitude changes, e-leadership and IT knowledge and practice (Mukhopadhyay & Mukhopadhyay, 2020).

Organisations should be a trusted party for employees while addressing the workforce's needs during this virtual world of work. (Emmett et al., 2020). It has been stated that remote working during COVID-19 is not the normal remote work practised earlier (International Labour Organization, 2020; Mukhopadhyay & Mukhopadhyay, 2020). Virtual work platforms have created a space for various innovations such as new systems, new software, tools, accessories, new applications, etc. Tang and Li (2021) have stated that innovative work behaviour is one of the aspects of essential employee behaviour at the workplace during a catastrophe situation. Darwish et al. (2020, p. 1929) have stated the need for innovations during a crisis as Critical times bring innovation, which serves as a critical lifeline for businesses in particular The relationship between the leader and the employee (leader-member exchange) affects s employee's level of innovative behaviour (Zhang et al., 2012).

On the other hand; it has been stated that employee engagement has fallen by 16% since the pandemic (Gino & Cable, 2021). When employees work at home, they associate with both working pressure and work-life conflict. As a result of digitalised work practices, employees tend to detach from the organisation. o engage workers in the workplace, trust in leaders plays an enormous role in vertical teams (Turesky et al., 2020). Therefore, building trust during the new normal work setting is salient. Further, it has been found that innovative work behaviour (IWB) is affected by the employee's trust placed upon the organisation. literature has investigated that the trust in a leader mediates the relationship between LMX and IWB (Taştan & Davoudi, 2015).

At the same time, a recent study states that software companies have limited empirical evidence on how to support their employees through this pandemic (Ralph et al., 2020). Most ' software developers' work interrupt their personal lives through working 24/7 with unpaid overtime, exhaustion, sleeplessness, etc. (Ralph et al., 2020). They have further stated that software developers are influenced by their emotional stability to be innovative. However, COVID-19 affects emotional stability critically (Kularatne, 2020). Software s' developer's innovative capacity is in the deed during the prevailing virtual world of work where all competitors attempt to bring novelties to the market. , The information technology (IT) industry in Sri Lanka has been recognised as a shining beacon of resilience against COVID-19 by catering to the global demand for digital transformation and upskilling talent (SLEDB, 2021). Sri Lanka's IT industry is serving more than 85,000 employment opportunities, with more than 400 companies reporting 13% employee growth and export revenue of US\$ 968 million in 2017 (SLEDB, 2021).

Within this background, the researcher identified an empirical gap in the Sri Lankan context. This study is carried out to examine the relationship between leader-member exchange and innovative work behaviour of employees in the IT sector with the mediation role of trust in a leader during the COVID-19 pandemic.

2. Literature Review

2.1 Leader-Member Exchange

Leader-Member Exchange is derived from Social Exchange Theory, originally introduced in 1964 by Homans to conceptualise how social units interact as an exchange process (Suhaimi & Panatik, 2016). Reciprocation can be identified as the essence of this social exchange theory. one person would like to give when they are benefited in return (Tarver & Haring, 2009). Social exchange theory was combined with leadership by Blau (1964) and Hollander and Julian (1969) to explain the dynamics of leader-member relationships, interdependencies and mutual influence of one individual on another. Leader-member exchange (LMX) describes the relationship between the leader and the subordinate along with respect, affection, loyalty and contribution.

LMX construct has grown around the supervisor and the employee (Agarwal et al., 2012). High-quality relationships between the leader and the follower bring several

desired outcomes for both parties, including higher job performance, creative work behaviour, employee motivation and lower turnover rates and group-level performance (Agarwal et al., 2012; Olsson et al., 2012; Sanders et al., 2010; Zhang et al., 2012). On the other hand, low-quality LMX promotes destructive, exploitive and abusive work behaviour, affect the psychological well-being of employees (Mitchell et al., 2012; Taştan & Davoudi, 2015). Apart from these, some studies have focused on the underlining of the mechanism of LMX theory among the reciprocal nature of relationships (Martin et al., 2016; Thrasher et al., 2020).

2.2 Innovative Work Behaviour

Innovative work behaviour has been defined in various forms by different authors in the literature. In 1989, West and Farr defined innovation as "the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures" (Alsughayir, 2017, p.190). Innovative work behaviour was defined as an individual's behaviour that aims to achieve the initiation and intentional introduction (within a work role, group or organisation) of new and useful ideas, processes, products or procedures" (De Jong & Den Hartog, 2010, p. 24). When the organisation be innovative, they are more likely to gain a sustainable competitive advantage over their rivals.

Thus, employees need to show innovative behaviour or employee's innovative capacity needs to be encouraged by the organisation to innovate new products, services and processes (Oukes, 2010). As per the study done by De Jong and Den Hartog (2010) to develop a measuring scale, innovative behaviour ranges from initiation of innovation to its implementation. Accordingly, innovative work behaviour has three dimensions: (i) Idea exploration, (ii) Idea generation, and (iii) Idea implementation. Innovation by individuals often begins with exploring an idea, like looking for improvements on current products, services, and work processes or trying to think about them in new ways. Next, the idea is generated, which means generating concepts related to new products, services, work processes, the entry of new markets and the like for improvement. After that, the idea is implemented. During this stage, new products, services, work processes, and such are developed, tested, and modified (De Jong & Den Hartog, 2010).

2.3 Leader-Member Exchange and Innovative Work Behaviour

Several studies have confirmed that LMXLMX could elevate the individual and team innovation could elevate the individual and team innovation (Agarwal et al., 2012; Alsughayir, 2017; De Jong & Den Hartog, 2010; Javed et al., 2019; Khan et al., 2020; Martin et al., 2016; Ratnasari & Wulansari, 2019; Sanders et al., 2010; Suhaimi & Panatik, 2016; Oukes, 2010; Xerri & Cross, 2012). The study conducted in the Saudi hospitality sector has found that LMX is an essential antecedent of IWB (Alsughayir, 2017). The study conducted to examine the antecedents for IWB of nurses have found that LMX and organisational support are predictors of LMX (Xerri & Cross, 2012). It has been found that individual and team performance can be enhanced by having a quality leader-member relationship and informal leader emergence (Zhang et al., 2012).

LMX has been identified as one of the affecting factors to lead IWB with the mediation of employability and moderation of firm performance (Stoffers et al., 2014). In contrast, however, some the studies have found less significant of LMX on IWB (Lee, 2011; Taştan & Davoudi, 2015). Some studies have been conducted to find out the reason for these contradictory study findings. It was found that work engagement, trust and Another study found that employees engaging in IWB are expected to spend more time on non-routine tasks to think out of the box and propose a novel and practical ideas to improve existing organisational processes. They want freedom and a less restricted environment to flourish their creative abilities (Tang & Li, 2021). Thus, the hypothesis is developed as follows:

H₁: Leader-member exchange is positively related to employees' innovative work behaviour during the COVID-19 pandemic

2.4 Trust in Leader as the Mediation in between LMX and Innovative Work Behaviour

Trust is defined as a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another" (Dirks & Ferrin, 2002, p. 613). As a commonly used definition for trust, "an individual's belief in, and willingness to act on the basis of the words, actions and decisions of another can be indicated (Scandura & Pellegrini, 2008). Dirks and Ferrin (2002) have further explained trust in leadership has two referents: the direct leader (supervisor or manager) or organisational leadership. Behavioural outcomes are influenced by both supervisory

level and organisational level trust. However, they have argued a question yet not addressed by researchers: whether trust in the leader is a dimension of social exchange theory. Correspondently, it was found that some studies have conceptually and empirically separated trust in leadership from LMX (Scandura & Pellegrini, 2008)

The trust has been taken as the mediator in several studies (Bayhan Karapinar et al., 2016; George, 2020; Khan et al., 2020; Li et al., 2019). The study conducted by Li et al. (2019) has found that the trust in leaders significantly mediated the relationship between transformational leadership and innovative work behaviour in multinational companies in China (Li et al., 2019). Another study has tested the mediation effect of organisational trust on the relationship between the areas of work-life and emotional exhaustion of academics in public universities in Turkey (Bayhan, Metin and Tayfur, 2016). Bartram and Casimir (2006) have found that the trust in a leader has partially mediated the relationship between leader-follower in-role performance and satisfaction with the leader.

Further, Taştan and Davoudi (2015) have demonstrated that high-quality dyads with employees enhance their trust in supervisors. They further found that building trust as a virtual leader cannot be done by taking someone out for lunch or dinner after work. Innovative ways, including a weekly video blog, social networking applications, video conferencing systems, are needed to build personal levels of trust in the leader. Being present is vital for a remote manager to maintain employee trust, which emphasises the need for a leader-member virtual exchange. Besides, (2002) have depicted that relationship attributes, follower attributes, and leader actions generate the leader's trust, which lately affects several behavioural outcomes including organisational citizenship behaviour: innovative work behaviour, job performance, goal commitment, satisfaction and etc. A recent study has taken perceived trust as the mediator between relational age and leader-member exchange and found that perceived trust related to LMX positively and mediated the relationship. They have pointed out that high-quality LMX can be expected (Gupta et al., 2020). Thus, hypotheses are developed as follows:

H₂: Leader-member exchange is positively related to the trust in the leader during the COVID-19 pandemic.

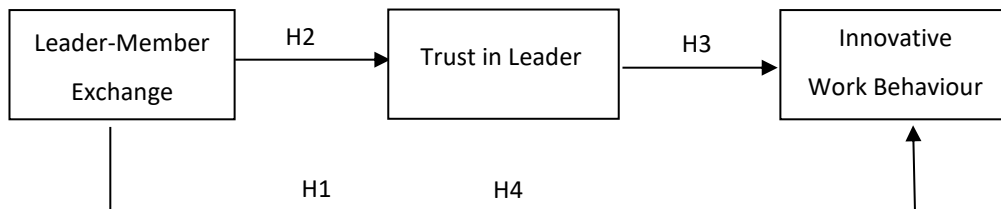
H₃: Trust in leader positively relates to the innovative work behaviour of employees during the COVID-19 pandemic.

H₄: Trust in leader mediates the relationship between leader-member exchange and employees innovative work behaviour during the COVID-19 pandemic.

Based on the literature review, the conceptual framework is developed and illustrated in Figure 1.

Figure 1

Conceptual Framework



Source: Author Complined

3. Methodology

This study is quantitative and explanatory, which is under the positivism research philosophy since the main objective of this study is to find out the impact of LMX on IWB with the mediation of trust. The research strategy of this study is the survey methodology. The population of the study consists of 130 executive software engineers in the information technology industry in Central Province in Sri Lanka, and 98 is taken as the sample size by using a simple random sampling technique. A structured questionnaire was used to collect primary data. The questionnaire consisted of two sections: the first section consisted of questions related to demographic variables of respondents, including demographic variables as age, gender, and marital status, education, working experience, and working hours per week, while the second section included questions related to leader-member exchange, innovative work behaviour and the trust. The questionnaire was distributed as a google form among the sample of 98 virtually. However, 78 questionnaires were received completely, and the researcher did not receive 08, while 12 were not fully responded.

IWB was measured using a 10 item measure originally developed by Lukes and Stephan (2010) on a five-point Likert scale (1=Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree). LMX was measured using the 12-item five-point Likert scale developed by Joseph, Newman, and Sin (2011) on a five-point Likert scale (1=Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree and 5=Strongly Disagree). Trust in leader was measured using the 16-item five-point Likert scale; (1=Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree and 5=Strongly Disagree) developed by Tzafrir and Dolan (2006). A pilot study was conducted by taking 20 respondents from the selected sample of 98, including 10 females and 10 males, to ensure the reliability of the questionnaire. For this study, Cronbach's Alpha value was stated as 0.821 for LMX and 0.851 for IWB and 0.792 for trust which meant the measures were reliable.

4. Results

Pearson Correlation analysis, regression analysis and Baron and Kenny's Method for Mediation was conducted to test the hypothesis. As per Table 2, It can be stated that the Pearson correlation value between LMX and IWB is 0.698, which is significant at 5% ($p = 0.047$). Thereby, a positive association exists between LMX and IWB. Then H_1 is accepted. The Pearson correlation value between LMX and trust is 0.544, which is significant at 1% ($p < 0.000$). Thereby, a positive association exists between LMX and trust. Therefore, H_2 is accepted. Finally, the Pearson correlation value between trust and IWB is 0.781, significant at 5% ($p < 0.001$). Thereby, a positive association exists between trust and IWB. It can be stated that H_3 is accepted (refer to Table 2).

Table 3 shows the regression analysis results to test the mediation effect of trust between LMX and IWB. As per the results, it denotes a positive effect by LMX on the trust ($\beta = 1.258, p < 0.05$) and a positive effect by trust on IWB ($\beta = 0.782, p < 0.05$). While the direct of LMX on IWB is generated as $\beta = 3.924 (p < 0.01)$, indirect effect of LMX on IWB through trust is recorded as $\beta = 0.521 (p < 0.05)$. Hence, it can be concluded that the trust partially mediates the relationship between LMX and IWB. Accordingly, H_4 is accepted.

Table 2*Pearson Correlations, Mean and Standard Deviation of Variables*

	LMX	Trust in leader	Mean	SD
LMX	-	-	3.2	0.722
Trust in leader	0.544*	-	3.5	0.621
IWB	0.698**	0.781*	3.4	0.532

Note: N=78, LMX – Leader-Member Exchange; IWB –Innovative Work Behaviour
*p < 0.01, **p < 0.05

*Source: Survey Data***Table 3***Regression Analysis and Mediation Analysis*

Independent Variable	Dependent Variable		The indirect effect of LMX on IWB through Trust in leader
	Trust in leader	IWB	
LMX	1.258*	3.924**	0.521*
Trust in leader	-	0.782*	

Note: N=78, *p<0.05, **p<0.01
LMX – Leader-Member Exchange; IWB –Innovative Work Behaviour

Source: Survey Data

5. Discussion and Conclusion

As the study findings, it is found that LMX is positively related to trust in the leader during the COVID-19 pandemic. Recent study findings support this finding (Taştan & Davoudi, 2015; Martin et al., 2016). Next, it is found that the trust in the leader makes a positive association with IWB during the COVID-19 pandemic. This is similar to previous study findings (Aryee et al., 2002; Hughes et al., 2018; Khan et al., 2020). Further, it was found that IWB can be increased by 3.924 when LMX increases by one unit in a certain time. When compared to the ear before COVID-19, it has found that LMX is an important antecedent that determines IWB (Sanders et al., 2010; Agarwal et al., 2012; Alsughayir, 2017; Li et al., 2019; Ratnasari & Wulansari, 2019). The study conducted by Oukes (2010) has summarised the determinants of IWB with five categories: personal, job, team, relationship, and organisational. Among these, LMX is one of the factors belong to "relationship category, while all other categories have leadership (indirectly) related factors (Oukes, 2010). With that fact, the findings of this study can be further strengthened as LMX positively accelerates the IWB of employees.

In conclusion, the leader's trust partially mediated the relationship between LMX and IWB during the COVID-19.

6. Limitations and Future Research Directions

As the study limitations, it can be stated that applying findings outside of the research context is impossible since this study was conducted in the IT-BPM sector. Further, the accuracy of data gathered through the online surveys is hard to assure since software engineers might not take enough time to read and answer the questions during their busy work schedules. The discussion of these limitations ideally leads to some suggestions for further research. Future researchers are encouraged to investigate the IWB of employees in the light of COVID-19 from different perspectives in different sectors in Sri Lanka since scholarly work in this regard is lack. Besides, future research work should be designed in a qualitative approach to assure the accuracy of data gathering.

7. Implications

Since this study was conducted by taking the population in the IT sector in Sri Lanka, study implications for the IT industry can be drawn as follows. First, the IT sector can build and maintain the trust of employees in the employer to visualise innovative work behaviours from them. Second, the IT sector can implement a communication mechanism to show that they fairly treat their employees during this crisis. Then, employees will place their trust in the organisation and will work productively. Implications for researchers include that this study generated a new finding. Thereby, future researchers can utilise this knowledge to investigate more researchable areas during the COVID-19.

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**THE IMPACT OF EMOTIONAL INTELLIGENCE AND
QUALITY OF WORK-LIFE ON ORGANISATIONAL
CITIZENSHIP BEHAVIOUR: WITH SPECIAL REFERENCE TO
THE NON-MANAGERIAL EMPLOYEES IN COLOMBO
DISTRICT GOVERNMENT BANKS**

Dissanayake, D.F.

Department of Management Sciences, Faculty of Management, Uva Wellassa University, Badulla, Sri
Lanka
fiushani.d0717@gmail.com

Wachissara, P.

Department of Management Sciences, Faculty of Management, Uva Wellassa University, Badulla, Sri
Lanka

De Silva, P.O.

Department of Management Sciences, Faculty of Management, Uva Wellassa University, Badulla, Sri
Lanka

Abstract

Organisational Citizenship Behaviour (OCB) is an emerging concept influencing organisational effectiveness and success, has been the object of attention from scholars since the last decade. Organisational citizenship behaviour plays a crucial role in the service sector and in the banking sector. The quality of work-life and emotional intelligence as the cannons of OCB act as the most influential factors in organisational effectiveness. However, the extant literature in this context is fragmented and limited. Therefore, the study investigated the impact of emotional intelligence and quality of work-life on OCB . Accordingly, the study evaluated the perceptions of 150 employees who worked in state banks in Sri Lanka employing a quantitative research design. A self-administered questionnaire designed to measure the key constructs was distributed among the study sample following the convenience sampling technique. The gathered data were analysed incorporating Partial Least Square – structural equation modelling through PLS path modelling and SPSS. The findings ascertained a significant relationship between the quality of work-life, emotional intelligence, and OCB. Moreover, quality of work-life is determined as the most influential variable in

establishing OCB. Thus, the study recommends a regulatory and policy framework to encapsulate these elements into OCB.

Keywords. Banking sector, Emotional intelligence, Organisational citizenship behaviour, Quality of work-life

1. Introduction

The banking sector is the dominant sub-sector within the financial sector. It plays a positive and important role in the overall development of the country. The Bankers journal indicated that the performance of the banking sector directly affects the other industrial and service sectors of the economy (Kappagoda, 2012). Human Resource is essentially important because the business performance of the banking sector is largely dependent upon high-quality services (Naeem et al., 2008), and the effectiveness and success of the organisation depend on the quality and performance of employees that work in the organisation. To attain higher performance, employees need to keep up positive citizenship behaviours within an organisation (Susmiati & Sudarma, 2015). Therefore, human effort and emotional intelligence are important determinants of service quality and the OCB (Welikala & Dayarathna, 2017). Quality of work-life can also lead to enhanced service quality and citizenship behaviour within a workplace. There has been a growing investigative interest in constructive organisational scholarship in recent years (Alfonso et al., 2016), and an increasing number of studies have examined OCB. As for the antecedents of OCB, numerous studies have identified dispositional predictors. But, despite the emerging literature, limited research has yet considered how emotional intelligence and quality of work life affects OCB and how they both might interact with OCB. Thus, the aim of this study is to investigate the impact of emotional intelligence and quality of work-life on OCB of non-managerial banking employees.

Most determinants of the OCB such as job satisfaction (Brown, 1993), organisational commitment (Allen & Meyer, 1996), leadership style (Dissanayaka et al., 2010) and emotional intelligence (Korkmaz & Arpac, 2009) were consistently found to predict OCB across non-banking financial institutions. Also, there are only a few studies related to the work-life quality on OCB (Rose et al., 2006). According to past literature,

only a few studies have considered how emotional intelligence and quality of work-life affects OCB, and how they both could interact with OCB. Further, Delewicz and Higgs (2000) also pointed out that not enough attention has been paid to those two concepts in an organisational context. Hence, there seem to be limitations in conceptualising OCB, and contradictory results provided in the extant literature fuels knowledge and empirical gap. Thus this research intends to address the following objectives:

- To investigate the impact of emotional intelligence on OCB of non-managerial employees in government banks.
- To investigate the impact of quality of work-life on OCB of non-managerial employees in government banks.
- To identify the most impacted variable on OCB of non-managerial employees in government banks.

2. Literature Review

2.1 Emotional Intelligence

Emotional intelligence is one form of human intelligence. Emotional intelligence refers to a person's ability to be self-aware, recognise emotions in others, and control emotional cues. Different models have been introduced for the definition of Emotional intelligence. Emotion and intelligence were separately studied in the 1990s and the ability of an individual was regarded as rationality ability and emotional ability (Sharma & Mahajan, 2017). A variety of personality theories have considered emotional stability as a very important personality trait. Different models have been proposed for the concept of emotional intelligence, and disagreement exists as to how the term should be used. The earliest origins of emotional intelligence can be traced to Darwin's work on the importance of emotional expression for survival and adaptation within the organisation.

According to Freshman and Rubino (2002), intellective intelligence is defined as a set of skills and defined non-intellective as social-emotional skills. Thereafter, they redefined non-intellective intelligence as affective and connective abilities related to a person's attitude and behaviour and resistance to change (Khosravi et al., 2011). Thorndike's 1920 and later on in 1940 Wechsler's research remained insignificant till Howard Gardner offered the theory of "multiple intelligence" in 1983. He mentioned

seven aspects of intelligence as cognitive ability, math, kinaesthetic, and spatial, musical talent, verbal and communication.

Later on, in 1990, two psychologists, Peter Salovey and John Mayer first introduced emotional intelligence. They developed the ability model of emotional intelligence. They redefined emotional intelligence as “the ability to perceive, appraise and express emotions accurately and adaptively; the ability to understand emotions and emotional knowledge; the ability to access and generate feeling where they facilitate cognitive activities and adaptive actions; and the ability to regulate emotions in oneself and others” (Mayer et al., 2004). Goleman (2000) states emotional intelligence is the ability to recognise our feelings and the feelings of others, the ability to motivate ourselves, and the ability to manage emotions well in ourselves and relationships with others.

As mentioned above Goleman (2000), has observed the concept of emotional intelligence. Organisations too showed increasing attention on emotional intelligence, where they had been looking for changes in the dynamic environment and build and adapt new competitive advantages in their field of operation. It seems that there are only limited studies on the relationship between emotional intelligence and its impact on the corporate world (Dulewicz & Higgs, 1999). Goleman’s model of emotional intelligence introduced in 1998 outlined 5 main Emotional Intelligence build and 25 competencies. Subsequently, Goleman and Boyatzis (2000) introduced four dimensions of emotional intelligence with 20 competencies instead of 5 dimensions of emotional intelligence with 25 competencies. Those dimensions are self-awareness, self-management, social awareness and relationship management. With these dimensions, researchers could measure emotional intelligence and its impact on OCBs.

2.2 Quality of Work Life

The evolution of Quality of Work Life (QWL) began in the late 1960s, emphasising the human dimensions of work that focused on the quality of the relationship between the worker and the working behaviour (Rose et al., 2006). Work life quality is a process by which all employees in an organisation interfere in decisions influencing their jobs and work environment generally through suitable communicational channels prepared to increase the willingness of work (Ziauddin & Naroei, 2013). The most formal

definition of work life quality by Walton is presented as: “work life quality includes abilities of people in the organisation to meet their personal important needs in the organisation by their experiences (as cited in Kharazian, 2007). Quality of work life is a wide aspect of Human Resource Management. QWL has positive relations with performance and developing human capabilities and behaviour in the work organisation (Beh & Idris, 2006). Quality of work life among workers working in an organisation will lead to better results for the workers’ behaviour. The management’s valuing of the workers with high commitment and positive work attitude would contribute greatly in favour of the organisation’s success. Quality of work life facilitates employees to manage their personal life as well as their organisational life. According to the Walton, there are eight main components of work life quality and they include, adequate and fair compensation, safe and healthy working conditions, immediate opportunity to use and develop human capacities, opportunity for continued growth and security, social integration in the work organisation, constitutionalism in the work organisation, work and total life space and social relevance of work life (Wyatt & Wah, 2001).

2.3 OCBs

OCB is a person’s voluntary engagement within an organisation that is not part of that person’s contractual tasks or responsibility. Bies (1989) stated the concept of OCB is anything that employees select to attain, sensible and of their consensus, which over and over again lies separate from their definite predetermined responsibilities (Based, 2017).

Podsakoff et al. (2009) described OCB as a concept that includes anything affirmative and positive that workers engage in and prefer to engage within the organisation, which helps co-workers and supports the organisation. Generally, workers who repeatedly participate in OCB may not be the high performers (nevertheless, they could be, as job presentation is connected to OCB). However, they are the individuals who are recognised to ‘go the additional mile’ or ‘go overhead’ and ‘beyond ‘the lowest efforts compulsory to do only acceptable work.

Therefore, any organisation will get advantages from encouraging workers to participate in OCB, as it has been revealed to upsurge efficiency, productivity, and

consumer gratification, and decrease prices and proportions of incomings and absenteeism.

According to Beteman and Organ (1988), there are several measures of OCB domains and they include, altruism, conscientiousness, loyalty, civic virtue, voice, functional participation, sportsmanship, courtesy and advocacy participation (Kappagoda, 2012). However, there are five categories of OCB that are frequently recognised in research (Lepine et al., 2002), they are altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Sharma & Sangeeta, 2014).

Most studies examining the structure of OCB have considered that it is a multidimensional concept (MacKenzie et al., 1998; Organ, 1997). For example, Graham (1989) has proposed a four-dimension model of citizenship behaviour of the organisation consisting of interpersonal helping, individual initiative, personal industry, and loyal boosterish. Interpersonal helping involves helping co-workers in their jobs when such help is needed. Individual initiative is communicating to others within the workplace to improve individual and group performance, and the personal industry includes the performance of specific tasks above and beyond the specified duty. Finally, loyal boosterish involves the promotion of the organisational image to outsiders (Moorman et al., 1998).

2.4 Banking Sector

Today's banks operate in highly uncertain and competitive global markets that require employees to reveal complex and multidimensional thinking or linear thinking skills and more modes such as insight, emotional assessments, creative thinking, intuition, and perceptual flexibility. Competitiveness refers to the bank's flexibility and ability to maintain or to improve the position within the changing environment in a particular market. It shows the bank's position in the banking industry. Further, it is possible to evaluate the bank's overall performance and compare it with other players in the local and global market. By competing, the banks use their capabilities and effective resource management as well as their effective behaviours and quality of the work-life for higher performance. This study attempt to understand the impact of emotional intelligence and quality of work-life on OCB and its relevance to the government banking sector.

The banking sector is a service trade where the performance is assessed based on the number of clients who maintain accounts with the bank and receive greater client service. Therefore, the task of the service workers is very important, especially those whose location is in the front, as non-managerial employees, and they are likely to play the main role in accomplishing corporation services (Gitonga, 2012; Shanka 2012). So, this study investigates the significance of OCB and the influence of emotional intelligence and quality work-life on OCB in the banking sector. This study will also provide a conceptual framework for the relationship between OCB and emotional intelligence and quality of work life (Weerasinghe et al., 2017)

Similar to the sectoral composition of other Asian countries, Sri Lanka's economy comprises the agricultural, industrial and the service sector. In the service sector, the Sri Lankan banking sector tend to provide the highest contribution . However, the banking sector is growing rapidly and provide great opportunities for employment. However, the emotional intelligence of bankers and psychological problems such as stress, strain, anxiety have not been given much attention. Empirical observations reveal that work overload, strict time pressures for work completion, long working hours and long travel hours, fear of termination of job contract, etc., are very usual issues experienced by employees in the banking sector.

According to Pahuja and Sahi (2012) the bank employees suffer from an extremely high level of stress. Although the researchers have produced many programmes to prevent stress and improve emotional balance among employees in developed countries, they are lacking in developing countries like Sri Lanka. In Sri Lanka, the numerous reform programmes are limited to improve the innovation of new products or concepts, improve the building infrastructure, promotion of modern practices etc., but they are yet to start any reform programme, which is relevant to employees' psychological problems. The banking sector is the mainstay of any economy, so this study investigates the concept of emotional intelligence among banking employees and their work life quality.

2.5 The Linkage between Emotional Intelligence and OCB

Radford (2010) expresses that emotional intelligence is more important because it can help employees understand and manage their emotions, as well as others' emotions. Thus if the employee can manage their own emotions, their work behaviour will be improved. Carmeli and Josman found a linkage between Emotional Intelligence and OCB (Butt et al., 2017). According to Ng et al. (2014), limited studies are conducted to examine the linkage between emotional Intelligence and OCB. Some researchers found that there is a significant relationship between emotional intelligence and OCB. Chehrazi and Shakib (2014) revealed that, when employees can manage self-emotion, they have high citizenship behaviour. But another study stated a low relationship between EI and OCB (Hanzaee & Mirvaisi, 2013). Apart from that, Haider (2015) also advocated that EI has a low impact on OCB. Besides, Somayehadabifirozjaee (n.d.) indicates that there is a positive and moderate relationship between emotional intelligence and OCB. Also, Tofighi et al. (2015) commented that there is no relationship between emotional intelligence and organisational behaviours. Thus there are inconsistent findings on the impact of EI on OCB. But according to Gitonga (2012), emotional intelligence will impact the OCBs.

Thus, understanding a person's own emotions and others' emotions will greatly affect the effectiveness of the organisation behaviour, especially in the banking sector because their aim is to provide valuable service to their clients or customers. To achieve that aim or objective, bank employees should manage their behaviour within the organisation. They should understand their feelings, peers' feelings, and the customers' emotions to behave within the organisation without having conflicts (Welikala & Dayarathna, 2017). Thus specifically, this research focuses on reviewing the empirical studies that were conducted to examine the impact of emotional intelligence on organisational citizenship behaviour in the banking sector.

Many consumer-facing organizations perform poorly on the front office employees. Their employees should make use of emotional intelligence, those few interactions when the customer feels strongly about the outcome. As a service provider, banks are involved with activities such as receiving financial advice and negotiating mortgages as opposed to more mundane matters. Since banking employees highly interact with

customers, because of that, they should manage their emotions as well as need to understand others emotions to behave effectively within the workplace.

Since the perceptions of individuals within the organisation have about the overall environment within the organisation it will be affected by the employees' ability to manage, understand, control and balance their emotions as well as other's emotions. This is evident from the results of the study. The banking sector scenario is rapid dynamic and ever-changing. One of the large banks in this study to improve the consumer base needs to access smart and efficient solutions to manage their financial needs, and they have devised valuable services to their customers.

Their focus is on leveraging technology to make banking more accessible and convenient to their customers, through continuous innovations across banking touch points such as Cash Deposit Machines (CDMs), Automated Teller Machines (ATM), internet banking, mobile banking, and call centres.

Thus they have made financial transactions faster, more secure, and simpler. Their focus on innovative technology to offering convenience through technology-led solutions is a reinforcement of their commitment towards continuously improving and deepening their relationship with their customers. Training in new skills is, of course is important. Nevertheless, it is more important for the workforce to sustain the attitude of change and always be prepared to put in efforts to ensure success as well as withstand failures. This behaviour can be maintained only by emotionally balanced employees within the organisation (Nair, 2012)

2.6 Quality of Work Life and OCBs

A worthwhile appraisal of the job environment and opportunities will bring a feeling of psychological well-being at workplace, while a negative appraisal creates dissatisfaction. Beyond the intrinsic motivation aroused by dispositional variables like personality, self-esteem, emotional intelligence, and etc., environmental variables can impact the appearance of citizenship behaviour in the workplace. As Organ et al. (2005) stated, employees might feel that they owe OCB to others (their leader or co-workers), to the organisation, that they have a moral obligation and or that it is expected of them

based on social norms. As regards the links between quality of working life and organisational citizenship behaviour, the most supported idea is that the quality of working life is more specifically to job satisfaction; it may affect the citizenship behaviour of the organisation.

2.7 Importance of Behavioural Dimensions in a Bank

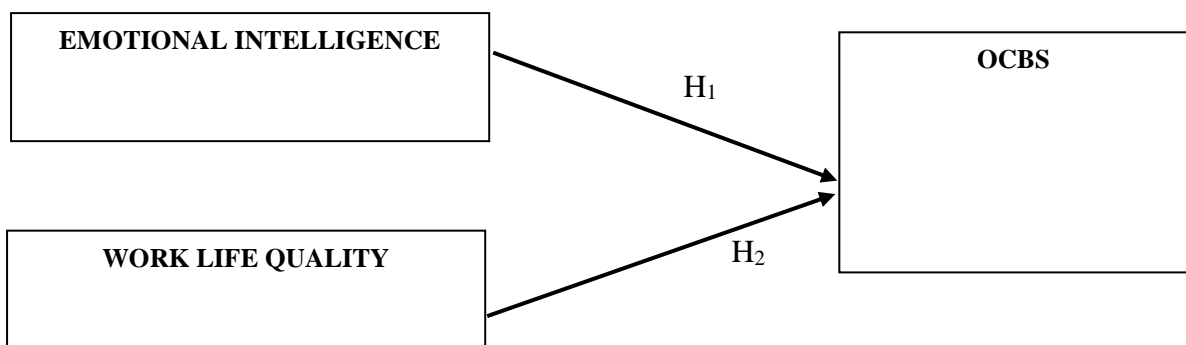
To provide valuable service, banks should look at the ways of how they manage their relationship within the organisation. Also they need to examine decision making, negotiation skills, conflict management, work as teams, maintain good relations with peer group employees, subordinates as well as superiors, handling frustrations, disappointments and interactions with customers' client's certain skills and abilities beyond the technology are of foremost importance. This is where emotional intelligence mainly affects the behaviour of the organisation. Accordingly, some organisational members may perform effectively because they have high emotional intelligence. In a business environment that is extremely volatile, banks are always searching for new ways to create a workforce with high competencies that will make them globally competitive. Thus, this study mainly focuses on the emotional intelligence competencies of the employees and their contributions to the behaviour of employees and the growth of the bank—an often overlooked area especially in the government banks.

Figure 1

Conceptual Framework of the Study

Independent variable
variable

Dependent



Source: Developed based on Literature

The hypotheses were developed between the independent and dependent variables based on the conceptual framework. The developed hypotheses are as follows.

H₁: There is a significant impact of EI on OCB in banking sector.

H₂: There is a significant impact of QWL on OCB in banking sector.

3. Methodology

According to Saunders et al. (2009), the research design is the process that shows how the researcher is going to answer the research question, and it enables to achieve research objectives. Basically, research design includes population, sample and sample procedure and data collection to find the impact of the independent variable (emotional Intelligence, work life quality) on the dependent variable (organisational citizenship behaviour). Researchers have used the quantitative method approach. The quantitative approach is a methodology for conducting research that involves collecting, analysing, and integrating quantitative data.

The banking sector in Sri Lanka comprises 30 banks, and they can be classified as state-owned and private banks. This study has focused on three state owned banks namely BOC, NSB and Peoples bank. Also, most of the studies have focused on the non-banking and private banking sectors. Accordingly, the current study investigates the impact of emotional intelligence and quality of work life on organisational citizenship behaviour among the 150 non-managerial employees in government banks by integrating convenience sampling technique. Survey data were analysed using Partial Least Square – Structural Equation Modeling by using Smart PLS statistical package.

This study will be conducted based on the quantitative approach.. Quantitative approaches emphasise data accuracy compared to qualitative approaches (Creswell, 2005). Moreover, the quantitative analysis approach may lead to creating objective explanations and help make accurate comparisons (Larsson, 2019). Therefore, the present research contributes to a quantitative method. The present study collected primary data from non-managerial employees in government banks through online surveys using a self-administrated questionnaire. In order to achieve research objectives, the questionnaire was designed to reveal the primary indicators related to independent and dependent variables.

3.1 Population and Sampling

3.1.1 Population

The present study focuses on the impact of emotional intelligence and work life quality on organisational citizenship behaviour, with special reference to the non-managerial employees of government banks in Sri Lanka. Therefore, the population consists of all non-managerial employees of selected banks in Sri Lanka. Based on that, the researcher has selected three banks in Sri Lanka (BOC, NSB and Peoples bank). On average, 20,000 non-managerial employees are working in these banks.

3.1.2 Sample

A sample is a subset of the population that is selected for research, and it consists of a selection of members from the population. The sample size was calculated based on the population of all non-managerial bankers in selected banks in Sri Lanka. For the purpose of calculating the sample size, the sample calculation formula introduced by Krejcie and Morgan (1970) was used. Accordingly, under the confidence level at 95% and confidence interval 5, the statistical sample size is 377. However, due to the COVID 19- pandemic most banks have some regulations to reduce the physical contact. Therefore, due to the difficulties experienced in collecting data as well as time constraints, the sample size for this study would be 150.

3.2 Sample Technique

This study applied the convenience sampling technique, which is one of the non-probability sampling techniques. The reason for adopting this sampling technique would be due to its time effectiveness and cost effectiveness, as well as the ability to reach the sample within the context of a pandemic.

3.3 Data Analysis Method

The data analysis method has been performed through primary data, evaluation of the response of the questionnaire to achieve the objectives of the study. The researcher has used Smart PLS, 8 (Ringle et al., 2015), IBM SPSS statistics 25 for analysis of the data, and Microsoft Excel 2013 for pre-preparation of the data which are gathered from the online survey.

3.4 Pilot Survey and Cronbach's Alpha Reliability Test

Cronbach's Alpha values are used to measure the reliability of scales that are used to measure the construct. The researcher has conducted a pilot survey, and 31 respondents from government banks in the Colombo district were analysed. The reliability test was conducted for the data which are gathered from the pilot survey.

Table 4.1 shows the generally acceptable alpha values that would maximise the reliability of construct measurements.

Table 4.1

Cronbach's Alpha reliability test consistency level

Cronbach's Alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$\alpha \geq 0.8$	Good
$\alpha \geq 0.7$	Acceptable
$\alpha \geq 0.6$	Questionable but Acceptable
$\alpha \geq 0.5$	Poor
$\alpha < 0.5$	Unacceptable

Table 4.2

Cronbach's Alpha reliability test results

Variables	Cronbach's alpha Value	No. of items
Emotional Intelligence (EI)	0.912	18
Quality of Work Life (QWL)	0.907	11
Organisational Citizenship Behaviour (OCB)	0.940	13

Source: Analysed statistical output from online survey, 2020

Based on the information in Table 4.2, construct measurements of EI, QWL variables are in an excellent level of reliability due to $0.91 \geq 0.90$, $0.9 \geq 0.9$. As well as construct measurement of OCB also in an excellent level due to $0.94 \geq 0.9$.

3.5 Descriptive Statistics

Descriptive statistical techniques were used to express the basic features in the data, numerically and graphically, which provide a basic intuition to the results. The study has focused on mean, variance, standard deviation and skewness, and the central

tendencies of the data, the spread of scores was determined through descriptive analysis technique.

The following criteria have been used to interpret the data to recognise the level of each construct by using the mean of the variable.

$1 \leq X < 2.5$ Almost disagree

$2.5 \leq X < 3.5$ Moderate

$3.5 \leq X \leq 5$ Almost agree

Moreover, the demographic profile of the respondents were also analysed through descriptive techniques.

3.6 Structural Equation Modelling Technique

Structural equation modelling is one of the advanced and useful data analysis methods ensured by many researchers in the past few decades (Hair et al., 2014). This model is a combination of path modelling, factor analysis, and regression modelling, allowing the researcher to use an array of multivariate techniques in data analysis. It supports the researchers to identify the relationship among measured variables as well as among latent variables. Structural equation modelling is mainly used in employee perception, customer perception and various social science research in the present time. Therefore, this technique is considered a trusted technique for exploring intention, expectation, attitudes, and perceptions to generate new knowledge of the different disciplines (Hair et al., 2014). The present study is focusing on the impact of emotional intelligence and quality of work life on organisational citizenship behaviour in non-managerial employees in government banks. Therefore, the study has used the structural equation modelling technique to judge the impact of the relationship between variables.

3.7 Partial Least Squares (PLS) Structural Equation Modelling

Partial least squares structural equation modelling (PLS – SEM) can be used to evaluate complex causal relationship models with latent variables. This method is a combination of the principal of component analysis, correlation analysis and multiple regression analysis. PLS evaluate the path coefficient, which maximise the R^2 values of projected variables. PLS- SEM predicts variables under multicollinearity, missing values and few cases related to the number of variables than the traditional ordinary least square

regression (Garson, 2016). This method is more pertinent to forecast and identifying target variables for theory building due to the researcher planned to identify the impact of emotional intelligence and quality of work life on organisational behaviour of banking employees.

3.8 SPSS Analytical Tool

SPSS is a professional statistical analysis software package extensively used for applied economics, management, education, and other social science research. The SPSS package has the full capability to conduct a large volume of data useful in social science research that includes powerful statistical analysis algorithms (Bryman & Cramer, 2011). The SPSS package can be used for basic and advanced data analysis and modelling techniques. SPSS software package provides various analytical tools, including descriptive statistics, regression analysis, graphical presentation (graphs, charts), Analysis of Variance (ANOVA) etc.

For the purpose of the present study, the unit of analysis would be the individual employee. The data gathered through an online survey questionnaire were entered into SPSS 25 software package, and descriptive statistics were obtained to establish a proper understanding of the dataset.

3.9 SmartPLS Tool

Based on the characteristics of this study, the researcher adopts PLS-SEM for the purpose of Structural Equation Modeling in the study. SmartPLS 3.2.8 package provides a user-friendly and practical environment for PLS-SEM. This study focuses on examining the causal relationship that maximises the coefficients, and the researcher has selected the SmartPLS 3.2.8. The SmartPLS system provides a simple operational environment to its end-user compared to other PLS-SEM software. According to the above considerations, the researcher has utilised the SmartPLS 3.2.8 for structural equation modelling.

4. Results and Discussion

OBJECTIVE 01

1. Impact of emotional intelligence on OCB of non-managerial employees in government banking sector.

The study ascertained significant positive relationship between EI and OCB ($p= 0.002$) these findings indicate it is important to foster emotional intelligence in organisations to achieve the positive outcomes such as organisational citizenship behaviour. Thus it is inline with the study of Nair (2012) and Alfonso and Zenasni (2016).

OBJECTIVE 02

2. Impact of Quality of Work Life (QWL) on Organisational Citizenship Behaviour (OCB) of non-managerial employees in the government banking sector.

Quality of working life also appears to have a significant positive effect on citizenship behaviour at work. The results from the present study confirm that the better their quality of work life becomes, the more the workers tend to express citizenship behaviour toward the organisation. Just as this point, and following the recommendations of Podsakoff et al. (2009), it appears that OCB depends significantly on perceptions of the quality of work life. Therefore, quality of work life is a key consideration of OCB. The banks need to consider the quality of work life of employees to enhance their behaviour within the organisation.

OBJECTIVE 03

3. Most impacted variable on OCB of non-managerial employees in the government banking sector.

In line with the findings of the current study, quality of work life can be described as the most determining variable on the OCB than the emotional intelligence of the employees. Workers with higher emotional intelligence seem to be affected by complaints/criticisms more than others when they perceive their quality of work life as low. Inversely, they seem to avoid unnecessary criticism much more if they perceive their quality of work life as satisfying. These results support the idea that emotional intelligence may not always increase organisational citizenship behaviour. Its benefits would depend on the workers' intentions towards the organisation (Alfonso and

Zenasni, 2016). Therefore, banks need to be concerned about providing better quality work life to their employees to enhance the citizenship behaviour.

5. Conclusion

The primary objective of this study was to identify the impact of emotional intelligence and quality of work-life on organisational citizenship behaviour. Existing literature shows evidence for emerging emotional intelligence of the employees as a factor which can significant impact the organisation. To improve the organisation behaviour, need to consider the emotional skills of the bankers as well. Some scholars depict that the quality of work-life also bears a significant impact on the organisational citizenship behaviour. The researcher identified two interrelated variables using previous studies, which are conceptualised as antecedents of organisational citizenship behaviour. Those are EI and QWL. With the results gathered from descriptive statistics, the researcher has identified an almost agree level of emotional intelligence, quality of work-life and organisational citizenship behaviour support among the banking employees in the Colombo district.

According to the results generated by the PLS Algorithm in PLS-SEM technique, the significant impact of emotional intelligence and quality of work life support on organizational citizenship behaviour has been discovered. To identify this impact, employees' emotional intelligence and the quality of work life with the consideration of organisational behaviour were measured by the researcher. Based on those findings, it was found that emotional intelligence enhance the organisational behaviour. Moreover, the researcher has identified a highly significant impact of quality of work life on citizenship behaviour of the organisation.

The study findings support the mentioned concepts, by providing evidence. Present study has observed a significant positive impact of emotional intelligence and quality of work life on organisational citizenship behaviour subjective to non-managerial employees of government banks in the Colombo district. In line with that findings, the quality of work life can be identified to be having a higher level of impact to enhance the citizenship behaviour than the emotional intelligence. The purpose of the current study was to investigate the impact of emotional intelligence and quality of work life

on organisational citizenship behaviour. According to that, the researcher has used the partial least square consistent bootstrapping for investigating the impact. Consistent bootstrapping results supported the researcher's hypotheses, returning a significant impact on EI and QWL on OCB. Therefore, the researcher has identified the impact of emotional intelligence and quality of work life on citizenship behaviour is direct and significant.

5.1 Identify the Most Impacted Variable on Organisational Citizenship Behaviour of the Non-Manual Employees in the Government Banking Sector

The secondary objective of this study was to identify the most impacted variable on organisational citizenship behaviour of the non-managerial employees in the government banking sector. After reviewing the literature on quality of work life, it is clear that an organisation cannot get efficient and effective results from the employees without ensuring quality of work life. Emotional intelligence also significantly impacts the organisational behaviour.

The findings support the fact that the quality of work life is important for employees and organisations to achieve overall growth and enhance organisational behaviour. The literature and calculation of path coefficient also explain the importance of QWL which are positively associated with the organisation citizenship behaviour in the banking sector. Quality of work life plays a crucial role in OCB. Employees consider the appreciation of their efforts as well as the promotions, rewards and compensation in terms of allowance and receiving a good salary, the employees are happy to develop their skills and work for the progress of the organisation and summarily their own promotions. Therefore, the present study identified that the most impacting variable on organisational citizenship behaviour is quality of work life rather than emotional intelligence.

5.2 Research Implications

5.2.1 Knowledge Implication

The study has identified the impact of emotional intelligence and quality of work life on organisational citizenship behaviour. Therefore, the study has provided a knowledge contribution by providing more insight into existing literature. The completion of this

study helped to fulfil several gaps which are investigated through previously available literature. Also, the study has empirically proved existing theories and concepts by providing accurate information to future researchers. Existing literature provide evidence to a lack of studies on evaluating the impact of emotional intelligence, quality of work life on organisational citizenship behaviour among non-managerial employees in the government banking sector. Moreover, there are only limited studies which are available in the Sri Lankan context, that study about emotional intelligence, quality of work life and organisational citizenship behaviour in the banking sector. The present study has explored new knowledge regarding the impact of emotional intelligence and quality of work life on organisational citizenship behaviour. Therefore, the present study contributes to the knowledge base relevant to organisational citizenship behaviour and the literature on human resource management. Based on the research findings, the present study can be used to further verify and identify future research areas.

5.2.2 Managerial Implication

The present study focused on identifying the impact of emotional intelligence and quality of work life on organisational citizenship behaviour among non-managerial employees in the government banking sector in Colombo district and identifying the most impacting variable on organisational citizenship behaviour. The subjective sample for the study is limited to banks located in the Colombo district and the study provides knowledge for the management of government banks in the Colombo district. The study is providing the necessary knowledge to understand the employee emotions and quality of work life on organisational citizenship behaviour. Major contribution of this study would be that the findings can be adopted to adjust the quality of work life. Since the study was conducted in banks located in Colombo, the findings can enhance the quality of work life of employees from banks located in Colombo.

Another major contribution is the empirical validation of the existing knowledge and theories regarding the subjective context to provide deep insight into the knowledge. The empirical study provides a more practical contribution to the banking sector, especially for banks in the Colombo district. After further verification, the study findings and contributed knowledge can be extended to the whole banking sector in Sri Lanka.

5.3 Future Research Areas

This study could contribute to the knowledge base of a more specific context. Therefore, the study is more specific to the employees who are employed in government sector banks in the Colombo district. However, there remains certain areas for further research opportunities. Researcher suggests further empirical verification is needed for the banks. Furthermore, the researcher suggests a further expansion of the study for employees in other industries.

Further, the researcher tested only the impact of EI and QWL on the organisational citizenship behaviour. But there could be more variables, factors, and constructs which could impact on OCB. With regards to the present study area, there are only a limited number of studies available. The researcher suggests that future researchers continue the present work into a prospective research area with repeated measurements to clearly identify the causality path between emotional intelligence, quality of work life, and organisational citizenship behaviour. Furthermore, it would be advisable to contrast two citizenship measures based on dissimilar constructs.

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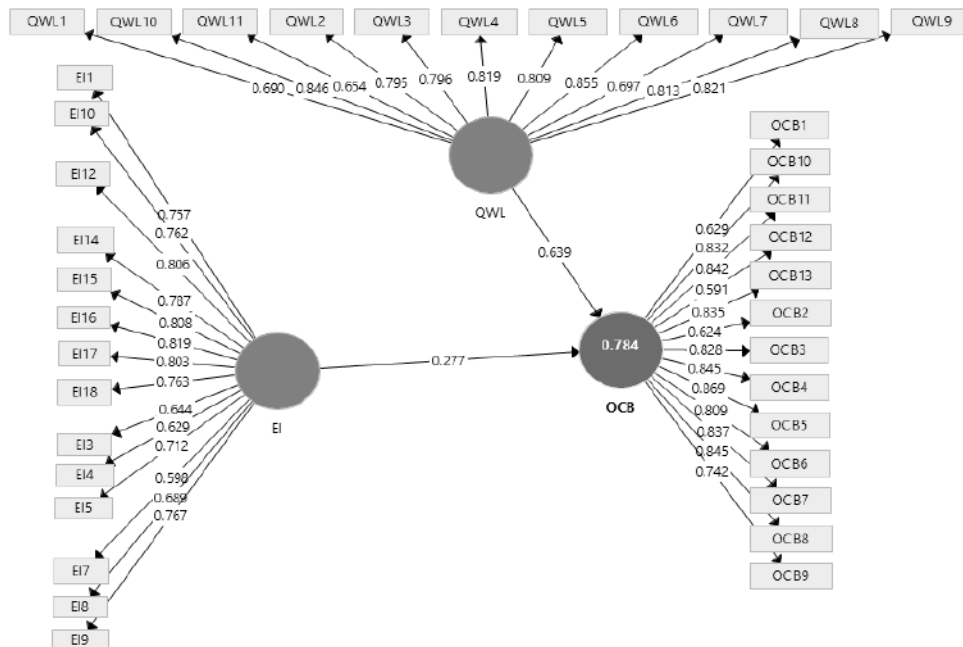
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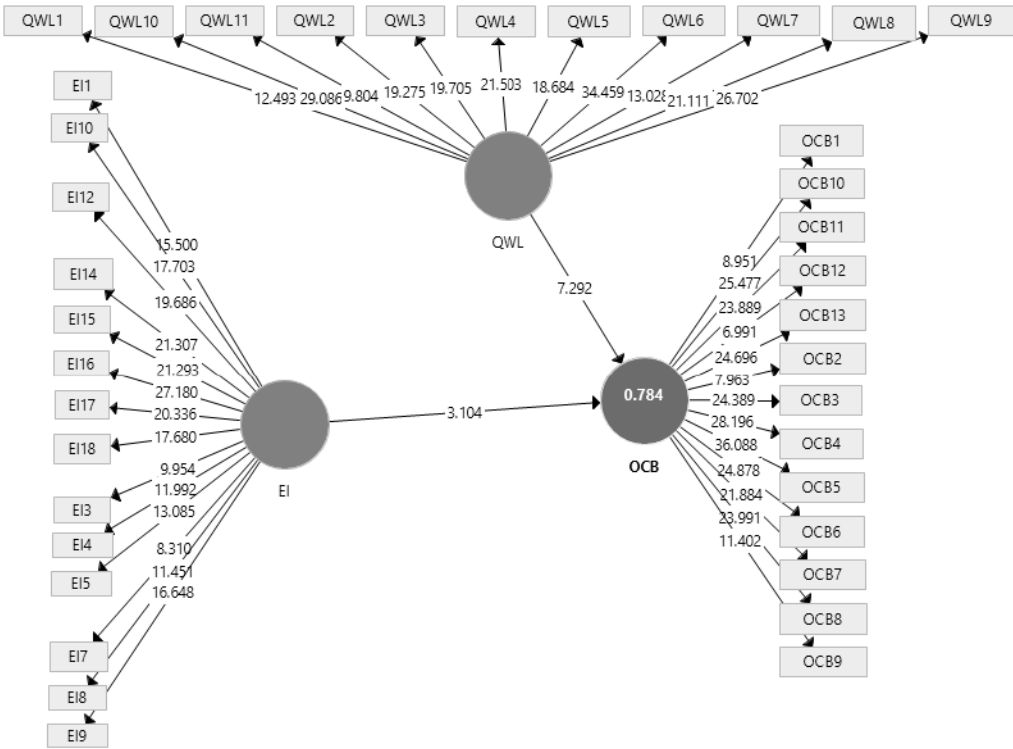
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Appendix A – SmartPLS output

Path coefficient



PLS Bootstrapping



Marketing and Hospitality Management

DETERMINANTS OF CONSUMER CHOICE FOR ELECTRONIC BANKING UTILISATION: EVIDENCE FROM CUSTOMERS OF PUBLIC BANKS IN SRI LANKA

Madhushankha, K. S.

Department of Management and Organisation Studies, Faculty of Management and Finance, University of Colombo
supunm@mos.cmb.ac.lk

Senathiraja, R.

Department of Management and Organisation Studies, Faculty of Management and Finance, University of Colombo

Abstract

Electronic banking facilities are no longer competitive advantages but competitive necessities for banks to compete. Even though banks provide a vast body of electronic banking facilities, customers are not utilising those facilities to the extent that banks expect. However, a limited number of empirical studies have been published on electronic banking utilisation. This study seeks to find the determinants for utilisation of electronic banking facilities provided by state banks for their customers in Sri Lanka. The study is based on a quantitative approach to identify factors affecting electronic banking utilisation. Individual factors, service quality, user input factors, price factors, service product characteristics, and perceived risk were identified as the determinant factors. Further, it reveals different relationships and provides findings that support, confirm or contradict previous studies.

Keywords. Electronic banking, Service quality, User input factors, Individual factors, Perceived risk Sri Lanka

1. Introduction

The banking industry is rapidly responding according to the changes in customer needs and customer preferences. Factors like increasing competition, social trends, information technology developments, and financial sector regulations are significantly contributing to this rapid response of the banking sector (Byers & Lederer, 2001; Giannakoudi, 1999; Marakarkandy et al., 2017). Based on management anticipations

and reactions to change, the success of retail banks varies. Electronic banking facilities like online banking, with the support of new technology, have defeated the traditional banking delivery methods. There are more advantages of electronic banking over personal-customer banking.

Adopting information technology in core business functions of the banking sector was commenced in the late 1980s. Subsequently, the internet and was available for commercial works by the early 1990s. In Sri Lanka, Sampath Bank became the pioneer in electronic banking by introducing ATM (Automated Teller Machine) facilities. Subsequently, in 1989 they introduced the uni-bank system where customers can freely access their bank accounts through any branch. These two events radicalised the local banking sector and the electronic transaction history. After that, in 1989, the international payment solution Master card was introduced to Sri Lankan customers, thus opening the world's market. Finally, these three milestones revolutionised the local banking sector and paved the path for a new electronic era.

The literature is comprised of numerous studies related to electronic banking (Alalwan et al., 2016; Safeena et al., 2018; Šalčiuvienė et al., 2014). This study was carried out to examine consumer decision-making on electronic banking utilisation over traditional banking in Sri Lanka. The researcher has operationalised the determinant factors as service quality factors, individual factors, price factors, risk factors, service product characteristics, and user input factors affecting the consumer choice of electronic banking utilisation by using the consumer decision-making framework.

1.1 Problem Statement

What are the determinants for the utilisation of Electronic banking facilities provided by state banks for their customers in Sri Lanka?

Literature has featured numerous published research papers, articles, and books to address the above issue in different countries worldwide. (Hendrikse & Christiaanse, 2000; Mols, 1998; Pyun et al., 2002). Nevertheless, there are no such studies have been done in the Sri Lankan context. The researcher has identified that empirical gap in this area and developed the study's objective to identify the determinants for electronic

banking facilities provided by state banks for their customers in Sri Lanka. Previous literature has employed the consumer decision-making model that the researcher has utilised to test the argument of their studies (Gan et al., 2006).

Even the research problem identified by the researcher is supported and justified by previous literature in different countries. The researcher has carried out a preliminary study using 30 Sri Lankan state banks' customers to understand the level of utilisation of electronic banking facilities. From that preliminary study, the researcher has evidence of the identified research problem's absolute validity and actual existence in the Sri Lankan context. The study results revealed that only 6.7% of customers from the selected sample were generally using online banking facilities available for their standard requirements. In addition, only 26.7% of customers frequently used debit cards and credit cards for their daily transactions, and 6.7% of customers from the selected sample were transferring their money through electronic banking facilities. Hence, online banking, payments through credit or debit cards, and virtual money transfers are considered central elements of facilities provided by the banks under electronic banking facilities; it is proven that their level of utilisation of those electronic banking facilities is superficial. The researchers developed this study to fill that empirical gap in the Sri Lankan context to determine the factors influencing the utilisation of electronic banking facilities provided by the state banks for their customers in Sri Lanka.

2. Literature Review

2.1 The Consumer Decision-Making Framework

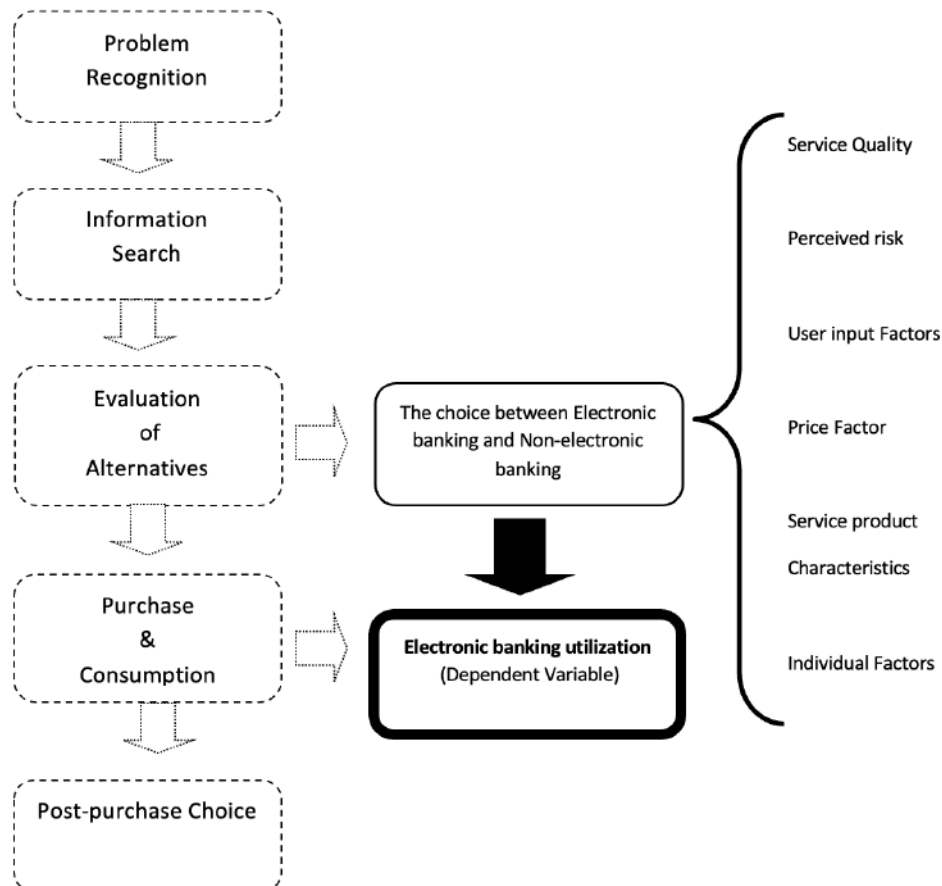
The consumer decision-making framework originated by Dewey (1910) suggests the five stages of the consumer decision-making process; problem recognition, search and evaluation of alternatives, choice, and outcome-based on consumer purchasing behaviour headed for goods and services. This framework identifying the consumer as an information processor analyses information through the different stages of the decision-making process. So that it suggests that the consumer decision-making process is theoretically applicable for a full range of consumer decisions. The framework was adopted by Engel et al. (1973), Block and Roering (1976) and extended and related it to the problem-solving process. At any instance that the consumer redefines the initial problem, search for new information, or to re-evaluate potential problem solutions will

be discontinued due to their desired or actual decision-making status support by decision-making framework.

Figure 1

Consumer decision-making process

Consumer Decision-Making Process



Moreover, the impact made by environmental factors, income, cultural, family, social and physical factors also constraints various stages in the consumer decision-making process. Dewey's consumer decision-making process for goods was applied by Zeithaml and Bitner (2003) to the service segment. The process was operationalised as; need recognition, information search, evaluation of alternatives, purchases, and consumption post-purchase evaluation. The variables that consumers use to evaluate service alternatives come in many forms. The number of variables involved and how they influence consumers' evaluation of alternatives varies according to the type of situation (Agwu, 2016; Loundon & Bitta, 1993). The literature suggests that service quality factors, individual factors, price factors, risk factors, service product factors,

and user input factors are relevant determinants for the consumers' decision-making between electronic and non-electronic banking (see Figure 1).

2.2 Determinant Factors for Utilisation of Electronic Banking Facilities

Service quality dimension, perceived risk factors, user input factors, price factors, service product characteristics, and individual factors are the main factors that determine consumer choice of electronic banking utilisation (Alalwan et al., 2018; Gan et al., 2006). We can define service quality as a critical success factor for an organisation that helps them increase their competitiveness and build their competitive advantage (Amin, 2016; Ling et al., 2016). Under this concept, three primary dimensions can be identified: assurance, reliability, and responsiveness. Reliability and use of electronic banking have a positive relationship (Alalwan et al., 2017; Gerrard & Cunningham, 2003; Liao & Cheung, 2002). Literature has shown that the assurance dimension is also an important dimension under service quality characteristics (Cheung, 2002; Polatoglu & Ekin, 2001). To encourage customers to demand the highest quality, the nature of services has a significant impact. It is essential to be very close to customers to capture customers' information, expectations, and perceptions. (Khan et al., 2019; Prakash, 2019; Tabash et al., 2019). Electronic banking users believe that electronic banking responded to their needs other than traditional ways of banking (Boruah, 2018; Falkovitch, 2020). Gerrard and Cunningham (2003), Asad et al. (2016) show that the speed to the response from electronic banking and fast access to banking transactions are important factors in consuming electronic banking.

Consumers perceive greater risk when they are buying services other than tangible goods. (Agwu, 2016; Clow et al., 1998). A similar study shows that the goods are intangible, non-standardised, and often sold without guarantee or warranties (Babić et al., 2016; Elliott et al., 2015; Zeithaml, 1981). Hence technology-enabled services exhibit unfamiliar and ambiguous stimuli, and the consumer thinks electronic banking is a riskier technology-enabled channel for their banking transactions. (Davidow, 1986; Mudie & Pirrie, 2012). Under perceived risk, we can identify six main dimensions; psychological risk, social risk, time risk, quality risk, financial risk, and physical risk (Gan et al., 2006; Lockett & Littler, 1997; Marakarkandy et al., 2017). Under those dimensions, consumers' risk perceptions are different from customer to customer

(Hampshire, 2017; Zhao et al., 2008). The perceived quality of the service impacts perceived risk. Similarly, the author points out that reliability and empathy of service mainly influence financial and psychological risks, but tangible cues of service quality principally influence functional and social risks. However, higher levels of acceptance of risk and self-confidence mitigate the detrimental effects of perceived risk on intention to use electronic banking (Marafon et al., 2018).

Control, enjoyment, and intention have been identified as variables to test user input factors affecting electronic banking utilisation (Gan et al., 2006). Each and every bank imposes specific mandates and requirements under their responsibilities regulatory oversight. Hence, control is an essential factor that consumers concern about when they use electronic banking (Hernandez et al., 2017; Mantel, 2000). Therefore, banks should create adequate 'controls' designed to fill security gaps (Guracech & Gregory, 2013). When proposing controls, the bank should consider customers as well. Guracech and Gregory (2013) identified that user control, such as the amount of control or contribution involved in electronic banking transactions, was a significant determinant for consumers' decision to use electronic banking.

Similarly, Bateson (1985) identify that consumers chose to use technology-based channels in the delivery of a service, not because of the monetary incentives, but because they perceived a stronger sense of control as a result of a self-service option (Bateson, 1985; Zhu et al., 2013). If they utilise electronic banking, control in electronic banking relates to the consumers' perceived involvement or sense of control. Mantel (2000) says that the control attribute is also one of the most aspects that customers consider when choosing electronic banking facilities. Similarly, Liao and Cheung (2002) say that user control is a significant determinant for consumer decision-making choosing electronic banking. Sathye (1999), Alalwan et al. (2017), Gerrard and Cunningham (2003) studies are making their suggestions on consumers' intention to use electronic banking was positively related to the usage of electronic banking. Greater user control comes at a price – often that of greater complexity and increased effort (Xie & Cool, 2000). Enjoyment is also becoming a considerable positive predictor of customers' intentions to repurchase (Chiu et al., 2009; Frame et al., 2018).

The price factor can be identified as perceived relative economic advantages; consumers were motivated to use electronic banking facilities (Sathye, 1999; Alalwan et al., 2017). Similarly, it argues that two types of prices, including bank costs and other charges, were accounted for internet banking. Sathye (1999) identified that the higher price paid by consumers negatively impacted the positive choice of electronic banking. Generally, service product characteristics comprise service features, targets of service, and core service. Polatoglu and Ekin,(2001), Karjaluo et al. (2002), and Liébana-Cabanillas et al. (2014) studies found that the positive relationship between service product characteristics and utilisation of electronic banking facilities. Considering individual factors lifestyle of an electronic banking customer is different from customers who do not use electronic banking facilities. That can be called an e-life style (Asongu et al., 2018; Changchit et al., 2020; Lin & Fu, 2018; Yu, 2015). Similarly, the author points this e-lifestyle changes their attitudes on building relationships with banking facilities. The knowledge of electronic banking that consumers have is a crucial factor under electronic banking utilisation (Clow et al., 1998). Consumer resources also influence electronic banking (Firdous & Farooqi, 2017; Mols, 1998). Similarly, it shows that lacked access to personal computers prohibited the adaptation to electronic banking as well. Furthermore, the studies confirm that individual factors are positively related to the choice of electronic banking utilisation.

3. Methodology

3.1 Research Approach

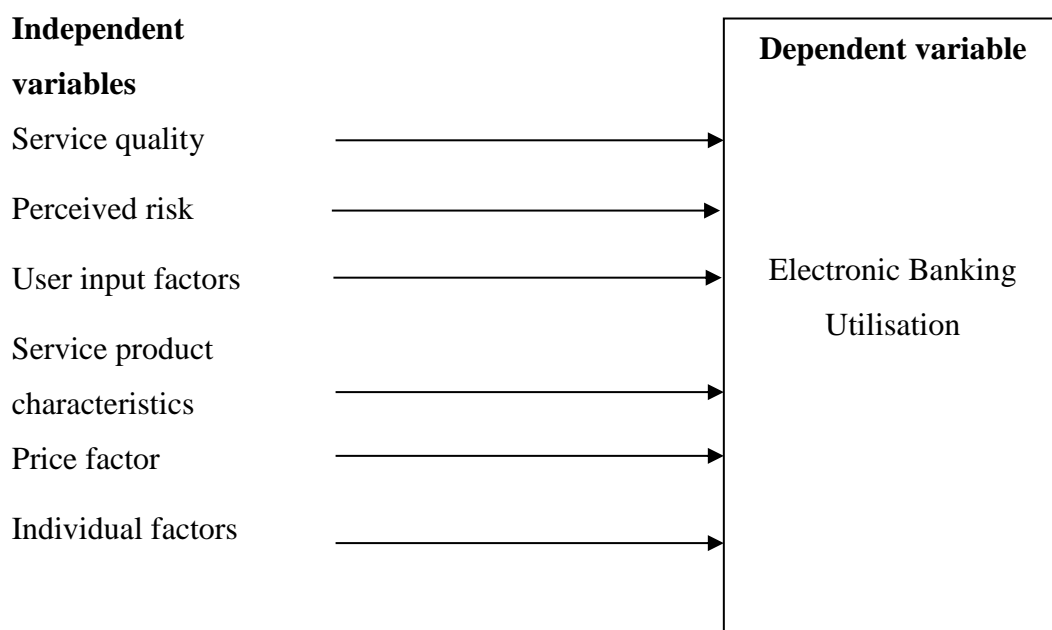
Based on the purpose of the study research approach can be experimental, quasi-experimental, quantitative, qualitative, or mixed. A qualitative study does not include variables, while a quantitative study includes dependent and independent variables. Service quality, perceived risk, User input factors, Price factor, Service product characteristics, and individual factors have been taken as independent variables for the study. In contrast, the utilisation of electronic banking has been taken as the dependent variable. To fulfill the purpose of the study, the researcher analyses the relationship between independent and dependent variables through a quantitative research approach to obtain statistical solutions focusing on numbers derived from randomly distributed questionnaires among banking customers. It must be noted that although the researcher can carry out the study using an experimental research approach, it is not applicable for

this study. Because of the experimental approach, a set of variables is kept constant while the other variables are being measured under that condition. However, in this study, electronic banking utilisation changes from customer to customer, and the factors vary continuously. Hence no variables can be considered constant. Due to this reason, the researcher has used a quantitative approach for the study.

3.2 Conceptual Model

Figure 2

The conceptual model for the study



Based on the arguments in the previous literature and the conceptual framework for the study, the following were hypothesised,

H₀: Service quality does not affect utilisation of electronic banking facilities

H₁: Service quality affects utilisation of electronic banking facilities

H₀: Perceived risk does not affect the utilisation of electronic banking facilities.

H₁: Perceived risk affects utilisation of electronic banking facilities.

H₀: User input factor does not affect utilisation of electronic banking facilities

H₁: User input factor affects utilisation of electronic banking facilities

H₀: Price factor does not affect on utilisation of electronic banking facilities

H₁: Price factor affects utilisation of electronic banking facilities

H₀: Service product characteristic factor does not affect on utilisation of electronic banking facilities.

H₁: Service product characteristic factor affects the utilisation of electronic banking facilities.

H₀: Individual factors does not affect utilisation of electronic banking facilities.

H₁: Individual factor affects utilisation of electronic banking facilities.

3.3 Operationalisation

The study was operationalised to examine the relationship between the independent variables and the dependent variable, as follows,

Table 1

Independent variable operationalisation

Concept	Dimensions	Scale	Indicator
Service Quality	Reliability	SQR1	Transaction through electronic banking are accurate
		SQR2	Transaction through electronic banking are reliable
	Assurance	SQA 1	Electronic Banking offers high security
		SQA2	I am familiar with electronic Banking
		SQA3	I am comfortable with electronic Banking
		SQA4	I have had satisfactory experiences with electronic Banking
	Responsiveness	SQR1	Electronic Banking services are faster than in branch Banking
		SQR2	Electronic Banking Provide easy access to banking Transactions
Perceived Risk	Psychological Risk	PRP1	I feel in branch banking is not consistent with myself image
	Social Risk	PRS1	I Believe my friends will disapprove if I change to in branch banking

	Time Risk	PRT1	Travelling to a Bank branch involves too much time
		PRT2	Travelling to a Bank branch involves too much queuing time
	Quality Risk	PRQ1	In Branch Banking is less Satisfying than electronic banking
	Physical Risk	PRp1	Going to bank may result in physical damages due to a terrorist attack.
		PRp2	In Branch Banking may results in Physical injury due to robbery
User input Factors	Control	UI1	I like to use Electronic Banking because it offers independence
		UI2	Electronic Banking enables me to be fully involved in my banking transactions
	Enjoyment	UIE1	Electronic Banking is very enjoyable to use
		UIE2	Electronic Banking is user Friendly
	Intention	UII1	I like to use new methods to conduct banking transactions
Price Factor	Price	PF1	Electronic Banking Charges are expensive
Service Product characteristics	Service characteristics	SPE1	Electronic Banking is time saving
		SPE2	Customer services in Electronic banking have a consistent standard
		SPE3	Electronic Banking Has a wide variety of services available
Individual Factors	Consumer Resources	IFC1	I have regular access to a computer
		IFC2	I have regular access to an internet
		IFC3	Electronic banking is easy to use
	Life style	IFL1	I use electronic Banking because my friends use it
		IFL2	The Use of Electronic Banking reflects my social status

Table 2*Dependent variable operationalisation*

Utilisation of Electronic Banking Facilities	D1	Generally I use electronic banking facilities that are available, for my everyday requirements
	D2	I use Credit/Debit cards for most of my Payments.
	D3	I transfer money through Electronic banking facilities frequently.

3.4 Population and Sample

The sample was excluded from the customers who are not registered for electronic banking facilities. The study population can be defined as the customers of public banks, Bank of Ceylon, Peoples Bank, and National Savings Bank in the western province with electronic banking facility access. The western province of Sri Lanka has been selected as the geographical area for the study. The most densely populated province of Sri Lanka, which is 3,593 square kilometers in extent, is home to the country's legislative capital Sri Jayewardenepura. It is also home to the country's commercial hub. It covers around 30% of the total population of Sri Lanka, which was a considerable amount; hence there are nine provinces in Sri Lanka. Under that, we take 300 people in the western province who registered in electronic banking facilities. The convenient sampling method is using to build the sample because of the easiness and quick data gathering.

The sample is tested by serving printed questionnaires among public bank customers, and it is printed from both languages in Sinhala and English and distributed randomly. To analyse and interpret data Likert scale method is used. Five-point ordinal scale is used for this study, and the questions were phrased in the form of statements scored as 1= highly agree, 2 = agree, 3= neutral, 4= disagree, and 5= highly disagree. The questionnaire gathered information on consumer's decisions to use electronic banking versus non-electronic banking. Questionnaires were distributed and collected directly by the researcher for the study by visiting the main branches of each bank in Colombo, Gampaha, and Kaluthara. Three hundred and fifty (350) questionnaires were distributed, and from that, 300 questionnaires, complete and filled with a good understanding of the purpose, were selected as the sample for the study.

4. Data Presentation and Analysis

The researcher has used descriptive statistics, reliability test statistics, correlation and multiple regression statistics, one-way ANOVA statistics, normality statistics, independent sample test statistics, group statistics, and multiple comparison statistics to check the research validity.

Table 3

Profile of respondents

Item		Frequency	Valid Percentage
Gender	Male	142	47.3
	Female	158	52.7
	Total	300	
Age	18-30 years	137	45.7
	31-50 years	108	36.0
	above 50	55	18.3
	Total	300	
Marital status	Married	121	40.3
	Unmarried	172	57.3
	Widowed	05	1.7
	Divorced	02	7.0
	Total	300	
Profession	Gov employee	57	19.0
	Pvt employee	127	42.3
	Business	37	12.3
	Student	79	26.3
	Total	300	
Income	Up to 10000	119	39.7
	10000-25000	73	24.3
	25000-40000	61	20.3
	Above 40000	47	15.7
	Total	300	

Correlation and multiple regression models were used to identify the factors affecting on utilisation of electronic banking and facilities provided by the public banks in Sri Lanka.

4.1 Reliability Analysis

The researcher carried out a reliability analysis before the variables are operationalised. Cronbach's alpha has been applied to determine the internal consistency as several items have been used to operationalised one variable. Then service quality, perceived risk, user input factors, price factor, service product characteristics, and individual factors have been operationalised using several items. Therefore, reliability analysis has been carried out to determine their internal consistency and direction. Each item's Alpha scores to test each dimension were totaled, and a mean score was calculated for each dimension. Cronbach's alpha figures have been provided (see Table 4).

Value of 0.6 was taken as the cut-off point for the reliability. Churchill (1979) empirically supports that a value of 0.6 or more indicates the satisfactory internal consistency reliability of the items taken to test each dimension in the study. Hence all the values are more than 0.6. Therefore, there is internal consistency, variables are following the same direction, construct, and the concept can be correctly measured.

Table 4

Cronbach alpha reliability test

Concept	Dimension	Questions	Cronbach's alpha figure
Service quality	Reliability	SQR 1,SQR 2	0.776
	Assurance	SQA 1,SQA 2,SQA 3,SQA 4	0.872
	Responsiveness	SQr 1,SQr 2	0.719
Perceived risk	Psychological	PRP 1	N/A
	Social risk	PRS 1	N/A
	Traveling time risk	PRT 1	N/A
	Quing time risk	PRT 2	N/A
	Quality risk	PRQ 1	N/A
	Physical risk	PRp 1, PRp 2	0.629
User input factors	Control	UI 1, UI 2	0.638
	Enjoyment	UIE 1, UIE 2	0.737
	Intension	UII 1	N/A
Price factor	Price	PF 1	N/A
Service product characteristics	Service product	SPE 1, SPE 2, SPE 3	0.760

Individual factors	Consumer resources	IFC 1, IFC 2, IFC 3	0.872
	Lifestyle	IFL 1, IFL 2	0.672

4.2 The Factors that Influence Utilisation of Electronic Banking Facilities

The researcher applied correlation and multiple regression models to address the objectives of the study. Using correlation analysis effect of each factor on the utilisation of electronic banking facilities has been identified. Results are provided below (see Table 5). According to the table, p values of all identified determinant factors; service quality, Perceived risk, User input factors, Price, Service Product characteristics, Individual factors are 0.000, which is highly significant. It indicates that there is a significant association between the factors and the utilisation of electronic banking facilities.

Table 5

Correlation analysis

	Utilisation	
Service Quality	Pearson Correlation	0.681**
	Sig. (2-tailed)	0.000
	N	300
Perceived risk	Pearson Correlation	0.632**
	Sig. (2-tailed)	0.000
	N	300
User inputs	Pearson Correlation	0.673**
	Sig. (2-tailed)	0.000
	N	300
Price	Pearson Correlation	-0.357**
	Sig. (2-tailed)	0.000
	N	300
Service Product characteristics	Pearson Correlation	0.540**
	Sig. (2-tailed)	0.000
	N	300
Individual factors	Pearson Correlation	0.770**
	Sig. (2-tailed)	0.000
	N	300

Hence correlation analysis is a bivariate analysis. The researcher has considered the combined effect of all these factors by applying a multiple regression model to determine the significant factors that affect electronic banking utilisation. According to the multiple regression model, the model summary is provided by,

Table 6

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.803 ^a	0.644	0.637	0.62401

b. Dependent Variable: Utilisation

b. Dependent Variable: Utilisation

The coefficient of determination R Square is 0.644. This indicates that the model has covered 64.4% of the dependent variable, the utilisation of electronic banking facilities. As the value is more than 60%, the model is nicely fitted. According to R, which is multiple correlations, the coefficient is 0.803. It indicates how independent variables are jointly correlated with the dependent variable, which is electronic banking utilisation. As the value is more than 0.7 there is a robust joint association between factors affecting utilisation and the utilisation of electronic banking facilities.

Table 7

Collinearity statistics

Model	Collinearity Statistics	
	Tolerance	VIF
Service_Quality	0.333	3.000
Perceived_risk	0.367	2.724
User_inputs	0.280	3.578
Price	0.747	1.339
Service product	0.335	2.982
Individual_factors	0.322	3.109

According to the collinearity statistics, all the VIF values are less than five. It indicates that all the determinant factors are jointly significant. According to the regression

ANOVA table provided, the significant value of the F statistic 0.00. It is highly significant and confirmed that the model is jointly significant. It indicates that all the determinant factors jointly influence the utilisation of electronic banking facilities.

Table 8

Regression ANOVA table

		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206.581	6	34.430	88.422	0.000 ^a
	Residual	114.090	293	0.389		
	Total	320.671	299			

a. Predictors: (Constant), Individual, Price, Perceived risk, Service, Service_Quality, User_inputs

b. Dependent Variable: Utilisation

Table 9

Correlation coefficients

Model	Unstandardised Coefficients		Standardised Coefficients
	B	Std. Error	Beta
Service_Quality	.300	.079	.229
Perceived_risk	-.050	.011	-.026
User_inputs	.162	.081	.132
Price	-.117	.038	-.125
Service product	-.109	.069	-.096
Individual_factors	.570	.065	.543

a. Dependent Variable: Utilisation

The beta value received for service quality is 0.229, indicating a considerable effect on utilisation. Similarly, other variables also have received noticeably significant beta values proving their effect on the utilisation of electronic banking facilities.

The researcher has used this correlation coefficient to test the hypotheses developed, which again confirms the results obtained in the bivariate correlation analysis

mentioned above. So that all the null hypotheses are rejected, concluding that all the independent variables affect electronic banking utilisation.

Further, the results obtained in column B under the unstandardised coefficients depict the magnitude and the direction of the effect of each variable on the dependent variable, utilisation. Observing the value for service quality as 0.300 illustrates that the variable service quality has a moderately strong positive relationship with electronic banking utilisation. According to the table, service quality, user inputs, and individual factors positively correlate with utilisation, where individual factors share the most robust relationship. The remaining variables depict negative relationships, whereas the perceived risk has the lowest strength, making it the most negligible factor affecting electronic banking utilisation consumer choice.

In the scatter plot, standardised residuals and standardised predicted values have been plot (see Figure 3). All the residuals are randomly distributed without any predictable pattern. Therefore, the residuals do not have a heteroscedasticity problem. According to the normality test of residuals, the researcher applied the Kolmogorov-Smirnov test and Shapiro-Wilk test. The p -value of Kolmogorov-Smirnov test is 0.2 while p -value of Shapiro-Wilk test is 0.514. Both are insignificant at the 5%, and residuals are normally distributed. The result is presented below (see Table 10).

Figure 3

Scatter plot

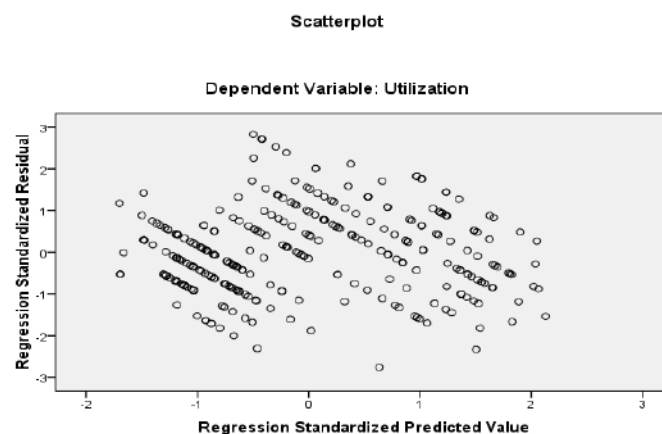


Table 10*Tests of normality*

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardised Residual	0.039	300	0.200*	0.995	300	0.514

a. Lilliefors Significance Correction

***. This is a lower bound of the true significance.**

5. Findings and Conclusion

The study's findings reveal that service quality, perceived risk, service product characteristics, price factor, user input factors, and individual factors are significant determinants for the utilisation of electronic banking facilities provided by the public banks in Sri Lanka. Further, it reveals the positive relationship between service quality, user input factors, and individual factors with the utilisation of electronic banking facilities. There is a negative relationship between price factor, perceived risk, and service product characteristics with electronic banking utilisation. Based on their sensitivity to the utilisation of electronic banking facilities, the determinant factors were ordered as follows,

1. Individual factors
2. Service quality
3. User input factors
4. Price Factor
5. Service product characteristics
6. Perceived risk

5.1 Discussion

The study's findings show a consistency in the previous literature (Alalwan et al., 2017; Gerrard & Cunningham, 2003; Liao & Cheung, 2002) related to service quality that it is having a positive relationship with electronic banking utilisation. Considering user input factors, the positive relationship between user input factors and utilisation shows consistency with previous literature findings (Frame et al., 2018; Guracech & Gregory, 2013; Hernandez et al., 2017). The price factor has negative beta values of -0.117. It indicates that there is a negative relationship between price factor and utilisation of

electronic banking facilities. It is supported by Sathye (1999) and Alalwan et al. (2017). According to the results obtained by the study, service product characteristics have a negative beta value of -0.109, which indicates a negative relationship with electronic banking utilisation. It shows inconsistent findings from previous literature (Gan et al., 2006; Polatoglu & Ekin, 2001). When it comes to individual factors, it is identified as the most impacting factor on the utilisation of electronic banking facilities showing consistency with the previous literature (Asongu et al., 2018; Changchit et al., 2020; Lin & Fu, 2018; Yu, 2015). As the most negligible impacting factor, perceived risk has a negative relationship with the dependent variable showing the similarities to studies such as Marakarkandy et al. (2017) and Marafon et al. (2018).

5.2 Implications

According to the findings, individual factors have the most significant impact on electronic banking utilisation. It means that the recourses customers have and their lifestyle would be the most sensitive factors in utilising electronic banking facilities. Under consumer resources, factors like accessibility to a computer and accessibility to the internet, and the easiness of usage have been considered. Even the bank cannot provide such facilities individually for their customers; they can implement more access to the banking network through ATM facilities to increase electronic banking utilisation. Establishing more ATMs should be taken into consideration. The second most significant factor in utilising electronic banking facilities is service quality dimensions. Factors as reliability, assurance and responsiveness were identified under service quality dimensions in this study.

To increase the reliability of banking facilities accuracy of the transactions should be increased. At that point, policymakers should implement several rules and regulations to increase the reliability of banking facilities. Considering the service product characteristics as a determinant factor, findings of the study show a negative relationship between service product characteristics and electronic banking utilisation it implies that still, people did not believe in service product characteristics like consistency standards of facilities, time savings, and the variety of those features that easily enable them to do their banking transactions. On that point, the bankers should

consider promoting the advantages of service product features of electronic banking facilities.

5.3 Recommendations for further researchers

The findings of this study provide hints for the people who are interested in doing researches, especially in the banking sector. There can be several determinants that impact the utilisation of electronic banking. Research to identify other factors that influence electronic banking utilisation would benefit the banking stakeholders. According to the study's findings, service quality and individual factors impact electronic banking utilisation. Higher the reliability, assurance, and responsiveness increase the tendency to utilise electronic banking facilities. Consumer resources availability and favourable consumer lifestyle make customers more familiar with electronic banking facilities. Investigating the impact of those sub factors individually on service quality and individual factors would support stabilising the highly significant positive impact of service quality and individual factors on electronic banking utilisation.

5.4 Limitations

The study has some limitations. The study was carried out to identify determinant factors of the utilisation of electronic banking facilities providing by public banks. Even the sample covers the customers of all public banks; it does not include customers of private banks, including foreign banks. The study examined the impact of factors on electronic banking utilisation. Nevertheless, there are several determinants affect the utilisation of electronic banking other than the factors mentioned in the model.

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ACCEPTANCE OF MOBILE BANKING SERVICES OFFERED BY SRI LANKAN COMMERCIAL BANKS

Nayanajith, D. A. G.

Department of Marketing, Faculty of Graduate Studies, University of Kelaniya, Sri Lanka
dagnsrilanka@gmail.com

Dissanayake, D. M. R.

Department of Marketing Management, Faculty of Management, University of Kelaniya, Sri Lanka

Wanninayake, W. M. C. B.

Department of Marketing Management, Faculty of Management, University of Kelaniya, Sri Lanka

Damunupola, K. A.

Department of Tourism, Faculty of Management, Uwa Wellassa University, Sri Lanka

Abstract

Mobile banking services enable customers to conveniently patronage financial services through smart mobile devices. Present research analyses the impact of subjective norms and security of e-services on mobile banking adoption in the context of students of University of Kelaniya. Students participating in the weekend study programmes and using mobile banking services have been considered for sample selection. Finally, 287 duly completed self-administered questionnaires were utilised for the data analysis process. The technology acceptance model has been adopted by means of incorporating the subjective norms variable and security of the e-services variable. ANOVA, ANCOVA, and Hierarchical Linear Model (HLM) were used for data analysis. Empirical evidence supported all three hypotheses of the study. The cross-sectional nature and constrained sample were limitations of the study. Findings are beneficial for banks, mobile banking service providers/application developers, regulators, and related stakeholders, alike. The originality of the research is that the particular HLM analysis and incorporation of associated models, given the specific research context. Future research could be performed in quest of varied findings in wide-ranging country, cultural and societal contexts by integrating relevant models and perspectives.

Keywords. E-services, Mobile banking, Online banking, Subjective norms, Technology adoption

1. Introduction

World economic growth is being hampered in the milieu of weakening international trade and investment activities as well as mounting trade tensions amongst leading economic hubs given the widespread pandemic repercussions. Since most advanced and emerging economies have recorded downturns, the effects of the same are currently being experienced by other countries. As was the case with many emerging economies, the Sri Lankan economy's key sectors remained under pressure for the second consecutive year. Contracted economic activities, widening of the trade deficit, depletion of forex reserves, and the sharp depreciation of the currency were among the main distress points for the economy. The services sector is the stimulus of the economic landscape in Sri Lanka which contributes the most to the economy where economic activities related to the banking sector remained resilient mainly due to the capital and liquidity buffers and total assets built over the past few years and continued to expand at a reasonable pace during 2020 compared to 2019 (CBSL, 2021).

The advancement of activities pertinent to the service sector during the year contributed by the development of financial service sector initiatives without triggering significant macro-economic impacts amidst challenging dynamic market settings. The banking sector of the country sustained to dominate the financial sector of the country whilst accounting for a substantial 72.5% of the total assets of the overall financial sector (CBSL, 2021). The profitability of the Sri Lankan banking sector is being stagnated despite these facts, owing to the escalation of operational expenditure, among other factors. Hence, this could be curtailed by managing operational costs whilst improving non-interest income sources concurrently by facilitating electronic onboarding, primarily via promoting mobile banking services.

In accordance with the high levels of internet penetration, a significant change in customer behaviour has been observed in recent years by most banks as an escalating number of customers opting for the convenience of attending to their banking requirements via online or by using their smart mobile devices, in comparison to

visiting a physical branch. The process of transmitting encrypted data over telecommunication networks to a distant location for verification was a precursor to telephone / mobile banking (Leech et al., 2019). To capture a larger share of the digitally enabled customer segment, banks are innovating revolutionary banking solutions that enable their customers to transact seamlessly across multiple touchpoints.

1.1 Problem Statement

Underpinning the work in these developments, a wide-ranging digital transformation strategy continues to evolve in tandem with global banking trends (HNB PLC, 2021). This strategy leverages the latest technological developments, and almost all banks compete on several first-to-market products that have assisted in respective positioning banks as innovation leaders. Hence, banks are focused on expanding technology-based digital channel architecture, enabling an increase in the number of secured banking touchpoints, which would inevitably assist the expansion of outreach and financial inclusion amidst an outburst of the pandemic (Commercial Bank PLC, 2021; Sampath Bank PLC, 2021).

Nevertheless, most studies have highlighted that mobile banking /e-banking services adoption is not at a significant level across developing countries, including Sri Lanka (Hapuarachchi & Samarakoon, 2020; Nayanajith et al., 2020; Priyangika et al., 2016; Rajapakse, 2017). Similarly, researchers have noted that e-security, the trustworthiness of e-services, recommendations of peers, and ease of use are paramount in accepting mobile banking services from the perspective of the banking customers (Al-Dmour et al., 2020; Thusi & Maduku, 2020; Pikkarainen et al., 2004). Therefore, it is necessary to identify whether such factors affect acceptance of mobile banking in the context of Sri Lankan commercial banks as well, in view of uplifting the degree of user adoption of mobile banking across the country.

Accordingly, the objectives of the study are primarily to identify the significance of security of e-services (SoES) towards adoption of mobile banking (AoMB). Secondly, to examine the significance of subjective norms (SN) on AoMB; Finally, to identify the interaction effect of SN and reason (R) on AoMB (R number 1 being perceived ease of use-PEOU and R number 2 being perceived usefulness (PU)).

2. Literature Review

Privacy, security of e-services, and convenience factors play a significant role in determining users' acceptance of electronic banking services (Lim et al., 2019; Poon, 2007; Zhou et al., 2021). Perceived technology security concerns were the most important factors, *inter alia*, in order to decide users' intention with regard to the adoption of e-banking (Rahi & Ghani, 2018). Security-related to e-services indicates the degree to which the customers trust a site and feel safe in providing sensitive private information (Zeithaml et al., 2000). Security is defined as the extent to which the user believes that using an application will be risk-free and the capability of the application to protect data against unauthorised access (Kim et al., 2010). Similarly, the Security aspect is defined as the degree to which an application user perceives that it is safe to disclose personal and financial information during interaction and transactions over the websites (Shareef et al., 2011). Furthermore, users are also assured that the service providers do not unveil or share their respective information with others or misuse it for any other varied purposes.

Moreover, several researchers suggested that online security consists of five core principles; integrity, privacy, verification, authentication, and non-repudiation (Taherdoost et al., 2011). Besides, another researcher suggested that the principal purpose of Security is to protect confidentiality, integrity, and availability (CIA) of data and systems (Charney, 2008). It was also identified that the constructs of e-Security as authentication, authorisation, and integrity (Lai et al., 2011). All real-life Security-related requirements are reflected in four security segments: availability, secrecy, non-repudiation, and integrity. Similarly, this can be extended with additional elements, including information security, such as availability, accountability, authentication, integrity, nonrepudiation, authorisation and confidentiality, etc. (Weippl, 2005).

In a research study conducted in Finland in the light of the technology acceptance model (TAM) it was proposed that e-banking acceptance can be modeled with the TAM variables of perceived usefulness and perceived ease of use (PU & PEOU) with four other variables referred to as perceived enjoyment (PE), information on online banking, Security and privacy, and the quality of the internet connection variables as derived from the available online banking acceptance literature (Al-Dmour et al., 2020; Thusi

& Maduku, 2020; Pikkarainen et al., 2004). A study conducted in Sri Lanka mainly focused on the analysis of customers' attitudes towards internet banking under four factors (TAM with two additional factors); PEOU, PU, perceived risk (PR), and subjective norms (SN). Attitude towards online banking has a strong positive relationship with PEOU and PU, while PR and the SN have weak positive relationships (Priyangika et al., 2016).

2.1 Conceptual Framework and Theoretical Perspective

TAM is an extension of the theory of reasoned action as found in the literature (Fishbein, 1975; Fishbein & Ajzen, 1975). Davis's technology acceptance model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) is applied extensively to explicate users' acceptance and usage of technology (Venkatesh, 2000). TAM was developed mainly by Fred Davis and Richard Bagozzi (Davis 1989; Bagozzi, Davis & Warshaw 1992). TAM is an adaptation of TRA for the field of information systems field. TAM was originally used to study internet banking (IB) adoption by Bhattacharjee (2001).

The particular research examined a post-acceptance application of TAM to understand the role of expectations in IB acceptance and continued use amongst United States banking customers. Another remarkable application of TAM in the study of IB adoption was presented by Suh and Han (2002 & 2003), who were the first to consider cross-national effects in their study of South Korean e-banking customers. Another prominent study combined TAM and commitment trust theory to understand continuance intentions (Vatanasombut et al., 2008). Attempts to extend TAM have generally been directed largely by one of the three following approaches: by integrating factors from interconnected theoretical models on customer adoption of technology, by means of integrating additional or alternative belief factors, and lastly by way of examining antecedents and moderators of perceived usefulness and perceived ease of use.

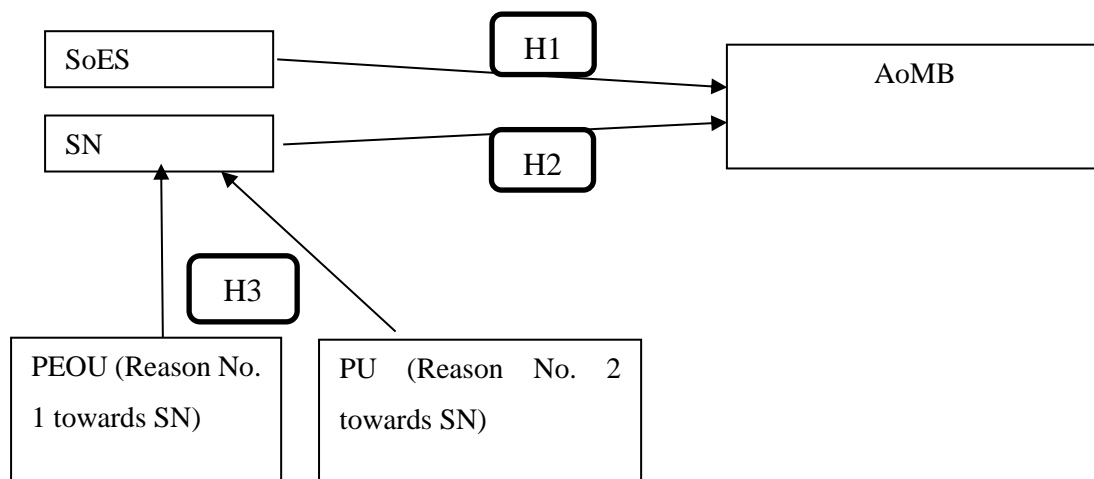
Similarly, the affiliation between attitudes and human behaviours within human actions is elaborated by the theory of reasoned action (TRA). This theory has been derived from the findings of the previous researches in social-psychology fields, persuasion models, and attitude related theories (Fishbein, 1967; Fishbein & Ajzen, 1975). SN is also one of the important determinants towards behavioural intentions and denotes the

way perceptions of relevant groups or individuals, such as family members, friends, peers, and related others, might affect the performance of the behaviour of a particular person (Fishbein, 1967). SN could be defined as the specific perceived social pressure to perform or not perform the behaviour by an individual (Albarracin & Ajzen, 2007). As stated by the TRA, individuals develop rather normative beliefs as to whether or not certain behaviours are acceptable (Fishbein & Ajzen, 1975). Beliefs form a person's perception of the behaviour and determining their intention to perform or not to perform the particular behaviour (Albarracin & Ajzen, 2007; Fishbein & Ajzen, 1975).

In identifying online banking adoption using unified theory, researchers have utilised a conceptual model similar to the one depicted below, where they have analysed the interaction effect of behavioural intentions (Khan et al., 2017). In a similar manner, Abdullah et al. (2019) used a somewhat similar conceptual model in determining online banking intention related interaction effect as well. Referring to the aforesaid, following conceptual model was proposed,

Figure 1

Conceptual model



2.2 Hypotheses of The Study

Among other factors, Perceived e-Security, PEOU, and PU are several influential factors that explain e-banking adoption in Sri Lanka (Hapuarachchi & Samarakoon, 2020; Jayasiri et al., 2015; Nayanajith & Damunupola, 2019). Even though businesses

have been creating efforts to spread the use of the services, Security is crucial in the effort of diffusion of the e-services (Lim et al., 2019). Several researchers claimed that the variables of perceived security, trust, antrust, and ease of use had a significantly positive impact on the adoption of e-banking and other e-services. (Damghanian et al., 2016; Nayanajith et al., 2019; Zhou et al., 2021). There was a significant effect of e-Security, among several other factors, on the adoption of electronic banking services (Masoud & AbuTaqa, 2017).

Security and privacy were also significant factors in the adoption of online banking in the Sri Lankan context (Hapuarachchi & Samarakoon, 2020). It was found that Security & privacy *inter alia* had a significant positive impact on behavioural intention to use online banking as well (Jayasiri et al., 2015). The study also strongly advocates that perceived security has the higher ability to predict and explain users' intention to adopt or use e-banking facilities. Likewise, researchers have found that the security aspect of having a positive effect on the customer acceptance of e-banking in different country perspectives as per studies (Damghanian et al., 2016; et al., 2021).

Considering the aforementioned facts following hypothesis was proposed,

H₁1: SoES predicts AoMB significantly

A positive effect of subjective norms has been discussed in tele-banking and online banking contexts (Sundarraaj & Wu, 2005). Another research on understanding the antecedents of intention to use mobile internet banking in India has also discussed the significance of subjective norms (Bryson et al., 2015). The importance of SN, perceived usefulness, and other factors in relation to acceptance of telebanking and online banking adoption have been identified by several researchers in different country perspectives (Alalwan et al., 2016; Brown et al., 2003; Bryson et al., 2015; Nayanajith et al., 2019d & 2019e; Nayanajith et al., 2020). Recommendations of friends have been significant in electronic banking adoption and customer satisfaction as identified by the researchers in Turkey and Kenya (Özer & Gürel, 2017; Simon & Thomas, 2016). The influence of both family and friends plays a major role in adopting various banking products and

banks, as noted from results of research studies (Tucker & Jubb, 2018; Ozatac et al., 2016). Referring to the above-mentioned facts following hypothesis was proposed,

H₁₂: SN predicts AoMB significantly

Another research found that empirical evidence for a positive relationship between PU, PEOU, and social influence on positive attitude towards mobile banking acceptance in relation to the Indian context (Deb & David, 2014). A subsequent study conducted on acceptance of electronic banking in the same country has identified empirical evidence for a positive relationship between PU, PEOU, and social influence on positive attitude towards mobile banking (Rakesh & Ramya, 2014). A conceptual model for mobile banking adoption has depicted the importance of SN in accepting mobile banking technology (Illia, Ngniatedema & Huang, 2015). Another study examining the influence/significance of subjective norms and compatibility in relation to mobile banking acceptance in Yemen identified that SN affects users' intention via the perceived usefulness and ease of use factors (Mutahar et al., 2017). In view of the aforementioned facts following hypothesis was proposed,

H₁₃: Interaction of SN and R predicts AoMB significantly

2.3 Operationalisation

Operationalisation provides a direction to measure each variable of the framework and translation into observable and measurable elements to develop an index of measurement of the concept. Operationalisation involves defining the constructs that need to be measured, considering the content of the measure, and the determination of a response format/scale. Amongst the two variables in TAM with regard to the technology adoption concept which is being used in relation to adoption/usage of electronic banking, the first variable: perceived usefulness (PU), is defined as the users' "subjective probability that using a specific application system will increase his or her job performance" (Davis et al., 1989, p. 985). Initially, this is defined in the context of one's job performance; PU was later used for many common tasks (as in the case of internet/online shopping) in non-organisational settings (Gefen, 2002). The second variable, named perceived ease of use (PEOU), is defined as "the degree to which the

user expects the target system to be free of efforts” (Davis et al., 1989, p. 985). Hence, PU is defined in this study as “the belief of the customer that the online banking is useful for the banking needs,” and PEOU is defined as “the belief of the customer that the online banking is free of hard efforts.”

In practice, technology alone is not adequate to ensure security (Zhang et al., 2012). There are several security elements that need to be addressed to escalate the overall security of electronic services, including the security of private information and marginal online purchase risks (Santos, 2003). Lebanidze (2004) introduced the collective six-dimensional security features, which were recognised as CI4A for the assessment of the security of electronic services. Likewise, Taherdoost et al. (2011) suggested that online security consists of five core principles. In addition, Charney (2008) suggested that the principal purpose of security is to protect confidentiality and introduce the framework known as ‘CIA’ of data and system. Lai, Tong and Lai (2011) also identified the constructs of e-security. According to Weippl (2005) there are four segments of security. Similarly, this can be extended with additional elements, including information security, such as availability, accountability, authentication, integrity, non-repudiation, authorisation, confidentiality, etc.

In the present study, security of e-services variable was formed by adopting perceived authentication, perceived availability, perceived confidentiality, perceived integrity, perceived non-repudiation, and privacy factors from previous studies (Hwang et al., 2007; Lai et al., 2011; Lebanidze, 2004; Taherdoost et al., 2011; Tsiakis & Sthephanides, 2005; Weippl, 2005; Yousafzai et al., 2010) as shown in Table 1.

Table 1

Operationalisation

Concept	Variable	Measurement indicator	Source
Technology acceptance	Perceived usefulness	Belief that using a particular system (online banking) will enhance the job performance	Davis et al., 1989
	Perceived ease of use	Belief that using a particular system will be free from effort	
SoES	Perceived authentication	The process of specifying individuals’ identity, that specifies whether	Taherdoost et al.,

		someone or something is who or what s/he/it claims to be.	2011
Perceived availability		Percentage of time while the system is operating.	Lai et al., 2011
Perceived confidentiality		Confidentiality means that the user is not granted the access to the information that s/he should not view.	Weippl, 2005
Perceived integrity		Mechanism to ensure that other parties do not intercept or alter system information.	Tsiakis & Sthephanides, 2005; Hwang et al., 2007
Perceived non-repudiation		It refers to the need to prove that a specific action has been done by an identity leaving no possibility of denying.	Lebanidze, 2004
Privacy		Customer's perception of her/his ability to control/monitor the collection, use, disclosure and subsequent access to her/his information	Taherdoost et al., 2011; Yousafzai et al., 2010
Theory of reasoned action	Subjective Norms	Subjective norms are determinants of behavioural intentions and denote the way perceptions of relevant groups or individuals for instance the family members, friends and peers, that might affect one's performance of the behaviour; the specific perceived social pressure to perform or not perform the behaviour by an individual	Fishbein, 1967; Fishbein & Ajzen, 1975; Albarracin & Ajzen, 2007

3. Methodology

In view of the ontological and epistemological grounds, this research study has been conducted pertaining to deductive methodology. Deductive methodology could be described as the top-down process in which the researchers arrive at a reasoned conclusion by logical generality of known fact/facts. That is, in simple terms, going from general to specific. Research methods under this technique include experiments, survey techniques, and observation. Quantitative research findings are particularly

descriptive, empirical, and in particular generalisable. In this study, deductive methodology and quantitative methods have been used. First of all, the questionnaire survey was deemed suitable for the type of data that the researcher gathered. The major part of the study is related to the respondents' perceptions of mobile banking and how these perceptions influence their adoption of mobile banking. Secondly, Questionnaires can be employed to examine and explicate relationships between numerous variables (Saunders, 2011). In the same way, there were additional reasons to use a questionnaire survey, including the necessity of a large sample and the fact that the cost of a questionnaire survey is much cheaper as against an interview survey.

The questionnaire's content validity is ensured through literature review and integrating the concerns raised by the e-banking experts in several leading private commercial banks in Sri Lanka. Construct validity is an important characteristic that is concerned with the extent to which a particular measure relates to other measures consistent with theoretically derived hypotheses concerning the concepts (or constructs) that are being measured (Blomberg et al., 2008; Saunders, 2011). Convergent and discriminant validity are the two subtypes of validity that constitute construct validity. The current study ensures both convergent and discriminant validity. Reliability of the scale is ensured via Cronbach's alpha.

Respondents of this present research study were the students of the Kelaniya University who possess mobile banking facilities of selected private commercial banks, and they were participants of the weekend study programmes conducted by the university. They were selected on a random sampling method as per registration numbers provided by the university. Data collection was executed through self-administered questionnaires from the respective respondents of this study. Altogether 400 questionnaires were distributed, and finally, 287 duly completed research questionnaires were considered for the final data analysis.

4. Results

Data analysis of the study was deployed using the IBM SPSS 20 package. The sample pertinent to the research consisted of a higher proportion of male respondents (52.6 %) in comparison to female respondents (47.4 %). Additionally, the majority of the

respondents (65.8 %) were advanced level qualified persons, and 11 % of the respondents were qualified as graduates, while postgraduate and professional qualification holders were recorded as 9 % and 14.2 %, respectively. In keeping with the age distribution statistics, the vast majority of respondents (64.5 %) were aged between 25–50 years, where married respondents count reported as 65.8 % when considering the marital status of all respondents. Given the figures of the analysis, 65.2 % recorded in the income segment between Rs.60,000/- to Rs.120,000/- Therefore, the socio-demographic characteristic structure of the research sample is consistent to examine the research issue in the specified context as most of the demographic and social features of the population are replicated by the designated sample of the current research study.

At first, a reliability analysis was performed to measure internal consistencies of the total scores for each scale through Cronbach's alpha coefficients (Field, 2013). Consistent with the findings, all the reliabilities for variables are found to be adequate since Cronbach's alpha values are higher than 0.7 (George & Mallery, 2003).

The Kolmogorov–Smirnov (KS) test is one of many goodness-of-fit tests that assess whether univariate data have a hypothesised continuous probability distribution. The most common use is to test whether data are normally distributed. Similarly, the assumption of equal variances (i.e. assumption of homoscedasticity) could be tested using Levene's test. Accordingly, K-S test ($p > 0.05$) as well as Levene's test ($p > 0.05$) and linearity test was performed to ensure normal distribution of data, homoscedasticity, and linearity aspects where the results for the said tests were not significant for the given tests. As per the descriptive statistics, variables have recorded high level figures as all the composite mean figures are above 3.66 threshold figure (where 5-point Lickert scale figures starting from strongly agree, agree, not sure, disagree and strongly disagree, have been converted to high, medium and low values in the following manner, 1-2.33, low; 2.34-3.66, medium; 3.67-5, high, respectively).

There were six constructs for the variable named as security of e-services and subsequently the composite mean was recorded at 3.71 while the dependent variable; AoMB has reported a mean of 4.39. Table 1 demonstrates the results of one-way

ANOVA test output, analysing the effect of SN on AoMB, which is significant ($p = .000$), where $F(1, 285) = 14.914$, at the initial analysis stage commencing the developing of hierarchical linear model.

Table 1

ANOVA test output

	Sum of Squares (SS)	df	Mean Square (MS)	F	Significance (S)
Between Groups	2.928	1	2.928	14.914	.000
Within Groups	53.448	285	.188		
Total	56.377	286			

In recent times, several researches have used hierarchical linear models in analysing effects on different factors towards adoption of online banking and banking chat bots as well (Dianat et al., 2019; Trivedi, 2019). Consecutively, table 2 illustrates the output of the hierarchical linear model (HLM) with only the fixed effect of variable of SN, where it is significant ($p = .000$) and similar to ANOVA, $F(1, 285) = 14.914$.

Table 2

HLM output-Type III Tests of Fixed Effects^a

Source	Numerator df	Denominator df	F	S
Intercept	1	287	3625.873	.000
Subjective Norm	1	287	15.623	.000

a. Dependent Variable (DV): AoMB.

Table 3 depicts the output of ANCOVA test (although this test was performed, it was not among the main objectives of the present study and same was performed to understand the covariate effect) with SoES variable as a covariate in determining the effect of Subjective Norms on AoMB. Based on this, SN does not predict AoMB ($p = .378$), $F(1, 284) = .648$. Nevertheless, there is a significant effect of SoES on AoMB ($p = .000$), $F(1, 284) = 634.65$.

Table 3*ANCOVA output-Tests of Between-Subjects Effects*

Source	Type III SS	df	MS	F	S
Corrected Model	39.852 ^a	2	19.925	342.488	.000
Intercept	35.458	1	35.458	609.450	.000
SoES	36.924	1	36.924	634.647	.000
Subjective Norm	.043	1	.043	.648	.378
Error	16.523	284	.057		
Total	5726.490	287			
Corrected Total	56.376	286			

a. R Squared = .706 (Adj. R Squared = .704)

As given below, table 4 demonstrates results of HLM with fixed effects of subjective norms and SoES. Still, subjective norm is not significant even though the SoES is significant which is identical to previous ANCOVA test output.

Table 4*HLM with fixed effects-Estimates of Fixed Effects^a (EoFE)*

Parameter	Est.	Std. Err.	df	t	S	95% Confidence Interval (CI)	
						Lower Bound (LB)	Upper Bound (UB)
Intercept	2.2480	.107701	287	20.873	.000	2.036059	2.460029
SN	-.02545	.029284	287	-.869	.385	-.083099	.032180
SoES	.590894	.023333	287	25.325	.000	.544969	.636819

a. DV: AoMB.

As depicted below, table 5 shows the results of HLM along with level 2 variable; the bank. This considers the covariation effect in between the banks by way of inclusion of the hierarchical/multilevel data structure and this assumes that the intercepts vary across the banks. This shows that, permitting the intercepts to vary across banks has made a difference to the previous model. Chi-square change (-2LL change) = -4.825 - -69.967 = 65.142, *df* change = 1, this change is highly significant as chi-square critical values with 1 *df* is 3.84 ($p < .05$) and 6.63 ($p < .01$); it could be noted that, fit of the model has significantly improved. Therefore, it is possible to note that the intercepts for the relationships between subjective norms and AoMB (whilst controlling for SoES) vary

significantly across different banks. Allowing the intercepts to vary, there is a new regression parameter for the effect of subjective norm, that is .1531 compared to -.0254 whilst the intercept was fixed. In other words, allowing the intercepts to vary over the banks, effect of subjective norm has become slightly higher and positive (.1531) from a lower negative value. This results in subjective norm being significant ($p = .000$), $F(1, 285.545) = 19.97$. Thereby demonstrating how researchers would have reached very different conclusions than those mentioned in this SoES, if they have disregarded the hierarchical/multilevel structure of data.

Table 5

HLM with level 2 variable (random intercepts; banks) results-EoFE^a

Parameter	Est.	Std. Err.	df	t	S	95% CI	
						LB	UB
Intercept	1.83480	.134014	31.515	13.691	.000	1.561661	2.107947
Subjective norm	.153149	.034271	285.545	4.469	.000	.085694	.220604
SoES	.629412	.021344	285.039	29.489	.000	.587400	.671423

a. DV: AoMB.

The inclusion of a ‘random intercept’ has significantly changed log-likelihood. Therefore, Table 6 displays the output with the addition of ‘random slope’. Chi-square change ($-2LL$ change) = $-69.966 - -116.426 = 46.46$, df change = 1, this change is highly significant as chi-square critical values with 1 df is 3.84 ($p < .05$) and 6.63 ($p < .01$); model fit has improved significantly when the ‘variance of slopes’ included; variability in slopes is significant.

Table 6

HLM with random intercepts (banks) and random slopes (SN) results-EoFE^a

Parameter	Est.	Std. Err.	df	t	S	95% CI	
						LB	UB
Intercept	1.75070	.193196	7.595	9.062	.000	1.301026	2.200388
SN	.203444	.114150	4.157	1.782	.147	-.108809	.515698
SoES	.634581	.019406	283.545	32.701	.000	.596383	.672778

a. DV: AoMB.

Since the variability in slopes is significant, researchers seek to identify whether the slopes and intercepts are correlated (or see whether they are covary). In the previous analysis ‘variance components’ assumed zero covariance in between intercepts and slopes. Therefore, only the ‘variance of slopes’ has been estimated

Now, Chi-square change is 4.982 (-116.425 - -121.407), df change = 1, model fit is not improved at $p < .01$ as chi-square critical values with 1 df is 3.84 ($p < .05$) and 6.63 ($p < .01$), subjective norm is not significant as per significant value; $p = .269$, Although, SoES is significant where p is .000, variance estimates for the intercept (.112) and slopes (.044) and their associated significance (-.062) (covariance of ‘slopes and intercepts’) based on Wald test, confirms this (as all the estimates are not significant). Since the covariance is (-), it depicts a (-) relationship between the intercepts and slopes. As the research looks at the effect of subjective norm on AoMB among four different banks, means that across these banks, as the intercept for the relationship between subjective norm and AoMB increases, corresponding value of the slope decreases. Variance of the slopes (.044) shows how much the slopes vary around a single slope fitted to the entire data set (while disregarding the bank out of which the data originated). This agrees with what the chi-square test has depicted: slopes across banks are not different significantly.

Consequently, it is resolved that the intercepts and slopes for the relationship in between subjective norms and AoMB (whilst controlling for SoES) do not vary across the different banking institutions, significantly. There is also a new regression parameter for the effect of subjective norms, which is .1590 compared to .1531 when the slopes were fixed, when it was allowed the intercept and slopes to vary. Put it differently, letting the intercepts to vary (over the banks), the effect of subjective norms has increased (although it is very slight) and still it is not significant ($p = .269$), where F value is $(1, 3.592) = 1.709$. This illustrates that though the hierarchical/multilevel structure of data been ignored, similar conclusion could have been attained in this setting, according to the analysis.

For respondents who are with subjective norm considering PEOU, subjective norm did not predict AoMB significantly ($p = .416$), $t(3.949) = .905$. The positive gradient ($b = .114$) showed that among these persons, AoMB is comparatively higher after the subjective norm compared to the control group. Furthermore, respondents who had subjective norm considering PU also, SN did not predict AoMB significantly ($p = .827$), $t(27095.493) = -.217$. Yet, the slope was negative ($b = -.0631$), indicating that individuals who had subjective norm considering PU, scored lower on AoMB, as against those who did not have subjective norm (though this is not significant).

Similarly, the interaction effect reflects the difference in slopes for the subjective norm as a predictor of AoMB in those who had subjective norms considering both PEOU and PU (slightly positive slope and a slightly negative slope, accordingly). Hence, it is noted that AoMB (after controlling for SoES) was lower for those who have subjective norm in view of PU than those who had subjective norm in view of PEOU. Demonstrating that for those who had subjective norm taking account of PEOU, the subjective norm has led towards the easiness and thus, their adoption increase as against those who had subjective norm taking account of PU, would have realised that usefulness was not the issue for them, where AoMB has recorded a lower magnitude.

Table 9

HLM rerun output distinctly for different 2 reasons

SN taking account of PEOU

Parameter	Est.	Std. ErR.	df	t	S	95% CI	
						LB	UB
Intercept	2.32346	.238606	9.995	9.738	.000	1.791783	2.855153
SN	.114819	.125827	3.949	.905	.416	-.237320	.464958
SoES	.525894	.027650	187.694	19.020	.000	.471349	.580438

a. R = PEOU

b. DV: AoMB.

SN taking account of PU

EoFE ^{a,b}							
Parameter	Est.	Std. Err.	df	t	S	95% CI	
						LB	UB

Intercept	3.18838	.363902	27751.58	8.762	.000	2.475118	3.901647
SN	-.06312	.290607	27095.49	-.217	.827	-.632626	.506584
SoES	.327727	.008926	91.127	36.715	.000	.309996	.345458
a. R = PU							
b. DV: AoMB.							

5. Discussion of Results

Empirical results given in the preceding section show that AoMB has been significantly predicted by SN as per ANOVA results. Nevertheless, in ANCOVA with SoES as the covariate, SN was not significant in predicting AoMB (Although analysing of this was not a primary objective, the same was performed to understand the covariate effect). Both HLMs of random intercepts and random intercepts with random slopes exhibited that SoES is significant and SN is significant only in the random intercepts model scenario. HLM assuming the ‘covariance of random intercepts and random slopes, showed that model fit has not been increased significantly ($p < .01$) at 1 % level. Moreover, empirical evidence supports a positive relationship of SN and security of e-services variables on electronic banking adoption (Al-Dmour et al., 2020; Perera, 2013 as cited by Rajapakse, 2017; Thusi & Maduku, 2020). The incorporation of R and interaction of R and SN to HLM; SN, SoES, R and interaction of all the variables significantly predict AoMB. In accordance with the final HLM, it is possible to note that AoMB, upon controlling for SoES, was comparatively lower for the respondents who had SN bearing in mind perceived usefulness than those who had subjective norm in view of perceived ease of use.

Furthermore, the interaction effect reflects the difference in slopes for the subjective norm as a predictor of AoMB in those who had subjective norms considering both PEOU and PU (slightly positive slope and a slightly negative slope, accordingly). Hence, it noted that AoMB (after controlling for SoES) was lower for those who have subjective norm in view of PU than those who had subjective norm in view of PEOU. Demonstrating that for those who had subjective norm taking account of PEOU, the subjective norm has led towards the easiness and thus, their adoption increase as against those had subjective norm taking account of PU, would have realised that usefulness was not the issue for them, where AoMB has recorded a lower magnitude.

6. Conclusion and Implications

The current study was conducted to determine the significance of subjective norms, SoES, Reason towards subjective norms and interaction of subjective norms and reason of AoMB in the context of Sri Lankan private commercial banks, in which data had two of the levels of hierarchy; viz individual respondents and the banks to which the individual respondents belonged. HLM, alongside 'random slopes, random intercepts with provisions for the covariance of random intercepts and random slopes', exhibited that subjective norms, SoES, underlying reason and interaction of reason and subjective norms, factors are significantly predicting the AoMB. The differences in slopes for subjective norms, as a predictor for AoMB, in view of both the reasons named as perceived usefulness and perceived ease of use, were indicated by the interaction effect. Empirical evidence of this research has supported the first and second hypotheses postulating the significance of subjective norms, SoES, towards AoMB. Further, the interaction of subjective norms and reason towards the same also predicted AoMB significantly, being the third hypothesis.

The present study is also subjected to several limitations which confine the reliability to generalise the research findings to the whole population. At the outset, as respondents of the study were the students of the University of Kelaniya who are using mobile banking services, it could be possible to obtain different results in the case of conducting the research in another context as the respondents may not precisely replicate the whole Sri Lankan mobile banking customers of the selected commercial banks. As there were restrictions and limitations due to the cross-sectional nature of the study and sample selection, research in time to come could be executed with a higher representation of the whole population to support the diverse research findings. Simultaneously, findings of the research could be used by the commercial banks and IT vendors developing banking applications, regulators and connected stakeholders with a view to enhance the mobile banking adoption level through the country. Easy to use, cost efficient and secured mobile banking services alongside high penetration of mobile and internet connections with substantial smart mobile devices may drive greater financial inclusion for the betterment of the society at large whilst unearthing considerable profitability and performance expectations for the Sri Lankan banking fraternity for mutually rewarding long-term relationship. The originality of the research

is the particular hierarchical linear model analysis and the adaption of TAM and TRA were used in this research given the specific research context. Future research could be performed in quest of varied findings in relation to different country, cultural and societal contexts by integrating associated models pertinent to the particular study area and different perspectives.

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NETWORK RELATIONSHIP MARKETING STRATEGY FOR THE SUCCESS OF MICRO, SMALL AND MEDIUM ENTERPRISES IN SRI LANKA

Sathana, V.

Department of Marketing, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka
vsathana@univ.jfn.ac.lk

Abstract

MSMEs have been facing huge problems and challenges to sustain their business in the challenging environment in Sri Lanka. Network relationship marketing is a unique strategy to take a competitive advantage in the challenging environment and change marketing activities. Little efforts are enforced to understand the network relationship marketing for MSMEs in Sri Lanka. This research explores the dimensions of network relationship marketing strategy in MSMEs, which serve as decisive dimensions for developing network relationships in the MSME market. This research applied qualitative methodology. Data were obtained by interviewing owners of MSMEs in Sri Lanka. The coding method was applied to identify the dimensions of the network relationship marketing strategy. Three major dimensions were produced for network relationship marketing: intensive network relationship marketing, business network relationship marketing, and social network relationship marketing strategy. The dimensions of intensive network relationship marketing strategy are network relationships with customers, distributors, suppliers, employees, and competitors. Business network relationship marketing includes the network relationship with government institutions, intermediary institutions, and research institutions. Social network relationship marketing dimensions are a marketing tool, communication convergence, and power to influence. The vital part of the research is to produce new theories and dimensions of variables of network relationship marketing strategy for MSMEs. Indeed, this research revealed that network relationship marketing practices help MSMEs to manage competitive nature in a dynamic environment. This study adapted the network relationship marketing strategy as an intangible resource to take advantage of MSMSs MSMEs. The finding of the research represented and generalised to the MSMEs in the developing countries.

Keywords. Network relationship marketing strategy, MSMEs, Intensive network relationship marketing, Business network relationship marketing, Social network relationship marketing.

1. Introduction

The role of marketing has increased its scope in research and in answering prominent questions related to their survival (Gilmore et al., 2001; Gunawardana, 2016). Over the last three decades, micro to large-sized organisations have sought relationship marketing to enhance their business effectively (Reijonen & Laukkanen, 2010; Yan & Chew, 2011). Networking is a precise marketing mechanism for MSMEs suffering from resource constraints (Carson & Gilmore, 2000; Lin & Lin, 2015). Klimanov and Tretyak (2018) mentioned that the development of network relationships varies according to the context of different business environments. They also mentioned that different network structures and value driving mechanisms must be incorporated into organisations to manage the dynamic environment. MSMEs with little knowledge of foreign markets always face the choice of trying to decide which markets to enter (Carson & Gilmore, 2000). Lin and Lin (2015) indicate that network relationships appear influential in MSMEs' market selection and entry mode. All networks are not essential for all organisations (Lin & Lin, 2015). Fedorenko and Berthon (2017) expressed that focusing on the collaborative multi-stakeholder value and co-creation network relationships are essential for organisations. Entrepreneurs need to address issues or problems of marketing around a two-part construct. First, loosely define the issue or problem and then make a list of people who might offer an opinion on the issue (Gilmore et al., 2001).

Moreover, The Covid-19 environment and developing nature of Sri Lanka created problems for MSMEs to conduct their business (Gunawardana, 2020). Indeed, Gilmore et al. (2001) stressed that MSMEs need to build networking platforms; it is a prominent part of the success and survival of MSMEs. Hynes and Elwell (2016) described that organisations need to examine constructive technologies with social networking in which markets are changing, and organisations try to map the movements of the companies better to understand the firms' actions during the process. Most MSMEs in

developing countries use web-based communication as web web-based communicationlike social media, e-mail, etc. The level of analysis in network and interaction research differs according to the actors. The focus of MSMEs on network relationships is witnessed remunerative (Lin & Lin, 2015; Zeng et al., 2010). The owner or manager of MSMEs needs to develop their network relationship intelligently to gain a competitive advantage in the challenging environment (Liu & Yang, 2019; Nobre & Silva, 2014) and make changes in marketing activities (O' Donnell, 2014).

Based on the previous literature, seminal marketing strategies have been generated, but only a few studies have researched marketing strategies for the Sri Lankan context (Shivany et al., 2015). Other specific marketing strategies were developed commonly for all businesses, not for the MSMEs in crisis environments, specially covid-19 (Deyshappriya, 2020; Gunawardana, 2020;). The MSME marketing theory focused on the network marketing strategy (Baker & Hart, 2008). Furthermore, earlier research on the MSMEs suggested theories and variables of network marketing strategies (O'Donnell, 2014; Zeng et al., 2010). Gatignon et al. (2017) mentioned that firms need to adopt an innovative social networking model considering the changes in the environment and availability of new technology. Nobre and Silva (2014) suggested that new technology-based networking is essential for MSMEs. Network marketing strategy is rooted in relationship marketing strategy (Gummesson, 1994).

The network-oriented relationship theory was produced as an inter-organisationally-oriented theory exploring complex relationships and proposing a network for the business environment (Moller & Halinen, 2000). . Earlier researchers formulated a network-based relationship marketing theory, even though variables and measurements were not suggested. The co-operation networking was applied for MSMEs in earlier research; the co-operation network relationship was adopted and tested on MSMEs (Zeng et al., 2010). Social network marketing strategy is part of network marketing strategy (Gummesson, 1994; Vasquez & Escamilla, 2014). In Sri Lanka, only limited efforts are enforced to understand the network relationship marketing in MSMEs (Gunawardana, 2016; Sivatheepan et al., 2018). From this evidence, it is clear that the relationship and networking needs are getting more important attention in the marketing field for MSMEs in crisis environments. Only a few organisations have realised the

need for network relationship marketing and its dimensions. Hence, it is essential to know what dimensions of network relationships need to be followed by MSMEs for a short time to manage the crisis environment and a long time for success and survival. Hence, this research aims to explore the dimensions of the network relationship marketing strategy for the MSMEs in Sri Lanka.

2. Literature Review

The literature review includes the nature of MSMEs in Sri Lanka and literature on network relationship marketing. Regarding SME development, Sri Lankan national policy framework categorised MSMEs as manufacturing and service sectors. Further, MSMEs have not less than 300 employees and an annual turnover exceeding Rs.750 Million (Gunawardana, 2016). The department of census and statistics (2013/2014) categorised MSMEs as industry and construction, trade, and services. Moreover, MSMEs are defined based on the person engaged “for industry and construction, trade and services less than 200, 35 and 75 respectively. MSMEs have limited resources such as finance, human: line, lack of expertise, and limited impact in the marketplace (Gilmore et al., 2001). MSMEs have small budgets, but smaller budgets are less complex because there is less room. MSMEs have a more straightforward structure and less restriction on internal financial resources (Loucks et al., 2010).

The network relationship is formed on the *Guanxi*, and it is defined as the chosen relationship (Lin & Lin, 2015). *Guanxi* is derived from trust and commitment. *Guanxi* deals with everyday interactions, business relationships, networking, and transaction activities within firms. Resource advantage (R-A) theory is the theoretical foundation of relationship marketing (Hunt et al., 2006). This theory is related to a general idea of competition that explains relationship marketing as an intangible resource for the organisation. Relationship marketing developed ten relationships with relational exchange and strategic alliance (Klimanov & Tretyak, 2019).

They are the relational exchanges between producer and their supplier of goods; the relational exchanges relating with service providers; the strategic alliances between firms and their competitors; the strategic alliances between nonprofit organisations and a firm; the relational interactions between government and firms; the relational

exchanges between firms and local, state, or national governments; the long term relational conversations between ultimate customers and firms; the relational exchanges of involving channels of distribution; the relational exchanges involving functional departments; the relational exchanges between employees and firms; and the within-firm relational exchanges. In MSMEs, many considerable responses are witnessed for essential relationship behaviour (Vegholm, 2011; Yan et al., 2011).

The outcome of relationship marketing is the building of a unique company asset called a marketing network. The relationship marketing concept explains that an effective competitor in the global economy needs to be an effective cooperator in some networks (Hunt & Morgan, 1994). Fundamental definitions of networks include personal contact networks (PCNs); social networks; trade and business networks (Baker & Hart, 2008). A marketing network includes the firm and its supporting stakeholders: customers, suppliers, employees, distributors, advertising agencies, retailers, universities, scientists, etc. The firm has created profitable business relationships. Increasingly severe competitions are among whole networks of firms, with the reward going to the firm that has created a better network (Morgan & Hunt, 1994).

Networks emerge when the relationship becomes many and the complexity. The networks diversely grow and change actors, shapes, and sizes. Marketing becomes the creation, utilisation, and maintenance of this network (Gummesson, 1994). MSMEs involve in various networking without knowing their involvements; simultaneously, these networks are not regularised by owners of MSME. MSMEs apply proactive or passive networking according to the problems and issues. Indeed, the nature of networking varies continuously, occasionally, frequently, or infrequently. The level and nature of networking vary according to the need and problems of the MSMEs.

Further, Baker and Hart (2008) denoted that technological change and development increasingly impact MSMEs' way of doing business and marketing as World Wide Web, the Internet, and E-Marketing. Now mainly, this phenomenon is applied to marketing activities of MSME worldwide. This innovative technology has vast influences on marketing platforms and performance.

Vasquez and Escamilla (2014) demonstrated one of the important marketing strategies is social networking. Further, they defined social networks as bounded groups of individuals, organisations, communities, or societies that are linked, where members interact, discuss and exchange knowledge. MSMEs are major driving forces behind the country's economies. Even though they are not fully exploiting their creative capacity, they are applying this internet and web-based technology at a fundamental level. But this technology is possible to bring flourishing opportunities for MSMEs. Most popular social networks are Twitter, Youtube, and Facebook; this popularity is measured according to the level of activity presented by its members (Vasquez & Escamilla, 2014).

This social network helps to jump the hurdles of geographical barriers to interact over the world. Most of the social networks are successfully implemented for the medical, tourism, and educational field. The general implementation and flow of social network practices help MSME manage its competitive nature in a globalised environment. The firms have to utilise social network platforms like Youtube, Blogger, LinkedIn, Twitter and Facebook to spread information and market their products. Organisations apply the mega concepts and best practices to use social networks. Social networking techniques are applied as a marketing tool to take competitive advantage of MSMEs. It helps to save resources by the interaction between the firm and users. Recently, a dynamic and competitive environment contains huge users for the web-based social network. This dynamic situation stresses MSMEs to retain customers and keep relationships with all stakeholders of MSMEs (Baker & Hart, 2008).

The network-based received great high attention in marketing literature. It includes an interaction mechanism among participants of the firm (Klimanov & Tretyak, 2019). Network-based relationships are more inter-organisation-oriented, exploring complex relationships and postulating a network for the business environment. The complexity of inter_ organisationally -oriented approaches have focused on the exchange between buyers and suppliers of various types and between many actors at the same time (Klimanov & Tretyak, 2019; Moller & Halinen, 2000). The inter-organisational aspect is concreated based on the resource and relationship through the social and relational exchange of inter-department functions. Inter organisationally-oriented culture thinks a

diverse network of actors they are shaped by cooperation and competition. Companies and dyadic relationships between companies are embedded in networks of relationships and channel systems. There are three focuses in this network based relationship marketing namely, dyadic relationship, network relationships among actors and marketing functions. Dyadic relationship displays the traditional aims as explaining the network relationship between organisations. The network relationships among actors are several as among individuals, companies, and all other stakeholders. The network relationship perspectives arise from the marketing perspective of organisations. Parties in a relationship may be active; strong interdependences are predicted among them due to the heterogeneous resources in the market; hence, making substitution is difficult. "Competition and co-operation are the primary forces shaping relationships and networks (Moller & Halinen, 2000).

Relationships are raised based on trust and commitment (Morgan & Hunt, 1994). Organisations keep relationships with various stakeholders to deal with everyday transactions which are called relationship marketing. This relationship marketing was developed as ten dimensions of relational exchange and strategic alliances. Dynamic, ever-changing, and crisis environments include various exchanges and transactions in different ways with multi-stakeholders called networks (Fedorenko & Berthon, 2017). Networks emerge when the relationship becomes many and high complexes. (Moller & Halinen, 2000). The networks diversely grow and change actors, shapes, and sizes. Marketing becomes the creation, utilisation, and maintenance of this network (Gummesson, 1994). Even though, Social network marketing strategy is the innovative part of network relationship marketing strategy (Gatignon et al., 2017; Hynes & Elwell, 2016). Network-based relationship marketing is briefly described as the management of interdependencies between multiple business actors. The tasks and challenges of network relationship marketing involve broader and deeper interaction with external partners, both customers and other stakeholders (Lin & Lin, 2015; Moller & Halinen, 2000).

3. Methodology

This research aims to explore the dimensions of the network relationship marketing strategy of the MSMEs in Sri Lanka. This study applied the qualitative research method.

The researcher collected secondary data as concepts, theories, and research and primary data from interviews. The sample for this study was entrepreneurs of micro, small and medium enterprises. The initial sample selection was based on purposive sampling, which was followed by snowball sampling. The unit of analysis in this study was the MSMEs. Purposive sampling was utilised to select the samples. A total of 57 owners were involved in the study. Out of the 57 interviews, eight were rejected by unsatisfactory responses. All interviews were recorded with the prior consent of the participants. The participants represent different industries with varying age groups and experiences.

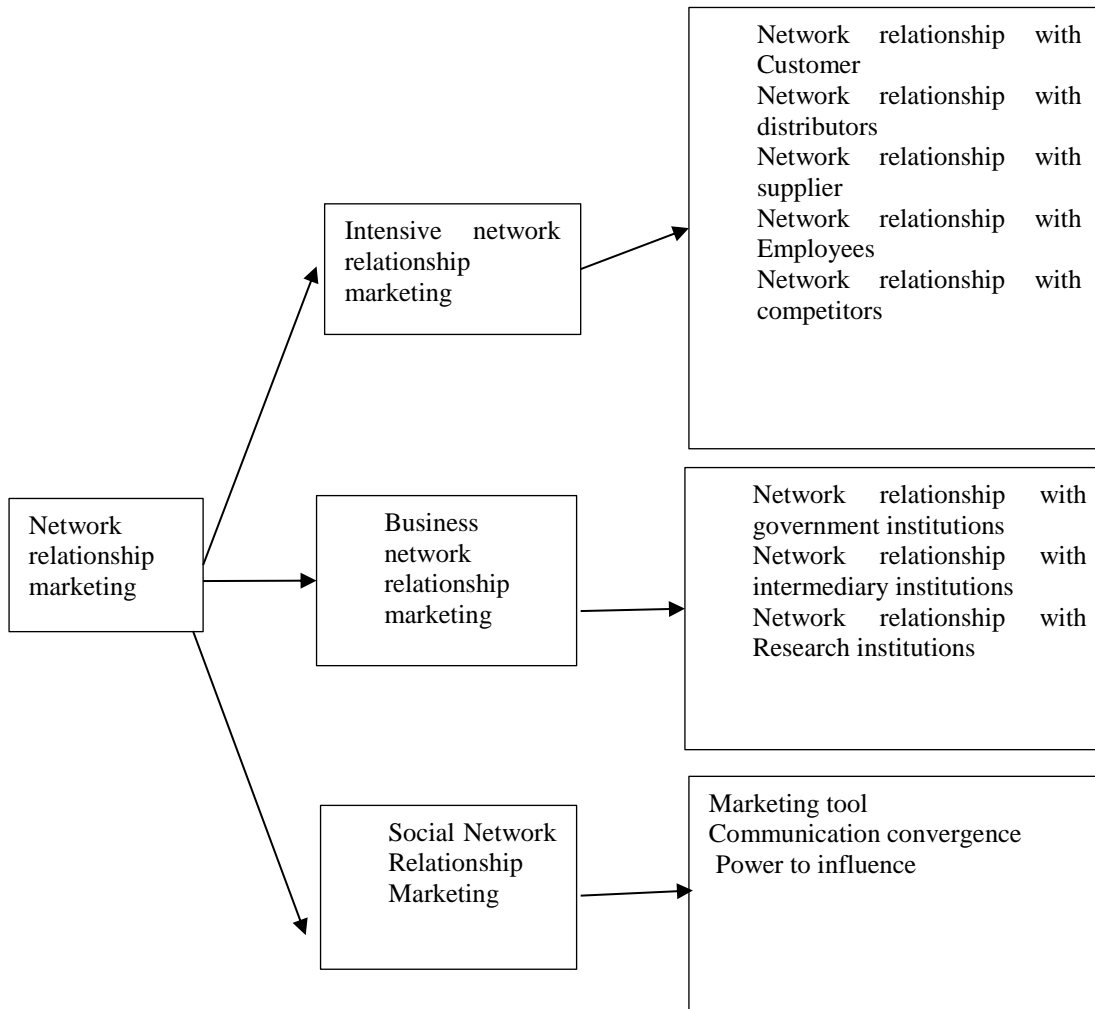
Further, the respondent of MSMEs belonged to either of the following industries in Sri Lanka: coconut products (5), palmyra (5), food products (8), cloth (5), printing products (5), handicraft (5), education (2), hotel (5), constructions (5), beauty parlours (2) and pharmaceutical industries (2). The time for the interview for each respondent varied from 45 to 60 minutes. All interviews were recorded, and the transcript was prepared based on their answers.

A coding method was applied to analyse the collected data. Under this method, the data were categorised based on the themes and concepts. The interviews were transcribed, and each transcription was checked with the recording to ensure the interviewee was well-captured. Transcribed data was then read through several times to identify the codes for the data obtained. Similar codes were put together as -sub-themes. Then, themes were allocated to similar sub-themes. Finally, themes were categorised according to the characteristics of each variable (Annexure 4).

4. Finding and discussion

Figure 1

Model of Network relationship marketing strategy



Based on the analyses of transcripts, written notes of the interviews, and literature, it can be argued that the network relationship marketing strategy of MSMEs in Sri Lanka is not based on marketing mix elements. MSMEs have developed distinct network relationship marketing to sustain themselves in the competitive market. The dimensions of network relationship marketing strategy were identified amongst Sri Lankan MSMEs based on the actors and roles of network relationship grouped across three categories, namely, intensive network relationship, business network relationship, and social network relationship (Figure 1).

4.1 Intensive Network Relationship Marketing

MSMEs need to have intensive network relationship marketing to grow and develop their business. It includes five intensive network relationships and employees (Annexure 1). These actors are the most vital part of network relationship marketing strategy. Zeng et al. (2015) also mentioned that the partners for intensive network relationships are customers, suppliers, producers, distributors, and competitors. Overall, the existing, intensive network relationship marketing denotes the relationship between customers, suppliers, competitors, distributors, and employees.

4.1.1 Network Relationship with Customers

Based on the interview, vital values are produced for the customer network. In this covid-19 environment, MSMEs are directly dealing with the customers. The owner of the coconut industry mentioned that:

We typically engaged in deep and strong networking with existing customers and built strong links with them. The main motivation for this networking activity is to generate repeat business from these customers and indirect motivation; these customers generate positive word-of-mouth recommendations to new customers.

The *network relationship with customers* is an integral part of organisational success for MSMEs. Owners require and acquire suitable customers for the MSMEs. The network relationship marketing for MSMEs is focused on potential customers and customers. The intensive level of network relationship was identified with the customers. MSMEs have been spending a lot of time and keeping continuous network relationships with customers. The *continual repeat business* arises through networking with potential and new customers. The *valuable information* about their competitors is retrieved from the customers; this information is regarding the *pricing management, products, promotion and other mixes of competitors*.

Moreover, several researches have studied the link between networking corporations with 'firm's customers. Fritsch and Lukas (2001) denoted that collaboration with the client creates more product innovations. Fischer and Varga (2002) noted that customer networks represented the most frequent form of network relationship marketing. Amara and Landry (2005) mentioned that a high level of novelty is reached through the

information source from customers or clients (Amara & Landry, 2005). Previous research highlights that customers are the leading information source for organisation (Kingsley & Malecki, 2004). The highly satisfied existing customers give positive *word-of mouth* (Carson et al., 1998). This result proves that customers as the most prominent networking tool.

4.1.2 Network Relationship with Competitors

This finding explored the *network relationship with competitors* for MSMEs. Food producers mentioned that:

Our products did not meet approved quality standards, and we have been encountering difficulties in selling the product in the market. The joining with the trade association takes an active role and helps to address this problem.

Having network relationship with diasporas in the same business in foreign countries gave huge benefits, they facilitated marketing opportunities for local natural products, encouraged to produce quality products with attractive packaging, advised to innovate all processes in business, and gave knowledge about the product in foreign countries and investment facilities.

Competitors *provide ideas about new products and processes, capital, equipment and industry trend of MSMEs*. MSMEs collaboratively arrange trade shows and international and national exhibitions. MSMEs meet outside competitors in the industry by arranging the forum. It provides the sources of new knowledge and ideas. The networking with competitors *generated information about potential new suppliers*. This network relationship focused on the *in home market (local competitors), national and international competitors, business associations, diasporas and business colleagues and friends*. This network relationship is also related to the trade or professional association network relationship. MSMEs maintain an extensive level and strong network relationship marketing with competitors. The most important benefit from network relationship marketing is to *obtain information about competitors*.

The previous researchers described that competitors' association helps access the innovative developments (O'Donnell, 2004). Moreover, these networks create the possibility to meet people/ rivals within the industry. Competitors desire to *share potential information about suppliers, competitors, and customers*. Particularly the

critical piece of *information which are regarding the bad debts, affordability, and their ability to pay off credits regarding customers, are gathered from networking with competitors* (Jack et al., 2004). Previous research highlighted that “this network relationship leads to avoid mutually destructive and aggressive competition (Jack et al., 2004). A study on MSMEs in China revealed that a network relationship with international firms offered innovative ideas and new market opportunities to foothold into a market (Liefner et al., 2006).

4.1.3 Network Relationship with Suppliers

The *network relationship with suppliers* for the MSMEs brings tangible market opportunities. MSMEs deals with potential and other suppliers. The owner of MSMEs(Palmyrah) explained as:

We maintain good relations with suppliers to negotiate better prices for the valuable raw materials. Further we acquire the 'supplier's expertise and knowledge regarding our resources.

These network collaborations eliminate the competitive nature to access raw materials and keep reasonable prices for the MSMEs. MSMEs should endeavour to follow smooth network relationship marketing to access the best value for their services; owners should continuously monitor a group of suppliers through these network relationships.

This network relationship marketing helps increase product quality and service quality and reduce the cost of productions for MSMEs (Sharma & Sheth, 1997). Network relationship with supplier offers the brand name, brand image, and reputation from the quality raw material for MSMEs (Hoang & Antoncic, 2003). Moreover these networking relationships provide information about the competitors (Jack et al., 2004). Chung and Kim (2003) described that firms induce produce quality, flexible nature, and market adaptability by this networking; it reduces the risk and leads time of product development in firms. In particular, suppliers are valuable sources of information to develop or improve products (Nieto & Santamaria, 2007).

4.1.4 Network relationship with employees

All functions are closely integrated, and information is communicated internally and externally via formal and informal communication among employees and departments.

The owner of the printing business explained that:

We have great employees, they are very up to date with what they know, they are attending to training, workshop and seminars, they are participating in decision making regarding the productions.

This network relationship also reveals that MSMEs receive advice from their *employees* regarding an issue of firms. Employees are categorised as permanent and temporary. MSMEs have a strong network relationship tie with these employees. The owners of MSMEs seek confirmation of their decisions from employees. Moreover, the key benefit of network relationship marketing with employees is gaining ideas about the new products. The key strategy with inter-department and cross-sectoral networks developed smooth information flow and resource movements to firms. It is important to integrate all employees of departments or units to create a smooth process in MSMEs.

Moreover, focusing on this formalised network relationship activity generated new knowledge and protected from the threat of knowledge loss (Cisi & Sansalvadore, 2019). MSMEs need to interact with workers to receive advice regarding an issue of firms. The owners of MSMEs allow employees to participate in Planning and decision marketing (Corredoira & McDermott, 2018). Firms gain ideas for new product offerings, generate new knowledge, and protect from the threat of knowledge loss through this network relationship.

4.1.5 Network Relationship with Distributors

Network relationship reduces the unethical behaviour of intermediaries by imposing reasonable prices and clearly displaying discounts and other promotional aspects to customers. The owners of MSMEs (cloth productions) are mentioned ,

We have network relationship tie with distributors to prevent switching these distributors from our business to 'competitors' business. Further, they request and impose less allowance on the sales of the product.

Network relationship with distributors improves the sales of MSMEs. Distributors are categorised as wholesalers, retailers, agents, logistics and transportations. These suppliers are essential to MSMEs, and MSMEs have extensive and strong network relationships with the suppliers. The findings of this research revealed that the network relationship with distributors facilitates the smooth supply of products to customers. The intensive network relationship provides ideas to produce a valuable product from the feedback of customers. O' Donnel (2004) also mentioned that the network relationship facilitates to share of the 'suppliers' market and expertise knowledge and customer feedback. This network relationship makes adequate sales and a smooth supply chain of MSMEs.

4.2 Business Network Relationship

Government creates policies to tie and interact MSMEs with government departments, research organisations and intermediary institutions (Annexure 2). The network's relationship with Government departments include innovative service departments, information service departments and supervisory service department. The intermediary institution covers the technology intermediaries, technology market, industrial associations and venture capital organisations. The research institutions are universities, colleges, technical institutions, specific research institutions and centres. Owners of MSMEs have the diverse network contacts with each institutions and they receive a variety of business benefits and increase business capacity.

4.2.1 Network Relationship with a Government Institution

The MSMEs need to interact with *government institutions* to start their business and register the business. The owner of the pharmaceutical industry described that:

We started our business after the training given by the government departments. In addition, they were instructed to follow the environmental rule, quality standards and innovative intellectual knowledge transfer. Initially, we approached government institutions (local authorities) to get approval to start a business, then we approached divisional institutions to get a license and environmental authority to complete environmental rules. Moreover, we approached IDB and the department of industries to get training. We approached banks to get loan.

The MSMEs haven't a dominant level of network relationship with the government institutions. Government institution facilitates machinery, equipment, training and development and provide information regarding tax, interest rate and environmental rules and regulations. Moreover, time to time MSMEs are informed new policies regarding the tax, international export rules and infrastructure development activities by government departments, especially in this Covid- 19 situation.

The government in U.K. and U.S. created policies to innovate the small institutions (Hewitt-Dundas, 2006). In Sri Lanka, six policy intervention strategies were produced by the Ministry of Industry and Commerce under the National policy framework for sustainable MSMEs development viz, "*enabling environment, appropriate technology, entrepreneurial culture and skills development, access to finance, market facilitation and research and development*" (Gunawardana, 2016). Moreover, this policy focuses on ten major business support areas: finance, technology, access to information and markets, business development services, linkage formation, infrastructure, legal & regulatory framework, industrial relations and labour, entrepreneurship skills, and environmental issues. Moreover, suitable government institutions were assigned to work with these policies. Ministry of industry and commerce works with enabling environment, ministry of skill development and vocational training works with entrepreneurial culture and skill development (Gunawardana, 2016). Ministry of science, technology and research deals with modern technology applications and research and development. The Central bank of Sri Lanka works for access to finance. TheThe Ministry of Industry and Commerce, Chambers, EDB and Department of Commerce offer market facilitations. The government created important network relationships among formal and informal governance and MSMEs (Biggs & Shah, 2006).

Moreover, the purpose of this network is enhancing innovative technology and knowledge by establishing public institutions. Earlier studies described that government intervention towards MSMEs is not in a sufficient level (Doloreux, 2004). Matt and Wolff (2004) stressed that strong collaboration of government with the business institution is essential to develop MSMEs. This collaboration endeavours for the long run for the success of MSMEs.

4.2.2 Network Relationship with Intermediary Institution

The first and most important benefit of networking with these actors in the financial and personnel assistance they receive. A more general networking benefit is the information, advice, and reassurance that the managers receive from the intermediary institutions. Micro producers of the construction industry are mentioned as:

We access repair services regularly, or from time to time to repair our machinery, we rarely access media, but sometimes we access consultancy service from private and public institutions to manage our problems.

There are no limits to the functions from the Intermediary institution. These functions are sharing production technology, including the packaging, labelling and quality standard technology, communication. Financing, technology innovations and commercialisation (Nieto & Santamaria, 2007). MSMEs follows only the average level and strength of network relationship with intermediary institutions. Howells (2006) revealed that intermediary firms who play diverse roles for MSMEs with the aspect of the financing, technology innovations, training, media, venture capital and product designing; build bridges in different ways with MSMEs (Zeng et al., 2010, p. 184). Intermediary institutions serve in communication, forecasting, diagnosing, information gathering, intelligence sharing, outcome evaluation and commercialisation (Nieto & Santamaria, 2007).

China promoted MSMEs by establishing "Productivity Centers" Technology Business Incubator" and "Productivity Centers" (Zeng et al., 2010). MSMEs get the technical information and laboratory tests from the network of intermediary institutions jointly working with universities and firms. MSMEs have personal networks as a networking resources to strength their startup businesses and access networking consultant to survive for long term (Franco, 2018). MSMEs need to interact with intermediary institutions to access sources from outside of the firms, namely, new technologies, new market opportunities, economies of scale and sharing risk which are beyond the capabilities of MSMEs (Fischer & Varga, 2002).

4.2.3 Network Relationship with Research Organisations (R.O.s).

Firms conduct researches regarding the development of MSMEs and provide intellectual knowledge support; they are called *research organisations (R.O.s)*. MSMEs interact with universities, colleges, technological institutions and research centres.

The owner of the food industry mentioned:

We are interested in getting consultancy, accounting system, improvement ideas, green products, food testing, innovative products and market research information from the researches of universities.

Universities, technological institutions, colleges and research development boards of specific sectors have been conducting research to develop the MSME sector (Drejer & Jorgensen, 2005). Nieto and Santamaria (2007) stressed that government encourages R.O.s to collaborate with specific industries. Firms related to the communication sectors, technology services, machinery producers and material producers are corporately conducting research with universities and technical institutes. Various advantages from the collaboration with the research institutions; mainly sharing knowledge, technology transfer, R& d outsourcing, joint research activity, technology trade, formal collaboration in research, training, producing skilled workforce and graduates with diverse knowledge. Liefner et al. (2006) diagnosed the support activities of research departments and universities toward MSMEs.

This research institution helps to reduce transaction costs, mend the market failure, reduce the risk of firms and increase productivity. MSMEs need to collaborate with educational institutions and research institutions to access new knowledge in developing countries (Liefner et al., 2006). Universities produce skilful and intellectual graduates, which is seedbed for MSMEs in Malaysia (Razak & Saad, 2007). Networking collaborations with university drive powerful changes in technology and science. MSMEs considers the research firms as crucial partners for facilitating supportive services.

4.3 Social Network Relationship Marketing

Social network relationship marketing is described with three dimensions in this research: marketing tool, communication convergence, and power to influence

(Annexure 3). The owners of MSMEs understand social media networking as the cheapest communication tool to develop their business. They have intensive level and average network relationships through social media.

Owners of beauty parlours mentioned as:

We have been using Facebook to disseminate information about our products. Many customers access Facebook and buy the products through social media information; it is a very cost-effective tool to disseminate information.

Managers of Small and medium-firm mentioned as:

We have been facilitating e- word of mouth(WOM) for our hotel business to express customers' experience and referral programmes to induce customers to purchase our services.

Vasquez and Escamilla (2014) explained the dimension of namely marketing tool, communication coverage and power to influence. It was identified that media participation through social network relationships is not adoptable for this MSME domain in Sri Lanka. The advantages and disadvantage of social media networking is sensitive and vary to business to business. The user involvement in the media allows and co-creates for the own advertising. Sharma et al. (2020) proved that social network is a powerful tool to induce customer engagement toward the product and service of MSMEs. Social networks can provide valuable, transparent, real-time information and consist of massive and rapid dissemination of a message over the web.

This information flow through the social network creates challenges for marketing services and products due to the little control for social network communication. Firms disseminate information and direct suggestions to brokers, buyers, and the general public considering social media policies. Social media can empower the user to influence the behaviour of others through word of mouth communication. Users transmit information regarding the first instance satisfaction through emails; then through referral programmes of friends, this network is built around a common market segments. Nobre and Silva (2014) described that WOM plays a role in expanding awareness, sharing information about the company, greater coverage of consumers at territorial level, and managing negative WOM impacts. Social media creates benefits and

difficulties; this situation creates uncertainty and risk to the consumer. Firms and users plan well to apply these strategies to reduce the risk. Moreover, Fuller and Matzler (2007) indicated the virtual customer integration, that is, the customers are virtually integrated into a company's process which could provide valuable input for new product development.

5. Conclusion

Network marketing strategy is rooted in relationship marketing strategy (Gummesson, 1994). The network-oriented relationship the complex relationships and postulates a network for the business environment (Moller & Halinen, 2000). Networking explains complex relationships; the relationship and networking needs are getting more important attention in the marketing field. The outcome of relationship marketing is the building of a unique company asset called a marketing network. Social network marketing strategy is part of network marketing strategy. Only a few organisations have realised the need for network relationship marketing and its dimensions. MSMEs have faced huge problems and challenges to sustain their business in Sri Lanka (Gunawardana, 2016; Sivatheepan et al., 2018). Liu and Yang (2019) mentioned that the owner or manager of MSMEs needs to develop their network relationship intelligently to gain a competitive advantage in the challenging environment and make changes in marketing activities. In Sri Lanka, only limited efforts are enforced to understand the network relationship marketing in MSMEs (Gunawardana, 2016; Sivatheepan et al., 2018).

This research aims to explore the dimension of network relationship marketing strategy for the MSMEs in Sri Lanka. Many researchers explained the network relationship from different angles. Lin and Lin (2016) revealed that SMEs strongly depend on the network relationship for their success. Klimanov and Tretyak (2019) generated a network based business model for the B2B market, which included interactions among actors and addressed the complex nature of interactions. Jones et al. (2013) generated a strategic network marketing model for SMEs as an inter-firm network which includes a social network as one of the networks of SMEs. Hunt and Morgan (1994) described thirty views of relationships. They also explained that the relationshipmarketing embeds the network marketing.

Networking links various actors or roles. Relationship ties different actors and roles. Marketing is rooted through each and every links and relationship. MSMEs have been facing huge challenges and problems. This research suggests network relationship marketing as an effective marketing strategy to tackle these problems and challenges. Indeed, based on the issues and needs of MSMEs, network relationships were determined.

Qualitative research was conducted to find out the dimensions and factors of the network relationship marketing strategy. The coding method is used to find out the theme of dimensions. This research explored the three novelty dimensions of network relationship marketing strategy, namely, intensive network relationship marketing, business network relationship marketing and social network relationship. Moreover, these three dimensions include factors. Intensive network relationship marketing includes five factors: network relationship with customers, suppliers, competitors, distributors, and employees. Business network relationship marketing includes the factors: network relationship with government institutions, network relationship with intermediary institutions, and network relationship with Research institutions. Social network relationship includes factors of marketing tool, Communication convergence and power to influence.

Network-based relationship marketing has special features, and they are efficient in describing the particular network relationship marketing phenomena in the domains of exchange. Three concepts are present under this research; first, the networking creates only the connections among several actors or roles; second, relationship ties these actors or roles with MSMEs a long time; third, marketing perspectives are embedded on all these network relationships. Research produced *intensive network relationship marketing* for MSMEs. Furthermore, the intensive network relationship of MSMEs describes the severe and day to day interactions, which mean continuous and frequent network relationship marketing with MSMEs. The second variable was produced from this research as *business network relationship marketing*. This variable included factors as government institutions, intermediary institutions and research institutions. Indeed, MSMEs interact occasionally and not on a regular basis with business networks. The third dimension of network relationship marketing is social media network relationship

marketing which is focused on the three roles as a marketing tool, communication convergence and power to influence. MSMEs keep high-level social media interaction with essential actors continuously and frequently in this covid-19 situation. The owners of MSMEs need to know their issues at hand, keep network relationship marketing with actors and decide the level and nature of network relationship with them.

6. Contribution of this Study

MSMEs are back born of the economy of Sri Lanka. MSMEs have been facing huge problems and challenges in this covid-19 situation; struggling to compete with large firms; their survival is questionable in Sri Lanka. Marketing strategy is perceived as a significant factor to develop a business. Marketing strategies contribute highly to mend the problematic situation and provide solutions to the problems. The nature of MSME domain differs from the nature of large firms, and this study concerned the specific nature of MSMEs to adopt marketing strategies. This research contributed by introducing a *network relationship marketing strategy* as the effective solution for the problems and challenges of MSMEs. This research produced a new concept of *network relationship marketing strategy*. It is rooted in the relationship marketing theory. Indeed, this research applied resource advantage theory as an underpinning theory. Especially, another important contribution of this research is social media networking adapted to the network relationship marketing strategy, which displays the importance of social media networking for MSMEs in this crisis environment. This research identified three novel dimensions of network relationships for MSMEs. In summary, this research contributed by suggesting this strategy for the sustainable development of MSMEs in Sri Lanka.

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Annexure 1*Model of intensive network relationship marketing*

Network relationship	Actors
Customer	Potential customer Customer
Supplier	Potential supplier Supplier
Competitors	In the home market Outside the home market Business unions/ associations Diasporas Business colleagues and friends
Distributors	Whole sales Retailors Agents Logistics Transportations
Employees	Permanent Temporary / causal

Annexure 2*Model of Business network relationship marketing*

Network relationship	Actors
Government institutions: innovation service departments Information service department Supervision service department	Ministries: Industry & Commerce, Finance, Science, Technology & Research, Skills Development & Vocational Training, Rural Economic Affairs Central Bank Public sector agencies Provincial government/ agencies Provincial associations District secretariat/ Grama Niladhari
Intermediary institutions: Technology intermediaries Technology market Industrial associations Venture capital organisations	Service Providers: GIZ, Chamber/ Trade Associations, NEDA, IDB, EDB, ITI, VTA, NAITA, SLITA Banks: Government and private Banks
Research institutions	Universities, Technical colleges, SLIATI and other specific research institutions and centres

Annexure 3

Model of social network relationship marketing

Network relationship	Roles
Social networking	Marketing tool Communication convergence Power to influence

Annexure 4

Manual code

Responses from owners/ Managers of MSMEs	First theme	Final concept
Few Customers Poor customer retentions Poor customer satisfaction No new customers Law sales for existing customers Customer ask different designs Customer select products Customer switch from our firms Customers are not continuously book the rooms Regularly interact with customers Customers directly ask their need and preferences Customisation Information about their competitors Word of mouth	Network relationship with customer	Intensive network relationship marketing
Quality supplies Inadequate supplies Affordable supplies Fluctuating supplies Switching suppliers High bargaining power of suppliers Reduce cost of productions	Network relationship with supplier	
National Competitive products International Competitive products High quality competitive products Innovative competitive technology Adequate supply chain of competitors Share potential information	Network relationship with competitors	

Provide ideas				
Arrange trade shows and exhibitions				
Distributors refuse to sell our products	Network	relationship	with	
Distributors ask low price	distributor			
Intermediaries sell our products high price but pay for us low price				
Distributors create packaging, labeling and branding our products.				
Distributors have more bargaining power				
Employees are daily workers.	Network	relationship	with	
Request more salaries	employees			
Not accept the EPF and ETF system				
Expect more training and development				
Want part time work				
Request overtime work				
participate in Planning and decision making.				
Get permission to start our business.	Network	relationship	with	Business
checks frequently our business nature and environment	Government institution			network
Register our business in DS office				relationship
Environmental certificate to start our business pay tax				marketing
Innovative intellectual knowledge transfer				
Innovative specialised field knowledge				
Innovative application in marketing				
Training and development service				
Machinery and equipment services				
Provide essential information on time				
Tax payment information				
Labor law information				
New policies regarding SMEs				
Interest rate information				
property right information				
Quality standard information				
Environmental protection				
Low cost advertising in newspapers, radio and TVs				
Production technology,	Network	relationship	with	
Packaging technology	Intermediary institution			
Labeling technology				

Quality standard technology		
Marketing technology		
Accounting technology		
Repair service		
Technology improvement services		
Power services		
Transport services		
Diverse industrial associations		
loan facilities		
Inadequate finance to invest in our business		
Interest free loan		
Financial support		
Research work with different disciplines	Network relationship with research	
Consultancy work of university member	institutions	
Environmental forecasts from university research institutions,		
Political stability and policy forecast		
Green manufacturing and service		
Resource based productions and improvements		
Accounting knowledge dissemination		
Marketing intellectual dissemination		
Helps me to access raw materials	Marketing tool	Social Media
Interact with stakeholders through the social media		network relationship
Advertise our product through social media		marketing
Gives information about competitive products	Communication convergence	
Inform about products to customer through social media		
Maintain web pages to communicate information		
Give information about supplier		
Give information about distributors		
Arrange to share their experiences through the social media	Power to influence	
Rate the positive and negative experience		

FACTORS AFFECTING GREEN PURCHASE BEHAVIOUR OF COSMETICS PRODUCTS: WITH SPECIAL REFERENCE TO PUBLIC SCHOOLS FEMALE TEACHERS IN RATHNAPURA DISTRICT

Gunarathna, W. D. I.

Faculty of Management, Uva Wellassa University, Sri Lanka
dulakshigunarathna@gmail.com

Ven. Wachissara, P. Thero

Faculty of Management, Uva Wellassa University, Sri Lanka

De.Silva, P. O.

²Faculty of Management, Uva Wellassa University, Sri Lanka

Abstract

Consumer behaviour has evolved as a result of increased community awareness of various environmental issues, which has led to green product purchases. The purpose of this study was to determine factors that affect the green purchase behaviour of green cosmetics products. The data for this study were collected by using a self-administrated questionnaire which was given to 150 teachers in public schools to achieve research objectives. Survey data were analysed using Partial Least Square – Structural Equation Modeling by using Smart PLS statistical package. The current study has adopted a deductive research approach under the quantitative research category. Moreover, applying the theory of Planned Behaviour (TPB), the conceptual framework has been constructed. Based on this theory, attitude, subjective norm, and perceived behavioural control are identified as variables in this study. The results indicate that attitude, subjective norm, and perceived behavioural control significantly impact the purchase intention of green cosmetics products. The findings of the study provides marketers with a clearer understanding to develop their strategies towards green cosmetics products. Marketers and respective parties like the government and policymakers can understand developing new policies relating to green cosmetics products. Although environmental issues are an emerging problem in Sri Lanka; still there are very few studies that have discussed observe factors that influence green purchase behaviour.

Therefore current research would be benefitted to fill the empirical gap by contributing new literature regarding green behaviour in Sri Lanka.

Keywords. Green purchase behaviour, Green cosmetics, Female professionals, Theory of Planned behaviour, Smart PLS

1. Introduction

Environmental issues and being health-conscious have posed greater concern in recent decades (Yahya et al., 2015). According to Rahman, economic progress and development have been associated with negative environmental consequences; on a global scale, resulting problems such as climate changes; scare resources, global warming, depletion of ozone, solid waste, deforestation, ecosystems depravity, and biodiversity losses (as cited in Karunaratna et al., 2017). Unlike other Asian countries, Sri Lanka struggles with rising levels of toxic air waste, exposure to excessive road traffic noise, high rates of garbage disposal, and steadily decreasing landfill sites in most urban areas (Samarasinghe & Samarasinghe, 2013). With an increased level of social and environmental pollution, both individuals and business organisations are now concerned with the natural surroundings in Sri Lanka (Karunaratna et al., 2017). As a result, companies have started to modify their actions to tackle social and environmental problems as a way of their social responsibility. It is currently evident that some business industries, such as apparel, cosmetics, hotels, and tourism, and the consumer goods industry, have embraced eco-friendly business strategies (Samarasinghe & Samarasinghe, 2013).

According to Leslie (2014), it is clear that cosmetics products have a significant contribution to environmental pollution, researchers have identified cosmetics products use chemical synthesis technology which can negatively affect human health, and also, they contain significant levels of plastic and polythene materials as packing materials for cosmetics products. Therefore, it can increase plastic waste and marine pollution. Simply, the bottles holding shampoos, moisturisers, and other skincare products must be created in such plastic coverage that it is not easily degradable. Therefore, it can cause to increase in solid waste in Sri Lanka (Patel, 2009). Moreover, there has been a considerable negative contribution to human wellbeing as well as animal welfare. From

an international perspective, it was revealed by the United States (US) Food and Drug Administration (FDA), that their complaints database contains 21000 adverse events reported in connection with cosmetics complaints, while most complaints in the database include rashes, hair loss, and other dermatological problems, although more serious illnesses such as cancer or severe allergic reactions can affect the use of cosmetics. These international views also prove the problem regarding the adverse effects of cosmetics properly. Even in Sri Lanka, these issues have been faced recently. Although the impact of beauty culture activities has increased daily, people intend to increase the trend of purchasing cosmetics without considering any negative effects, some caused by improper procedures done by beauty centres and other companies because of factors beyond anyone's control. Thus, responsible parties in the country have tried to enforce customer protection regulations. According to the Beauty and the beast news in 2012, the dark side of the cosmetics products by indicating side effects. Moreover, senior Food and Drugs Inspector Amith, 2012 has stated, “Last year only 65 complaints were reported from Colombo, and 80 from other areas, and pilgrims are the biggest offenders when it comes to smuggling cosmetics” (Beastnews, 2017).

Moreover, animals are used to test the safety of cosmetics as a standard practice for many businesses (Kapoor et al., 2019). Every year, millions of animal carcasses used in research laboratories are discarded and most polluted with poisonous and dangerous chemicals. With an increase in the awareness of such harmful actions, there is a growing interest among consumers for natural cosmetics products, recycled packaging, and other cosmetic green elements (Joshi & Rahman, 2015). But the problem is that how many people have adopted the purchase of green products (Joshi & Rahman, 2015). To understand the green movement in Sri Lanka, a realistic approach is to explore how consumers in the country are aware of and responsible for environmental problems and how these perceptions are reflected in the plan to encourage environmental actions concerning green consumption (Samarasinghe & Samarasinghe, 2013). The National Cleaner Production Centre in Sri Lanka (NCPCSL) has researched the Market Awareness Survey of Sustainable Consumption in 2018 (Kumarasena, 2008). Based on this survey, it has shown that 99 % of the impact on the environment is caused by consumption activities. Additionally, in Sri Lanka, 79% of consumers tend to select green products instead of normal products. Moreover, 60% of consumers know the

term “green products”. It appears that there is a practical gap in consuming green products. Accordingly, this study is going to concentrate on how consumer attitudes, subjective norms, and Perceived Behavioural Control reflect the green purchase behaviour with special reference to green cosmetics, by using female teachers employed in public schools.

Environmental issues can be considered as emerging problems in Sri Lanka; however, still, there are very few studies that have discussed to observe factors that influence green purchase behaviour regarding the cosmetics segment in the Sri Lankan context (Karunaratna et al., 2017). Additionally, several studies claim that there has been a gradual increase in the environmental consciousness of consumers. Besides that, some of the studies also claim that there has not been a gradual increase in the environmental consciousness of consumers. Therefore this is called an empirical gap. Hence, to fill this empirical gap, this study is focused on identifying the factors affecting green purchase behaviour towards green cosmetics among public school female teachers in Sri Lanka.

2. Literature Review

2.1 Theoretical Background

To explain green purchase behaviour, ample studies have concluded that a range of factors affects on green behaviour of customers by integrating a situational or individualistic approach (Yatish et al., 2016). The studies have revealed that values, attitudes, purchase intention, and behaviour are the main trajectories of green products purchasing behaviour (Kozar et al., 2013). Furthermore, many scholars have incorporated the Theory of Reasoned Action (TRA) (Ajzen, 2002) and the Theory of Planned Behaviour (TPB) (Ajzen, 2002), which are considered mainstream theories to evaluate purchasing behaviour (Joshi & Rahman, 2017).

2.2 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) encapsulates the elements of values, attitudes, purchase intention, and behaviour (Ramayah et al., 2010). Furthermore, TRA has stated that human activity is influenced by green behaviour with regards to two key factors, which are human behaviour (attitude) and social standards (subjective norms) (Ajzen, 2002; Ghazali et al., 2017; Joshi & Rahman, 2017). Nevertheless, the TRA refers only

to actions in which there are no external or internal impediments existing that may potentially prevent the behaviour after the intention to perform the behaviour has been formed (Hong & Swinder, 2012). In an attempt to minimise this criticism, TRA has been developed to the Theory of Planned Behaviour (TPB) by including a third variable known as Perceived Behavioural Control (PBC), which indicates the ability of a person to undertake the behaviour under consideration under the assumption that an individual behaves in a rational manner considering the ramification of his or her actions (Kumar, 2012). Therefore, to determine consumer intention as well as behaviour in a wide range of green areas, current research is going to contribute to the Theory of Planned Behaviour.

2.3 Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed from the Theory of Reasoned Action (TRA), is a prevailing theory that explains and reveals the motivational influences on individual behaviour. It has been widely used to predict the behavioural intentions and actual behaviour of a person (Ajzen, 2002). Planned behaviour theory (Ajzen, 1986) postulates three conceptually independent predictors of intention; behavioural attitude, subjective norm, and perceived behavioural control (Ajzen, 2002). Those three elements are known as 'behavioural intention,' which in turn affects behaviour (Ajzen, 2002). Planned Behaviour theory has helped determine consumer intention as well as behaviour in a wide range of green/pro-environmental areas (Kim & Chung, 2013). These empirical pieces of evidence proved their applicability and robustness. Therefore, the present study is going to contribute to the theory of Planned Behaviour, by implementing variables such as attitude, subjective norms, and perceived behavioural control to observe consumer green behaviour.

2.4 Green Cosmetics

Green Cosmetics represents a new edge for developing nations (Kapoor et al., 2019). Today's transition to becoming 'sustainable' is not only a basic need but also an opportunity for businesses and consumers (Kapoor et al., 2019). Green cosmetics is defined as "being a multifaceted construct for the preservation of the environment, minimisation of pollution, responsible use of non-renewable resources, and animal welfare and species preservation" (Lin et al., 2018).

2.5 Public Schools' Female Teachers

Among general consumers in the cosmetic industry, women gain priority over men and, a variety of literature have proven that being green consumers and supporting green cosmetics required sufficient financial support (Lin et al., 2018). According to Kim and Seock (2009), it was very difficult for consumers who lived on daily wages to purchase green cosmetics frequently since most green cosmetics targeted the higher market. Therefore, When considering female consumers who are engaged in professions school teachers are more suitable when the study on consumer green behaviour, because previous literature (Özden, 2008; Said et al., 2005; Tuchman, 2019) has indicated teachers play a significant part in determining the successful implementation of environmental education than others because they guide pupils to sustainable lifestyle through guiding and shaping the young generation to adopt a sustainable lifestyle (Said et al., 2005). It was demonstrated that teacher's attitude, knowledge, and behaviour towards the environment (Said et al., 2005). The researcher is going to consider public school female teachers over private school teachers because the researcher can access a large sample size within the public school sector (census, 2019).

2.6 Green Purchase Behaviour

Green Purchasing Behaviour (GPB) is referred to as the probability and willingness of a person to provide preference to products having eco-friendly features over other traditional products in their purchase considerations (Randiwela & Mihirani, 2015). Additionally, Ali et al. (2011) stated "it's very important to predict the sales of new products and the repeat purchases of existing products" (as cited in Lasuin & Ching, 2014). Therefore it's very important in marketing literature. Moreover, green purchasing can be defined as buying environmentally friendly products or so-called green products. Further, green purchasing can be defined as purchasing or buying products that can reduce the environmental impact (Lasuin & Ching, 2014).

2.7 Attitude

Attitude refers to an individual's favourable or unfavourable appraisal of the performance of concerning behaviour (Ajzen, 2002; Chaudhary & Bisai, 2018). Yadav and Pathak (2017), has stated "attitude can be seen as a confidence of the personality

and assessment of the effect of behaviour”. Based on the research conducted by Kumar in 2012, environmental knowledge and health-conscious have a significant relationship with attitude (Kumar, 2012). Based on the above findings, environmental knowledge and health-conscious have been taken as the dimensions of this study to identify how attitude influences green purchase behaviour.

2.8 Subjective Norms

Subjective norms are the conviction of the individual in the norm, surrounded by people, and the encouragement of the individual to obey the norm (Diyah & Wijaya, 2017). Social influence and social media have a massive effect on the purchase of green products under subjective norms (Shen et al., 2012). Based on the above findings, social influence and social media have been taken as the dimensions of this study to identify how social norms influence green purchase behaviour.

2.9 Perceived Behaviour Control (PBC)

Ajzen (2002) refers to Perceived Behavioural Control as the degree of control perceived by a person over the conduct of the actions. The perspectives of scholars have revealed PBC as one of the best predictors of human purpose and actions across a wide variety of green goods and services, including organic food and cosmetics (Joshi & Rahman, 2015; Rachbini, 2018; Yadav & Pathak, 2017). Sparks et al. (1991) have pointed out that PBC reflected both self-efficacy and controllability and significantly influenced the Perceived Behavioural Control (Kumar, 2012; Vermeir & Verbeke, 2007). Based on the findings of various scholars, the findings present, self-efficacy and controllability have been considered as two dimensions to explain Perceived Behaviour Control.

2.10 Impact of Attitude on Green Purchase Behaviour

Ajzen (1986) has stated that if a person has a positive attitude toward the conduct of behaviour, he tend to undertake a certain behaviour. Several studies, such as Chan and Lau (2001), Kalafatis et al. (1999), Tarkiainen and Sundqvist (2005), have shown the positive link between customer attitudes and behavioural intentions for green product purchase decisions in different societies (Randiwela & Mihirani, 2015). Therefore, the following hypothesis was developed based on these empirical and theoretical findings.
H₁: There is a significant positive impact of attitude on green purchase behaviour.

2.11 Impact of Subjective Norms on Green Purchase Behaviour

In previous studies, the positive perception of significant others such as friends, family, peers, and relatives of green products has been reported to significantly impact an individual's green purchase intention (Chaudhary & Bisai, 2018). Moreover, several studies also found a significant positive impact of subjective norms of consumer green intention (Alam & Sayuti, 2012; Joshi & Rahman, 2017). Therefore, the following hypothesis was developed based on these empirical and theoretical findings.

H₂: There has a significant positive impact of subjective norms on green purchase behaviour.

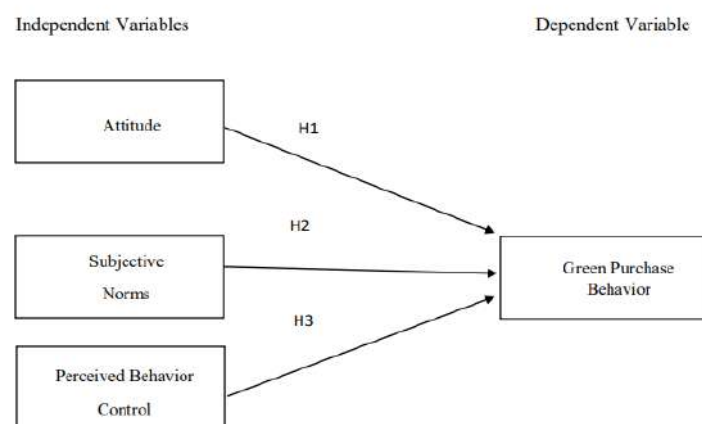
2.12 Impact of Perceived Behaviour Control on Green Purchase Behaviour

Perceived Behavioural Control refers to an individual's perceived ease or difficulty in performing a particular behaviour (Maichum et al., 2016). According to previous literature, there has been a significant and positive impact of Perceived Behaviour Control on green purchase behaviour (Alam & Sayuti, 2012; Kaufmann et al., 2012; Yadav & Pathak, 2017). Therefore, the following hypothesis was developed based on these empirical and theoretical findings.

H₃: There has a significant positive impact of perceived behaviour control on green purchase behaviour.

Figure 1

Conceptual Framework

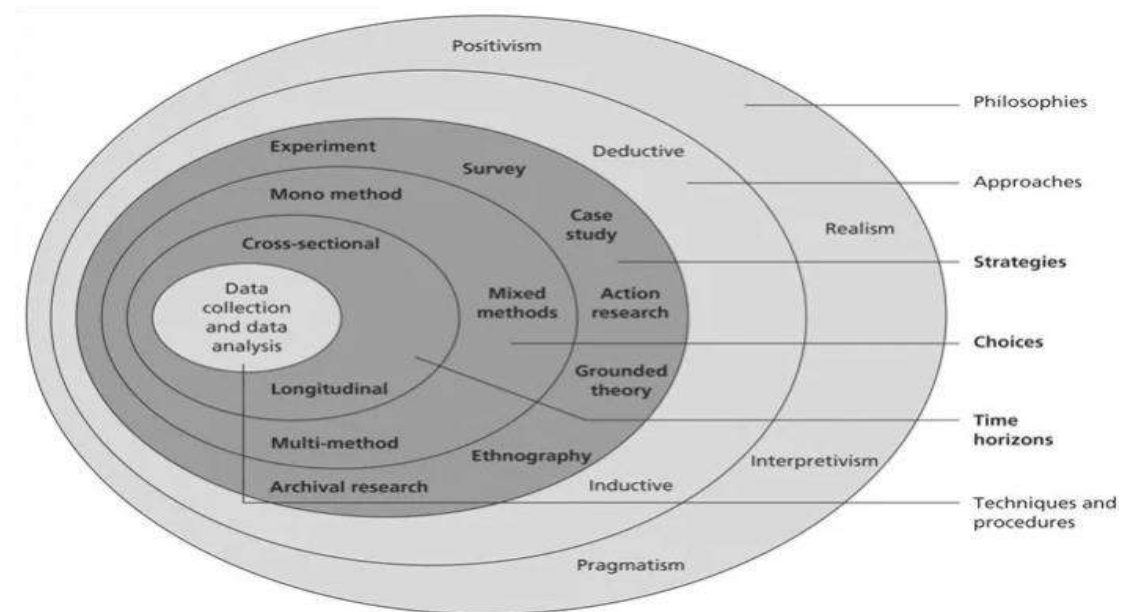


Source: Theory of Planned Behaviour (Ajzen, 1986)

3. Methodology

Figure 2

Research onion



Source: Saunders et al. (2009)

3.1 Research Philosophy

Positivism as a research philosophy is based on the premise that ‘only’ phenomena with quantifiable and collectible data could be tested. Therefore, to test these discernible social facts, researchers rely on the theory of Planned Behaviour to establish their hypotheses. This current study is going to adopt a positivist research philosophy that relates to empirical knowledge.

3.2 Research Approach

Based on Saunders et al. (2009), the main research approaches are the deductive approach and the inductive approach. An inductive research approach starts by defining a particular target fit for the research and during the process of developing a theory would be generated with the help of distinct research methods (Larsson, 2019). On the other hand, the deductive research approach develops the hypothesis or hypotheses upon a pre-existing theory and then develops the research approach to test it (Larsson, 2019). The current study is going to adopt the deductive research approach. The reason

for that, this study is considered under the quantitative research category and already has an existing theory.

3.3 Research Strategy

The survey method is undertaken as the research strategy of this study.

3.4 Time Horizon

In this study, the time horizon was cross-sectional

3.5 Techniques and Procedure

The present study is going to adopt quantitative research techniques as a technique.

3.6 Data Collection Method

Data would be obtained from primary sources by using a self-administrated questionnaire given to 150 teachers in the public school to achieve research objectives.

3.7 Research Designed

Since this study approach is a deductive study that followed the quantitative principle, the emphasis was placed on testing the theories.

3.8 Population

The population is defined as the entire group of people, events, or things of interest that the researcher wants to investigate and wants to make observations based on sample statistics (Majumdar, 2015). The target population in the current research was female teachers working in public schools in the Rathnapura district. According to the annual school census in 2019, there are 600 government schools in the Rathnapura district. Out of them, there are 9834 female teachers. When considering private schools in the Rathnapura district, there are only 39 female teachers. Therefore researchers can access a larger sample size when considering public schools over private schools. Therefore researchers move with public schools as a population.

3.9 Sample Technique

The convenience sampling technique and purposive sampling technique are used as the sampling technique.

3.10 Sample

A sample is a subset of the population and consists of members of the population (Kwakye & Morel, 2012). Among 600 public schools in the Rathnapura district, the study has considered only ten leading public schools. According to the Annual School Census of Sri Lanka in 2019, these ten leading schools are evidenced of having the highest number of teachers. Therefore, the researcher can go through the highest amount of sample size.

Based on the previous literature, the researcher has determined the sample size of this research. One hundred fifty respondents have been determined based on the studies of Arshad et al. (2014) and Rashmi et al. (2017) (Table 1).

Table 1

Sample Size

Paper	Methodology	Analysis method	Sample size
Rashmi et al. (2017)	Survey	Structural Equation Model	150
Arshad et al. (2014)	Survey	descriptive, correlation, and factor analysis	150
Shen et al. (2012)	Survey	Regression model	109

Source: Literature

3.11 Sample Size

Table 2

Sampling size of respondents

Public Schools	Respondents
Malwala M.V	18 Respondents
Sumana Balika	15 Respondents
St. Aloysius College	21 Respondents

Sri Sumana M.V	9 Respondents
Ferguson High School	22 Respondents
Convent of the Child Jesus	10 Respondents
Sivali M.M.V	14 Respondents
Prince College	16 Respondents
Dodampe Sri Rahula M.V	15 Respondents
Elapatha M.V	10 Responders

Source: Researchers' Construction (field survey, 2020)

4. Data Analysis

4.1 Structural Equation Modeling Technique

The Structural Equation Modeling (SEM) technique is one of the modern and advanced analytical tools which is mainly applied for social sciences studies (Hair et al., 2014b). Therefore, SME assist in identifying the impact of factors on green purchase behaviour in this study.

4.2 Partial Least Squares (PLS) Structural Equation Modeling

PLS estimates the path coefficients that maximise the R^2 values of the projected variable. It is based on the causal modelling method of statistical thinking and also focuses on the prediction of a specific set of hypothesised relationships, which maximises the explained variance in the dependent variables. (Hair et al., 2014b).

4.3 Data Analytical Tool

Collected data supposed to analysing by using “Statistical Package for the Social Sciences (SPSS)” and Smart PLS”.

4.4 SPSS Analytical Tool SPSS

SPSS analytical tool assists to obtain descriptive statistics, graphs, ANOVA, *t*-Test, and factor analysis (Yang, 2013). The researcher has gained descriptive statistics by using this software.

4.5 Ethical Consideration

This study makes sure to maintain the confidentiality and privacy of all respondents of this study. The data obtained for this analysis has been stored securely where only the researcher has access to the data.

5. Results and Discussion

5.1 Pilot Survey and Cronbach's Alpha Reliability Test

Cronbach's alpha values are used to evaluate the reliability of the scales used to measure the construct. A pilot study was carried out by the researcher by using 30 respondents from female teachers working in public schools in Rathnapura. The test will be significant when Cronbach's alpha value is more than 0.7 (George & Maller, 2003).

Table 3

Cronbach's Alpha Reliability Test Consistency Level

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$\alpha \geq 0.8$	Good
$\alpha \geq 0.7$	Acceptable
$\alpha \geq 0.6$	Questionable but acceptable
$\alpha \geq 0.5$	Poor
$\alpha < 0.5$	Unacceptable

Source: George and Maller (2003)

Table 4

Cronbach's Alpha Value and Composite Reliability Test Results

Variables	Cronbach's alpha Value	Composite reliability
Attitude (ATT)	0.930	0.942
Perceived Behaviour Control (PBC)	0.925	0.937
Social Norms (SN)	0.904	0.936
Green Purchase Behaviour (GPB)	0.918	0.922

Source: Smart PLS output from analysed data

Based on the information in Table 4, Cronbach's alpha value is greater than 0.7 and also, composite reliability is greater than 0.7. Therefore, it can be used for data collection.

5.2 Response Rate of the Survey

The study was carried out using 150 survey questionnaires to collect data through a field survey. Therefore the researcher was able to collect data from all 150 respondents and the response rate was 100%.

5.3 Analysis of Sampling Profile of the Respondents

This study has used descriptive techniques to evaluate respondent demographic characteristics to identify the overview of the sample consisting of 150 female teachers in Sri Lanka.

5.4 Gender of the Respondents

Table 5

Gender composition of the sample

		Frequency	Percent	Cumulative Percent
Valid	Female	150	100.0	100.0

Source: SPSS output

5.5 Age of the Respondent

Table 6

Age of the respondent

		Frequency	Percent	Valid percent	Cumulative percent
Valid	24-28 years	50	33.3	33.3	33.3
	28-32 years	42	28.0	28.0	61.3
	32-36 years	38	25.3	25.3	86.7
	36-40 years	20	13.3	13.3	100.0
	Total	150	100.0	100.0	

Source: SPSS output

5.6 Monthly Income Level of the Respondent

Table 7*Income level of sample*

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Below 20000	32.0	2.0	2.0	
	20000-30000	65	43.3	43.3	45.3
	30000-40000	71	47.3	47.3	92.7
	Above 40000	11	7.3	7.3	100.0
	Total	150	100.0	100.0	

Source: SPSS output

5.7 Marital Status of Respondents

Table 8*Marital status of respondents*

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Unmarried	81	54.0	54.0	54.0
	Married	69	46.0	46.0	100.0
	Total	150	100.0	100.0	

Source: SPSS Output

5.8 Educational Level of the Respondents

Table 9*Level of education of sample*

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Graduate	33	22.0	22.0	22.0
	Diploma	117	78.0	78.0	100.0
	Total	150	100.0	100.0	

Source: SPSS Output

5.9 Service Experience of the Respondents

Table 10

Service experience of the sample

		Frequency	Percent	Valid percent	Cumulative percent
Valid	0-2 years	69	46.0	46.0	46.0
	3-5 years	70	46.7	46.7	92.7
	6-8 years	11	7.3	7.3	100.0
	Total	150	100.0	100.0	

Source: SPSS Output

5.10 Data Screening and Preparation for PLS-SEM

As developed in the previous section of methodology, data screening was carried out to avoid any possible measurement issues in the preliminary review and analysis of data. It was found when evaluating that one of the environmental awareness dimension indicators had a lower value for the model to be important at p -value. Therefore, when the final model was produced, those indicators were checked out.

Accordingly, when the model was run in Smart PLS, HC1, and HC4 which consist of attitude variables were eliminated from the model due to the lower values of -0.118 and 0.246. Other indicators were found to remain as they generated a higher impact on green purchase behaviour. The overall reliability of the attitude of Cronbach's Alpha value increased from 0.840 to 0.891 and also composite reliability value has increased from 0.888 to 0.921 after the elimination of the variables. It can be shown as follows.

Table 11

Reliability statistics (before screened data)

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.840	0.901	0.888	0.591
GPB	0.895	0.898	0.92	0.657
PBC	0.870	0.875	0.902	0.608
SN	0.888	0.898	0.916	0.646

Source: Smart PLS output

Table 12*Reliability statistics (after screened data)*

Variable	Cronbach's	rho_	Composite	Average Variance Extracted
s	Alpha	A	Reliability	(AVE)
ATT	0.891	0.900	0.921	0.700
GPB	0.895	0.898	0.92	0.657
PBC	0.870	0.875	0.902	0.608
SN	0.888	0.898	0.916	0.646

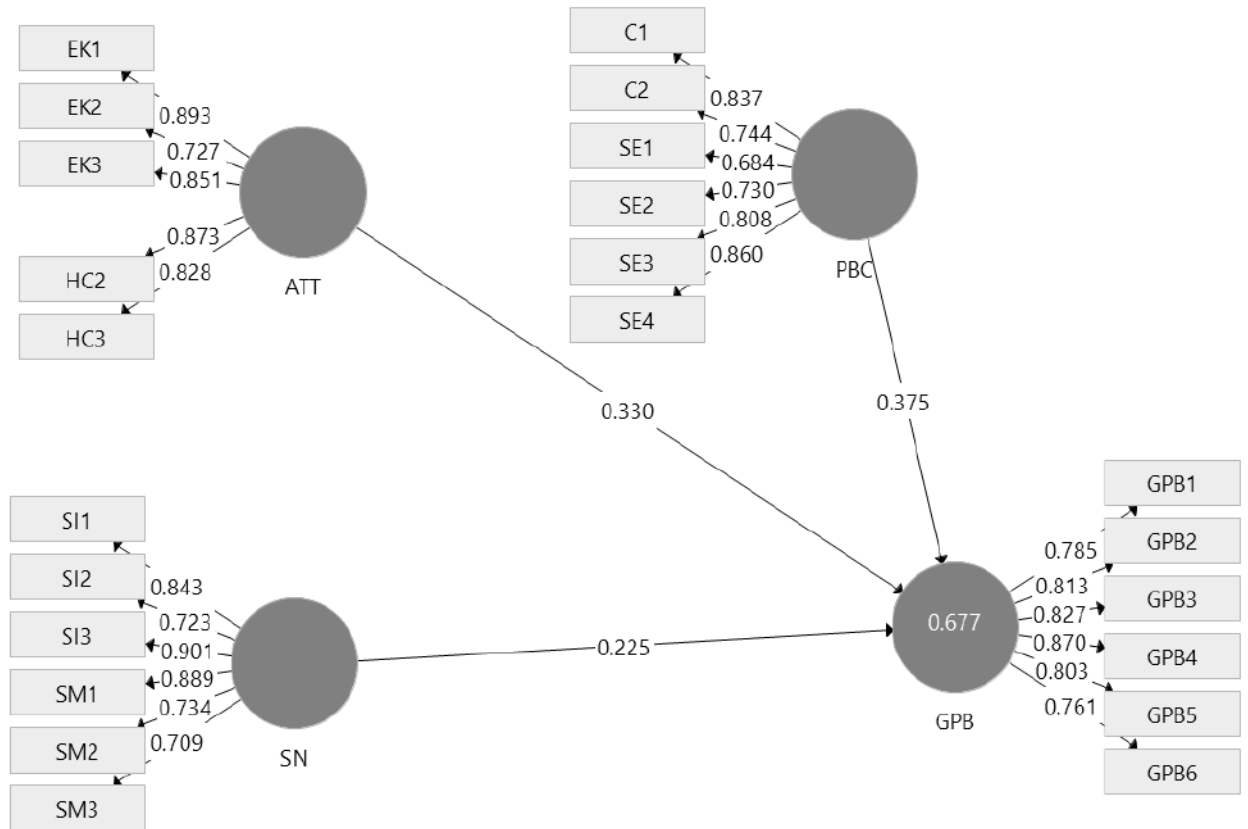
Source: Smart PLS output

5.11 PLS Model Assessment Procedure

The assessment procedure of the Smart PLS model starts with the analysis of validity and reliability between endogenous and exogenous variables, from which the model's relationships can be examined.

5.12 Evaluation of the Measurement Model

The measurement model is evaluated by composite reliability, indicator reliability, convergent validity, and discriminant validity (Hair et al., 2014b). The model illustrates the relationship between the observed data and the latent variable (Figure 3).

Figure 3*SEM PLS path model -1*

Source: Analysis from Smart PLS 3 (Path model)

Above Figure 3 illustrates Partial Least Squares Structural Equation Modeling (PLS-SEM) which is used to evaluate the relationship models with endogenous and exogenous variables (Hassan, 2018).

The measurement model in smart PLS was tested through reliability, convergent validity and discriminant validity (Hassan, 2018). Average Variance Extracted (AVE) was used to assess convergent validity. AVE value has to be 0.50 or higher (Hair et al., 2014b). Moreover, to reach the acceptance level of convergent validity, the outer loadings need to be 0.5 or higher (Hair et al., 2014a). Based on the researcher's analysed data, it indicates a high reliability of measures based on all composite reliability values in between 0.902 to 0.921, Cronbach's Alpha values in between 0.870 To 0.895 and

AVE values consist of 0.608 to 0.700. Therefore, the convergent validity of this research was acceptable.

Table 13

Measurement model evaluation: reliability, discriminant validity, and convergent validity variable/item standardised loading t-statistic, Cronbach's alpha, composite reliability, AVE

Variable \ Item	Standardised Loading	t-Statistic	Cronbach's Alpha	Composite Reliability	AVE
Attitude			0.891	0.921	0.700
HC2	0.873	25.445			
HC3	0.828	15.096			
EK1	0.893	37.527			
EK2	0.727	12.599			
EK3	0.851	20.393			
Social Norms			0.888	0.916	0.646
SI1	0.843	27.690			
SI2	0.723	13.269			
SI3	0.901	49.143			
SM1	0.889	40.423			
SM2	0.734	12.836			
SM3	0.709	13.158			
Perceived Behaviour Control			0.870	0.902	0.608
SE1	0.684	11.746			
SE2	0.730	13.146			
SE3	0.808	18.563			
SE4	0.860	37.894			
C1	0.837	31.030			
C2	0.744	17.551			
Green Purchase Behaviour			0.895	0.920	0.657
GPB1	0.785	22.684			
GPB2	0.813	21.338			
GPB3	0.827	23.868			
GPB4	0.870	36.201			
GPB5	0.803	20.883			
GPB6	0.761	19.154			

Source: PLS Algorithm output from Smart PLS 3.

For discriminant validity, Mackinnon (2008) indicated that AVE's square root must be higher than the constructs' correlations with all other constructs in the structural model to create discriminant validity (Rouf & Akhtaruddin, 2018). To measure discriminant validity the Fornell-Larcker criterion was used. It was created where the Average Variance Extracted (AVE) square root was compared to the correlation of each latent construct.

Table 14

Discriminant validity- Fornell-Larcker criterion

Variables	ATT	GPB	PBC	SN
ATT	<i>0.836</i>			
GPB	0.719	<i>0.811</i>		
PBC	0.583	0.727	<i>0.780</i>	
SN	0.756	0.741	0.710	<i>0.804</i>

Source: Output from Smart PLS 3 (PLS Algorithm)

Note: Values in bold and italic represent Square-root of AVE.

Table 14 has shown the square root of AVE. It seems that AVE is greater than the correlation of latent construct, which shows that discriminant validity has been achieved in the current study.

Discriminant validity was also assessed by the Heterotrait-Monotrait ratio of correlations with values below 0.90 (Hooi & Ibrahim, 2020). According to current study HTMT correlations values are 0.799, 0.811 and 0.810 (Table 15).

Table 15

Discriminant validity test results from HTMT

Variables	ATT	GPB	PBC	SN
ATT				
GPB	0.799			
PBC	0.658	0.811		
SN	0.844	0.826	0.810	

Source: Output from Smart PLS 3 (PLS Algorithm)

The discriminant validity was also checked by cross-loadings (Table 16). Cross loading on the related construct should be higher than all of its loadings on the other constructs (Hair et al., 2014a). In this study loadings on the other constructs were conformed to the above standards. Therefore this research has discriminant validity.

Table 16

Discriminant Validity – Cross Loading

	ATT	GPB	PBC	SN
HC2	0.873	0.657	0.519	0.681
HC3	0.828	0.553	0.432	0.601
EK1	0.893	0.661	0.531	0.684
EK2	0.727	0.520	0.509	0.559
EK3	0.851	0.600	0.448	0.624
GPB1	0.566	0.785	0.631	0.567
GPB2	0.504	0.813	0.651	0.559
GPB3	0.591	0.827	0.564	0.575
GPB4	0.693	0.870	0.606	0.708
GPB5	0.567	0.803	0.540	0.629
GPB6	0.561	0.761	0.546	0.550
C1	0.380	0.535	0.837	0.472
C2	0.504	0.704	0.744	0.566
SE1	0.523	0.510	0.684	0.642
SE2	0.557	0.537	0.730	0.714
SE3	0.346	0.520	0.808	0.440
SE4	0.391	0.532	0.860	0.465
SM1	0.722	0.662	0.578	0.889
SM2	0.503	0.512	0.527	0.734
SM3	0.547	0.523	0.656	0.709
SN1	0.603	0.629	0.574	0.843
SN2	0.528	0.555	0.473	0.723
SN3	0.710	0.668	0.624	0.901

Source: Smart PLS output.

In this study, discriminant validity and convergent validity have been established to show the acceptance of the measurement model. The current study has those discriminant validities and convergent validity. Therefore, the measurement model is accepted in the present study.

5.13 Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) is computed to evaluate the multicollinearity of the items present in current research (Table 17) using Smart PLS software. Generally, the (collinearity statistics) Variance Inflation Factor (VIF) should be less than five (Hair et al., 2014a). The researcher's calculation of VIF statistics for the study is demonstrated in Table 17.

Table17

Variance Inflation Factor (VIF)

	ATT	GPB	PBC	SN
ATT		2.355		
GPB				
PBC		2.037		
SN		3.133		

Source: Smart PLS Output

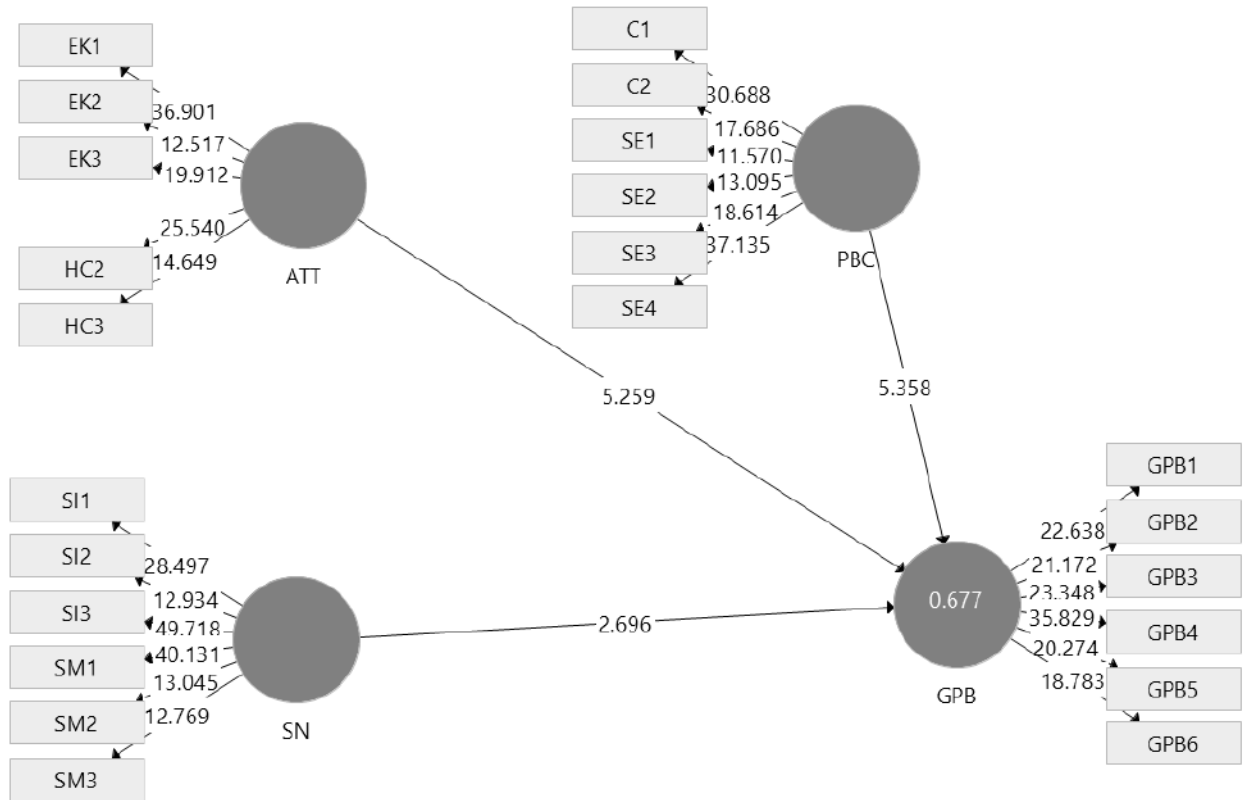
VIF of this data set of this study is between 3.133 -2.037 which is the safe range for multicollinearity while the accepted level is VIF.

5.14 Evaluation of Structural Model

The structural model represents the relationships between the latent variables. The structural model has been assessed through standard beta, *t*-values, the R² value (coefficient of determination) by using the bootstrapping method (5000 resamples) suggested by Hair et al. 2014. Figure 4 shows the bootstrapping model of the current study.

Figure 4

SEM-PLS bootstrapping model



Source: Analysis from Smart PLS 3 (Path model)

5.15 Evaluation of Structured Model and Hypothesis Testing

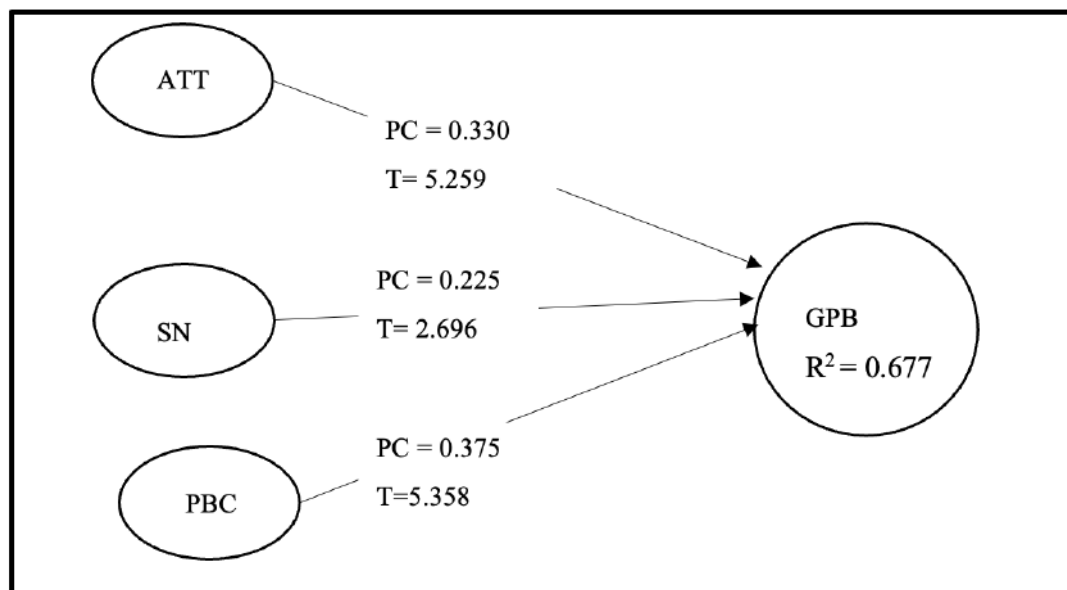
R^2 represents the coefficient of determination and it measures the context of the relevance of the model. Another way to interpret R^2 is that it reflects the percentage of the collective influence of the exogenous variable on the endogenous variable (s) (Hair et al., 2014b). This effect varies from 0 to 1, with 1 reflecting full accuracy of prediction and R^2 , with 0.75, 0.50, 0.25, respectively, describing substantial, moderate, or weak levels of predictive accuracy (Hair et al., 2014b).

Figure 5 illustrate the outcomes of the Partial Least Square bootstrapping procedure in the evaluation of the structural model relationship. Based on the analysis of PLS bootstrapping; the model explains 67.7% of the variance of the behavioural elements

(attitude, subjective norms, and Perceived Behaviour Control) are collectively explained by the Green Purchase Behaviour. Therefore, the relationship of all behavioural elements (attitude, subjective norms, and Perceived Behaviour Control) was statistically significant and denoted a positive impact as same as the predictions.

Figure 5

Structured Equation Model



Note: *PC*= Path Coefficient or Predictive Relevance, *t*= *t*-statistic = Significant at $p < 0.01$, R^2 = Coefficient of Determination, *ATT* = Attitude, *SN* = Social norms, *PBC*= Perceived Behaviour Control and *GPB*= Green Purchase Behaviour.

Figure 5, demonstrates the standardised path coefficients and the *t*-statistic of relationships generate through using PLS bootstrapping with 5000 subsamples to 150 cases.

5.16 Blindfolding and predictive relevance of the model (Q2)

Predictive relevance needs to be evaluated to determine the predictive relevance that predicts data points in reflective measurement models of endogenous constructs and endogenous single-item constructs (Hair et al., 2014b). The general criterion for calculating the predictive relevance of Q2 must be greater than zero in the structural model (Hair et al., 2014b). This indicates the path model predictive relevance for the particular construct is substantial. Poor predictive relevance for endogenous latent

variables represent by zero or less than zero Q2 values (Hair et al., 2014b). The present study has a 0.434 Value (See Appendix B). Therefore it indicates the path model predictive relevance for the particular construct is substantial.

Objective 01: To identify the impact of attitude and green cosmetic purchase behaviour.

Table 18

Path coefficient

	Path Coefficient	<i>t</i> -Statistic	<i>p</i> -Value
ATT -> GPB	0.330	5.259	0.000

Source: Smart PLS output

The results confirmed that attitude has a significantly positive relationship with green purchase behaviour. If the hypothesis is significant, the value of *p* should be less than 0.05 and the value of *t* must be greater than 1.95 (Hair et al., 2014a). Based on this table, the *t*-value is above 1.96 (*t*-value= 5.259) and *p*-value is less than 0.05 (*p*=0.000). According to this table, the path coefficient is 0.330. Therefore there is a positive relationship between attitude and green purchase behaviour of cosmetics products among female teachers in Sri Lanka. Moreover, it seems that attitude has a significant effect in affecting the purchase behaviour of consumers to buy Green cosmetics products under the 95% significant level. Therefore, those with high positive attitudes seemed to have higher purchasing behaviour to buy green cosmetics products (Rachbini, Rachbini (2018), have also mentioned the significant positive impact between these variables. Therefore, the analysis was proved the significant positive impact of attitude on green purchase behaviour. Therefore, H₁ was accepted.

Objective 02: To identify the impact of Subjective norms on green cosmetic purchase behaviour.

Table 19

Impact of subjective norms and green purchase behaviour

	Path Coefficient	<i>t</i> -Statistic	P Value
SN -> GPB	0.225	2.696	0.007

Source: Smart PLS output

The research study has revealed there has a significant positive relationship between Subjective norms on green cosmetic purchase behaviour. Here the value of p is less than 0.05 and the value of t is greater than 1.95. Further, the value of the path coefficient has a positive impact. It means that Hypothesis 2 which predicted the significant impact of subjective norms on green purchase behaviour is positively related and accepted. It means subjective norms are an important factor in influencing consumers' green purchase behaviour. Verma and Chandra, (2017), have also mentioned the significant positive impact of subjective norms on green purchase behaviour. According to extant literature, several studies indicate that subjective norm has a positive significant impact on purchase behaviour (Rachbini, 2018; Taylor et al., 2013; Verma & Chandra, 2017). Therefore, the analysis has proved that there is a significant positive impact of subjective norms on green purchase behaviour. This study also confirms the theory of Ajzen (1991) by elaborating that there is a significant positive impact on subjective norms and purchase behaviour. Therefore, H_2 was accepted.

Objective 03: To identify the impact of Perceived Behaviour Control on green cosmetic purchase behaviour.

Table 20

Impact of perceived behaviour control and green purchase behaviour

	Path Coefficient	t -Statistic	p -Value
PBC -> GPB	0.375	5.358	0.000

Source: Smart PLS output

The study elaborates that there is a significant positive impact of Perceived Behaviour Control on the green purchase behaviour of cosmetics products among female teachers in Sri Lanka. Based on these statistics, this hypothesis is highly significant at the p -value of 0.000 (< 0.05) and it's positively correlated. Therefore it has a significant positive impact on Perceived Behaviour Control on green cosmetic purchase behaviour. It means Perceived Behaviour Control is an important factor in influencing consumers' green purchase behaviour. Previous studies also indicated that Perceived Behavioural Control has a significant impact on purchase behaviour (Boban, 2012; Ha & Swinder,

2012; Kozar et al., 2013). Therefore, the analysis has proved the significant positive impact of Perceived Behaviour Control on green purchase behaviour.

5.17 Status of Hypotheses

Table 21

Status of hypotheses

Hypothesis	<i>p</i> -Value	Status
H ₁ : There is a significant positive impact of attitude on Green cosmetic Purchase Behaviour among female teachers in Sri Lanka.	0.000	Accepted
H ₂ : There is a significant positive impact of Subjective norms on green cosmetic purchase behaviour among female teachers in Sri Lanka.	0.007	Accepted
H ₃ : There is a significant positive impact of Perceived Behaviour control on green cosmetic purchase behaviour among female teachers in Sri Lanka.	0.000	Accepted

6. Conclusion and Implications

This study investigates the “factors affecting on green purchase behaviour of cosmetics products”. Here the researcher has used the theory of Planned Behaviour based on three independent variables (attitude, subjective norms, and perceived behaviour control) and one dependent variable (Green purchase behaviour). The objectives were to identify the impact of attitude, subjective norms and purchase behaviour control on green cosmetics purchase behaviour among female teachers. To gathered data to evaluate those objectives, 150 female school teachers were selected using convenience and purposive sampling methods and gathered data was analysed by using smart PLS software to validate the objectives of the research.

Based on the findings of this study, attitude, subjective norms, and Perceived Behavioural Control were identified as significant positive predictors of purchasing green cosmetics products. It is identified that when behavioural elements (attitude, subjective norms, and Perceived Behavioural Control) of the green purchase behaviour is increased, consumer's tendency to engage in the purchase of green cosmetics will also increase. This study provides several knowledge implications as it will contribute to the green product behaviour of consumers. Furthermore, marketers and respective parties such as the government and policymakers can gain an understanding to develop new policies relating to green cosmetics products. In addition, academics who are keen to learn about the factors affecting the purchasing behaviour of green cosmetics products can obtain information on this aspect. Further, this research has provided marketers with insights into factors affecting the green buying behaviour of cosmetics products among public schools for female teachers.

Those findings could be used by cosmetics companies in order to realise the positive effect on green cosmetics purchase behaviour. Marketers can imply to consciously promote safe and sustainable lifestyles for customers by presenting more information on the awareness of green cosmetics products, the method of processing, the source of ingredients, and the positive and negative effects of different natural ingredients. This will continue to create positive effects on green cosmetics products. As well as the need to raise consumer awareness by labelling eco-friendly products with green certification and environmental statements that could positively affect them to green cosmetic products. To create awareness among consumers by labelling the eco-friendly products with green certification and environmental claims that may positively influence those regarding green cosmetics products. Meanwhile, the government is the largest purchaser of goods and services in any country. It is best that government buying strategies concentrate on environmentally compatible products to enable more customers, both directly and indirectly, to use green cosmetics products.

The present research has a range of limitations that provide opportunities for future research. As per this research, all respondents were female teachers. Therefore, it is important for researchers to be able to concentrate on tests in other categories and different age groups, using both men and women. Moreover, the aim of this study was

generally to analyse the affecting factors purchasing green cosmetic products. Consequently, future researchers can contribute to variations in customer perception of green products.

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**Management,
Organisation
Studies and
Interdisciplinary
Research**

**AWARENESS OF ONLINE LEARNING OF POSTGRADUATES
DURING COVID 19: WITH SPECIAL REFERENCE TO
SABARAGAMUWA UNIVERSITY OF SRI LANKA**

Sellahewa, W. N.

Uva Wellassa University, Sri Lanka
researchassistwms@gmail.com

Samarasinghe, T. D.

Sabaragamuwa University, Sri Lanka

Samarasinghe, N. K.

Cardiff Metropolitan University, United Kingdom

Abstract

E-learning is one of the fastest growing fields in the world, and people are widely accepting it. The term ‘awareness’ in this study indicates the preferred mode of study, method, and issues faced by postgraduates during online learning. Although educational institutes were quickly adopting online learning platforms, there was no concern for students’ preferences and awareness of online learning. According to the preliminary study, this is due to some inefficiencies in online learning. Hence, the objectives of this study are to identify the preferred mode of learning (online or offline) for effective learning and to identify the causes for their preference and to investigate the issues facing by postgraduates during online learning. This study is most relevant for academics as it facilitates them in understanding the postgraduates’ opinions towards online learning in this pandemic situation. Recommended strategies will also be vital for academics to make the online sessions more effective and interactive. The primary data was gathered, disseminating a structured questionnaire that consisted of both open-ended and close-ended questions. Around 175 questionnaires were sent to the postgraduates following various causes in Sabaragamuwa University of Sri Lanka (SUSL) with the help of email and social media platforms and gathered 125 responses that can be used for this study. Convenience sampling technique was used to select the sample and gathered data were analysed qualitatively. The results of the data analysis indicated that more than 65% of the students were happy with online education during

the lockdown, while 17.3% of them preferred offline learning. Most of the students (70%) preferred to use Zoom for their online education due to the user-friendliness. But 30% of the respondents demanded MS Teams because of the ease of access to the recorded sessions and learning materials. The issues during the online learning were internet connectivity issues (56%) and lack of concentration (34%) compared to the physical mode. Based on these facts, this study recommends developing any virtual reality applications to conduct practical sessions. Also, universities can conduct online training programmes about online education tools. Furthermore, the government should consider providing internet connection free of charge to the students, and also internet providers should also analyse the coverage issues in rural areas. Furthermore, researchers can survey students' perceptions and expectations about online learning in the future.

Keywords. Awareness, Covid 19, Online learning, Online learning platforms

1. Introduction

Education can be regarded as an extremely important component of the lives of every human being. Education has been drastically changed today compared to the old days because of advancements in teaching techniques. There is a huge demand for online learning in this context, and it has been spread widely in the education sector. With the assistance of the advancement of technology, online learning is a part of many institutions' course offerings around the world (Inciso, 2021). Moreover, the world was rapidly changing in numerous ways in the face of the Covid 19 pandemic. Large numbers of sectors collapsed, and world economies began to erode. As a result, millions of students in many schools, educational institutions, and universities worldwide are educated online were out of the classroom (World Economic Forum, 2020). Information and Communication Technology (ICT) is the powerhouse of the world and has spread its reach around the globe, with the Covid 19 pandemic being the monopolistic solution for many sectors despite the Covid 19 pandemic (Adedoyin & Soykan, 2020).

In the face of this COVID 19 pandemic, although the changes have become unpredictable, the world is forwarding adapting to the present situations. Many sectors

in Sri Lanka have turned to the internet as their primary means of providing services. The education sector has also suffered a lot in the face of the pandemic. From a young age, we have been accustomed to learning the alphabet, traditionally in the classroom. But when lectures have shifted from physical to online, the exemplar transference has initiated advantages and disadvantages in students' academic life (Haththotuwa & Rupasinghe, 2021). There are various modes of methods helpful for e-learning. Moodle, Zoom, Google Classroom, Udemy, Coursera, YouTube are few examples. Among these available methods, some are widely used for academic purposes. This study has been devised to investigate the preferred method of online learning and reasons with reference to the postgraduates who are currently studying at Sabaragamuwa University of Sri Lanka (Sriyalatha & Kumarasinghe, 2021).

This study has been conducted based on the sample collected from Sabaragamuwa University of Sri Lanka (SUSL). Sabaragamuwa University of Sri Lanka (SUSL) was established in 1991 as the 12th National University of the country as a contemporary liaison to the Minipura tradition, with the noble intention of widening the third eye of many children in our country. The Sabaragamuwa University of Sri Lanka nurtures eight faculties: Graduate Studies, Agriculture, Applied Science, Geology, Management Studies, Medicine, Sociology, and Languages and Technology. Also, all the degree programmes offered in SUSL are designed in line with the vision and mission of the university. Learning and assessment methods are designed from time to time based on student feedback, industry observations, and peer reviews. SUSL programmes follow a combination of direct delivery and student-centred teaching and learning methods that adequately support information and communication technology.

This study is most relevant for the academics, as it facilitates them in understanding the postgraduates' opinions towards online learning in this pandemic situation and identify their issues related to e-learning. Recommended strategies will also be vital for academics to make the online sessions more effective and interactive (Makamure & Tsakeni, 2020). The main objective of this study is to identify the preferred online mode of learning for effective learning and to identify the causes for their preference especially in this pandemic period. As the secondary objective, this study will investigate the issues which are facing by postgraduates during e-learning, and as the

third sub-objective, the recommendations will be provided for the identified issues (Howshigan & Nadesan, 2021).

1.1 Research Problem

An E-learning platform is a new experience for many Sri Lankans. This research has been conducted to address the research gap identified through the literature survey. Although several countries around the world, such as Bangladesh, United Kingdom, have tested the awareness of online learning of postgraduates during various pandemic situations, the same kind of study has still not been conducted in Sri Lanka. Specially, a pandemic like Covid 19 is also a novel experience for Sri Lanka. Although educational institutes were quickly adopting the online learning platform, no one cares about the students' preference and awareness of online learning. Therefore, this study was conducted to identify the preferred mode of learning (online or offline) for effective learning and to identify the causes for their preference (Adedoyin & Soykan, 2020). Moreover, this study is most relevant for the academics as it facilitates them in understanding the postgraduates' opinions towards online learning in this pandemic situation. Recommended strategies will also be vital for academics to make the online sessions more effective and interactive.

2. Literature Review

2.1 Online Learning

Online learning is something beyond the physical setting. It can be explained as education that takes place through the internet. Online learning is often referred to as 'e-learning'. It is the process of learning without physically attending the classroom. Nowadays, e-learning or online learning has become one of the easiest and most convenient ways of delivering lessons rather than preparing for physical teaching and learning (Makamure & Tsakeni, 2020).

2.2 Online Learning Platforms

Online learning platforms vary from Learning Destination Sites, Traditional Commercial Learning Management Systems, Open Source Learning Management Systems, Modern Learning Management Solutions, Learning Management Ecosystems, and Custom Built Platforms. Moodle, Zoom, Google Classroom, Udemy,

Coursera, YouTube are few examples. Among these available methods, some are widely used for academic purposes (Mnguni & Mokiwa, 2020).

2.3 Awareness Of Online Learning

A study conducted by Nganpomchal and Adams (2016), related to the acceptance of e-learning with the help of senior students, revealed that the awareness of e-learning is higher among senior students than the first-year students in universities. A study was conducted based on the Ghanaian students living in China revealed that online learning is a good initiative to continue academic activities during pandemic situations (Dong, 2020). Another study examined the online learning experience using 96 undergraduates regarding the online education approach. It was found that the online education approach changes based on the factors such as self-learning skills, online communication, and attitude, etc. The result of that study showed that the students' online education awareness is gradually improving (Zhu et al.,2020).

2.4 Preference on Online Learning

Mahajan and Kalpana (2018) have conducted a study based on medical students and found that medical students believe that their academic careers will improve through online education. Another study conducted by Traditional Chinese Medicine (TCM) identifies that majority of the students prefer online learning when there is a special need to suspend all face-to-face learning environments. According to the study conducted by Selvaras (2020), students prefer blended learning consisting of both online learning and traditional classroom learning. The normal belief of the postgraduate students in Sri Lanka would be that students can interact with instructors, get more information, and clarify the subject matters by participating in face-to-face classes. Further, they are more flexible in finding online courses worldwide when they are familiar with the technology (Nafrees et al., 2020).

2.5 Positive and Negative Aspects of Online Learning

According to the study related to medical students conducted by Inciso (2021), it was found that there are both positive and negative aspects of online learning. They have identified the availability of technology, convenience of distance learning, and the effectiveness and convenience of the online assessment methods as positive aspects of

online learning. Their study proved that lack of technical Support, less feedback from instructors, poor online platforms and lack of training as the negative side of online learning. The study conducted related to the Ghanaian students living in China related to online learning revealed that they have to spend a huge amount of money to get internet access for online learning.

3. Methodology

Primary data was gathered by distributing a structured questionnaire which consists of both open-ended and closed-ended questions, and 12 interviews were also conducted to gather data. Around 175 questionnaires were sent to the postgraduates who were following various courses in SUSL with the help of email and social media platforms and gathered 125 responses that can be used for this study. Convenience random sampling technique has been used to select the sample. The researchers have connections with the postgraduates of SUSL, and accordingly, the information was easy to access. Gathered data have been analysed qualitatively, followed by thematic analysis.

3.1 Validity and Reliability

Validity and reliability of the findings of data of this study ensured as the findings are compatible with Creswell's evaluative criteria.

4. Results/Analysis and Discussion

The important demographic data extracted from the study are as follows. One hundred twenty-five questionnaires and the twelve interviews were the sources of data used for this study. Accordingly, 137 respondents were contributed to this study. Among them, 88 respondents were female, and 49 respondents were male. 92% of postgraduates were married, and 97% of them were occupied. As per the analysed data majority of the respondents fell into the age category of 30 – 45 years.

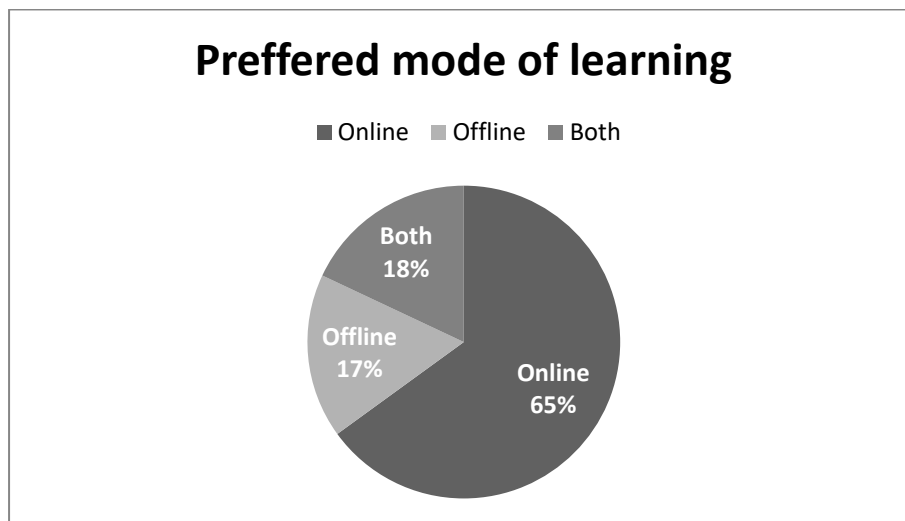
4.1 Preference of the Mode of Learning

The primary objective of the current study is to examine the preferred mode of learning for postgraduates studying at Sabaragamuwa University of Sri Lanka. The results of the

data analysis indicated that more than 65% of the students were happy with online education during the lockdown, while 17.3% of them preferred offline learning.

Figure 01

Preferred mode of e-Learning



One of the significant reasons for motivation towards online learning for the majority of the respondents was the calm and organised manner of an online learning atmosphere. They have expressed that they feel comfortable with the systematic flow of lectures in an online context, since it assists them to keep focus well. Furthermore, few other reasons such as flexibility in lecture time and capability of recording for later studies have been identified as reasons that attract students to e-learning.

The majority of the students (70%) preferred to use Zoom for their online education due to the user-friendliness. However, 30% of the respondents were demanding MS Teams because of the ease of access to the recorded sessions and learning materials. However, the respondents were unaware of the operation of other modes and mentioned that they could easily handle Zoom and MS teams. Their minds were not ready for any challenging online experiences beyond the well-known modes like Zoom.

4.2 Problems Faced by Postgraduates

Based on the responses received for the questionnaire, the main problems which are being faced by postgraduates were connectivity issues, technical failures, and being novel to online learning.

4.2.1 Connectivity Issues

As most postgraduate students are employed with a manageable income, every student enrolled has a smart device that can be connected to the internet somehow via Wi-Fi or mobile data. The vital resource which is lacking has good internet coverage, which is an essential factor for distance learning. Although they are interested in learning, they are frustrated by the lack of internet access. The speed of the internet connection and the quality of the network play an important role in how quickly a student can get to class and not miss any live sessions.

4.2.2 Technical Failures

Although a strong internet connection is essential for online learning, many students are not well equipped. They face technical problems because they do not have much understanding of technology and computer applications. Most postgraduate students are not from the age of smartphones and tablets, so their knowledge of operations will be less than undergraduates who tend to be younger. Technical problems hinder online learning among students online learning. When there is a disruption to the online session, the majority are incapable of returning to the session. Hence, it is likely that technical problems can adversely impact their learning activities

4.2.3 Novelty of Online Learning

Today, technological advancement results in more meaningful and higher-quality instruction, delivery, and better learning skills. There are various tools available to optimise this objective. Virtual classrooms can be considered the most popular tool. However, online education is still new for postgraduate students. Therefore, it will take more time to adapt to the system and get the most out of it.

5. Conclusion

Although several countries have tested the awareness of online learning of postgraduates in their respective countries during various pandemic situations, the same kind of study has still not been conducted in Sri Lanka. A pandemic like Covid 19 is also a novel experience to Sri Lanka, and most educational institutes quickly adopted

online learning platforms regardless of the students' preferences and their awareness of online learning. Therefore, this study was conducted to identify the preferred mode of learning (online or offline) for effective learning during this pandemic situation and to identify the causes for their preferences.

The investigators have gained many insights into e-learning. In this study, various data collected from Sabaragamuwa University of Sri Lanka postgraduate students have been analysed and interpreted. The results of the data analysis indicated that more than 65% of the students were happy with online education. Most of the students (70%) preferred to use Zoom for their online education due to its user-friendliness. But 30% of the respondents were demanding MS Teams because of the ease of access to the recorded sessions and learning materials. The issues during the online learning were mainly the internet connectivity issues (56%) and lack of concentration (34%) compared to the physical mode.

With the increasing complexity of modern times, education faces ever-changing new demands; accordingly, postgraduate students too have to bear the brunt of these changes. Hence, the students need to be sensitive to the existing changes and be ready for future changes. They have to possess awareness, knowledge, and skills concerning e-learning and other emerging concepts.

5.1 Implications and Contribution

Respondents believe that the following recommendations will help reduce the problems regarding online learning and the following suggestions will cause to improve their interest in e-learning. This study is relevant for academics as it facilitates them in understanding the postgraduates' opinions towards online learning during this pandemic situation. This study highly recommends developing any virtual reality application systems for conducting practical sessions based on the facts. Universities can also conduct online training programmes for both lecturers and postgraduate students to improve awareness of e-learning. Moreover, the government should consider providing students a convenient internet connection, and internet providers should address coverage issues in rural areas. Further, this study will fill the existing

research gap of conducting fewer studies on online learning regarding postgraduates in Sri Lanka.

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OPTIMISATION OF VEHICLE ROUTING FOR WASTE COLLECTION AND TRANSPORTATION IN RATMALANA AREA IN SRI LANKA

Joseph, R.

University of Vocational Technology, Ratmalana, Sri Lanka

Gunaratne, M. D. N.

Agriculture Sector Modernisation Project, State Ministry of Development of Minor Crops Plantation
including Sugarcane, Maize, Cashew, Pepper, Cinnamon, Cloves, Betel Related Industries, and
Export Promotion, Sri Lanka
mdng2012@gmail.com

Abstract

Solid waste management has become a national concern where all the local governments, provincial governments, and central governments seek sustainable solutions. Much of the Municipal Solid Waste (MSW) management cost in Sri Lanka is allocated for waste collection and transportation rather than for waste disposal and treatment. The objective of this study is to minimise the total distance of transporting waste and the total cost. This enables a direct reduction in the labour cost, fuel cost, emission due to transportation, which results in a significant reduction in the total cost of MSW management. The garbage collection process was studied in the Ratmalana area, where many households and industries are located, and the factories discharge untreated raw waste into open drains leading to natural waterways or low-lying lands. The current waste collection and transportation practice refers to collecting all the waste from households and transporting waste to the disposal station using four tractors along the settled routes. The study mainly relies on secondary data in relation to collected and transported quantities of waste by date by four tractors in the month of September 2020. Linear programming techniques were applied to route optimisation to reduce the total distance and logistics costs, fossil fuel consumption, and emissions production by optimising waste collection and transportation operation. This proposed method has reduced the total traveling distance when compared with the existing method. The solution of the linear programming model reduces the distance by 31.23 km per day to

the existing practice, which makes an impact on the cost of waste management and the reduced emission, and the need for labor.

Keywords. Garbage collection and transportation, Linear programming, MSW management, Sri Lanka

1. Introduction

Solid waste disposal has been a priority environmental issue in Sri Lanka with the development of all the sectors and urbanisation. It has become a national concern where all the local governments, provincial governments, and the central government seek sustainable solutions for waste management. Although haphazard solid waste disposal has been identified to be one of the major causes for environmental degradation in The National Action Plan of Sri Lanka (2019-2023) the most common method of Municipal Solid Waste (MSW) disposal remains to be open dumping (Mannapperuma, 2018), which causes social and environmental issues. The issue of MSW is most acute in the Colombo Municipal area and in the suburbs of Colombo (Bandara, 2011). Except for the municipality of Colombo, MSW disposal in Sri Lanka is primarily a function of the public sector, and in most of the urbanised municipalities, MSW management is one of the sectors with a large number of employees. The majority of the MSW management cost in Sri Lanka is allocated for waste collection and transportation rather than waste disposal and treatment (Bandara, 2011).

As per the Municipal Council Ordinance (1947), Urban Council Ordinance (1939), and Pradeshiya Sabha act-1987, waste collection, and disposal responsibilities are vested with the local government authorities of the particular Divisional Secretariat, either a municipal council urban council or a local council (The Environmental Foundation Limited (EFL). However, disposal of solid waste is a priority environmental issue in Sri Lanka, and at present, it has become a national concern (Karunarathna, n.d.).

Ratmalana is a suburb in Colombo District in the Western Province of Sri Lanka which is inside the administration boundary of Dehiwala-Mount Lavinia Municipal Council (Dehiwala Mount Lavinia Municipal Council, 2016). The land area of Ratmalana east and west is 144.7 hectares in extent, and as per the census in 2011, its population is

95,506 (Department of Census and Statistics Sri Lanka, 2015). Ratmalana West is expected to have over 200 persons per hectare per the census in 2011, which shows one of the highest population densities in Colombo suburbs. In addition, Ratmalana is an area where many industries are located, and the factories discharge untreated raw waste into open drains leading to natural waterways or low-lying lands, which can cause numerous health risks for human life and the environment. A proper process of waste management system reduces the impact on health and environmental issues, and transportation of waste more efficiently and effectively plays the main role in such a dynamic waste management system.

Sri Lanka generates 7,000 MT of solid waste per day, with the Western Province accounting for nearly 60% of waste generation. Each person generates on average 0.1kg-0.4kg of waste per day (Dawoodbhoy, 2019). According to the Waste Management Authority and the Central Environmental Authority of Sri Lanka, only half of the waste generated is collected. The majority of the MSW management cost is allocated for waste collection and transportation rather than for waste disposal and treatment. The currently practicing waste collection and transportation method refers to taking all the waste from households and industries and transporting waste to the disposal station by tractors/ carriers along the settled routes. This process involves labor costs, fuel costs, vehicle maintenance costs, etc., with extremely high cost, accounting for most of the SWM spending. In addition, since the collection of garbage takes a longer time, it further increases the cost of management. Therefore, the problem involves obtaining the optimal paths of each vehicle with the objective of minimising the total distance, total comprehensive costs, including vehicle costs and labour cost, and emissions costs.

This study minimises the total distance of garbage carriers/ tractors traveling per day to collect solid waste in the Ratmalana area. This enables a direct reduction in the labour cost, fuel cost, vehicle maintenance cost, emission due to transportation which results in significant reductions in the total cost of management of garbage. This study discusses applying linear programming techniques to optimise resource utilisation and draw the maximum output, subject to the given constraints. Currently, 4tractors/ carriers are being deployed in the solid waste collection process in this area under the

study, and 12 employees are engaged in this process. The expected output of this study is to suggest a methodology to mitigate the daily running distance of solid waste collecting carriers while ensuring the efficiency of solid waste collection process on the daily available solid waste gathered by institutes, industries, and households which, on average amounts to 9,912 kg of solid waste with a daily average running distance 86.29km by four carriers.

2. Literature Review

Efficient route planning has become one of the important study areas in Sri Lanka because governments also have identified that building new roads is not the only solution for the traffic congestion problem of the county. In a study by, Silva and Bandara (2012), suggest a Global Information System (GIS) based model which is called Integrated Highway Management Systems (IHMS) that has been developed by customising the ArcGIS software using Visual Basic (VB 6) to handle national road network in Sri Lanka. This model is capable of estimating the emission level on road links and the travel time. In addition to that, Padmani and Ra (2017) argue that identifying an optimum route alignment in landslide areas is essential in planning roads. To identify the optimum route alignment for Beragala-Koslanda landslide area in Sri Lanka, they suggest the application of geo-informatics approach considering engineering factors using the basic input data, where seven layers (Landslide hazard zone, Land use and management, Slope, Drainage density, Populated area, Sensitivity area and Lithology) were extracted, and further they were weighted and ranked using Spatial Multi Criteria Analysis (SMCA) according to the values given by experts in the field of geology and highway engineering. But the application of GIS is not popular in government institutions due to technical know-how and high initial capital and maintenance cost.

On the other hand, the road network in Colombo city lacks structural coherence, which causes inefficiency and capacity problems (Jayasinghe et al., 2016). Therefore, more effort has to be made in planning transport and logistic problems. In developing countries, the application of operational research studies is being made in the area of transportation. However, the studies have not always addressed the specific problem environment of the developing countries with respect to distribution and technology

(Datta, 2000). Datta (2000) suggests that studies are required for delineating the role of transportation and logistics in rural development. Detailed techno-economic feasibility studies are needed to consider different factors contributing to the social cost-benefit analysis.

In Sri Lanka, based on a case study of a famous beer company that is the market leader for beer in Sri Lanka, researchers, Ganepola et al. (2018) identifies that currently, company outbound logistics consists of a decentralised distribution and a redistribution process for bottles and cans in Colombo area, and an extra cost on transportation is being spent for that unnecessarily. The gravity model was applied to find a centralised warehouse that can easily be connected with each sub-cluster using MS excel solver. Then they could use it to determine an optimum path through the Hamiltonian cycle, and the proposed model saves the monthly cost of bottles distribution by 17.2% and the monthly cost of cans distribution by 11.6%.

Solid waste management has become a very important exercise in Sri Lanka. Per capita daily generation of solid waste per person per day in Colombo municipal area and other municipal areas is around 0.8 kg/ day and 0.75 kg/ day, respectively (Central Environmental Authority, 2008). Around 59% of the total waste in Sri Lanka is collected from the western province (Central Environmental Authority, 2008) and the Dehiwala Mount Lavinia area is a more critical area in collecting municipal waste management. Therefore the importance of the efficient collection of municipal waste in that area is more widely identified while optimum utilisation of resources.

As per Sulemana et al. (2018), optimal routing for solid waste collection and transport is very important if sustainability in cost reduction and environmental conservation is a priority in solid waste management. To improve the efficiency of the vehicle routing systems in solid waste collection, studies should focus on improving the efficiency of the vehicle routing systems through modification of companies' delivery schedules; optimising the fleet of trucks' routes, and incorporating information related to traffic conditions into the models in order to avoid generating traffic congestions. Further, concern about environmental pollution is an important consideration, particularly in

urban areas where the rate of waste generation is increasing rapidly with high population growth and the development of industries.

3. Methodology

3.1 Data and Data Collection

In this study, mainly secondary data was used on collected and transported quantities of waste by date, by four tractors in September 2020, and their capacities were obtained from Daily waste collection reports of Dehiwala – Mount Lavinia Municipal Council in 2020. Further, distances between the depot and the households in the Ratmalana area were calculated in kilometers using the vehicle route maps of the Dehiwala -Mount Lavinia Municipal Council.

3.2 Data Analysis

The linear programming techniques based on the simplex method with the solver in MS Excel was applied to minimise the total daily distance transported by four tractors/ carriers in connection with solid waste collection in Ratmalana area which leads to decrease in logistics costs, consumption of fossil fuel, and production of emissions by optimising the operation of waste collection and transportation under the given constraints of maximum of 12 labourers (including drivers), 4 carriers/tractors with the maximum capacity of 3,000 kg each. Further, the daily average volume of solid waste to be collected is 9,912 kg, and the average daily transporting total distance of four carriers is 86.26 km)along the existing six (6) routes in the Ratmalana area as follows.

Route 1 (total distance: 11.9 km)

MOH (Medical Officer of Health Office- Dehiwala), Ratmalana Public Market, The School for Visually Impaired Children, Ideal Motors, Civil Aviation Centre, Little Lion Swiss Roll, Kothalawala Defence University, Pakwell Lanka, Hindu Collage, Karadiyana waste unloading centre- MOH

Route 2 (total distance: 15.44 km)

MOH, Cargill's Food City, Stain Studio, Kevil ton, Pal Packing (Pvt) Ltd Univotec, Institute Of Textile

State Pharmaculars, National Vocational Training Institute, Jumping Beans Café, Mas Holdings

Plenty Foods, Karadiyana waster unloading centre- MOH

Route 3 (total distance: 14.18 km)

MOH, Airport Canteen, Convenience Foods, Dynamic Technol Ogies (Pvt) Ltd, Sunil Traders

Ovinmee Foods, Lal Stores Karadiyana waster unloading centre -MOH

Route 4 (total distance: 13.98 km)

MOH, Market, The School for Visually Impaired Children, Ideal Motors, Civil Aviation Centre, Little Lion Swiss Roll, Karadiyana waster unloading centre-MOH

Route 5 (total distance: 13.92 km)

Kothalawala Defence University, Pakwell Lanka, Hindu Collage, Cargill's Food City, Stain Studio, Kevil ton, Pal Packing (Pvt) Ltd, Univotec, Karadiyana waster unloading centre-MOH

Route 6 (total distance: 16.80 km)

Institute Of Textile, State Pharmaculars, National Vocational Training Institute, Jumping Beans Café, Mas Holdings, Plenty Foods, Airport Canteen, Convenience Foods, Dynamic Technol Ogies (Pvt) Ltd, Sunil Traders, Ovinmee Foods, Lal Stores, Karadiyana waster unloading centre-MOH

Distances from MOH to 25 number of main wastes collecting centres (Locations) are given in Table 1, and the proposed routes and the route diagram are depicted in table 6 and Figure 6, respectively.

3.3 Formulation of the Mathematical Models

Integer Programming Formulation

In this study, vehicle routing problem was formulated as an Integer Programming (IP) model with integer variables associated with each arc between locations (Households and the depot). The terminologies used in the model are as follows.

1. Parameters

N : Households and Institutions

V : Vehicles

d_i : Demand of household i

T_v : Capacity of vehicle v

c_{ij} : Distance between node i and node j

2. Decision Variables

$$x_{ijv} = \begin{cases} 1, & \text{vehicle } v \text{ travels on arc } (i,j) \\ 0, & \text{otherwise} \end{cases}$$

$$y_{ij} = \begin{cases} 1, & \text{a vehicle travels on arc } (i,j) \\ 0, & \text{otherwise} \end{cases}$$

u_i : An intermediate variable, non-negative and real

The mathematical model can be expressed as follows.

The objective function: minimise the total travelling distance of the vehicles.

$$z = \sum_{v=1}^V \sum_{i=0}^N \sum_{j=0}^N c_{ij} x_{ij}^v$$

Constraints are:

1. The loading capacity of each vehicle cannot be exceeded, and this is ensured by constraints:

$$\sum_{i=1}^N \sum_{j=0}^N d_i x_{ijv} \leq T_v \quad (v = 1, 2, \dots, V)$$

2. Each arc (i, j) can be traveled by at most one vehicle and this is ensured by constraints:

$$\sum_{v=1}^V x_{ijv} = y_{ij} \quad (i \neq j, \quad i, j = 0, 1, \dots, N)$$

3. Following two constraints ensure that each household must be visited exactly once:

$$\sum_{\substack{j=0 \\ j \neq i}}^N y_{ij} = 1 \quad (i = 1, 2, \dots, N)$$

$$\sum_{\substack{i=0 \\ i \neq j}}^N y_{ij} = 1 \quad (j = 1, 2, \dots, N)$$

4. Following ensure that a vehicle must start from and end at the depot if it is in use, and at most V vehicles will be used:

$$\sum_{j=1}^N y_{0j} \leq V$$

$$\sum_{i=1}^N y_{i0} \leq V$$

5. A vehicle that reaches a household must leave the same household:

$$\sum_{\substack{j=0 \\ j \neq i}}^N x_{ijv} = \sum_{\substack{j=0 \\ j \neq i}}^N x_{jiv} \quad (i = 1, 2, \dots, N; v = 1, 2, \dots, V)$$

6. Condition to prevent the formulation of sub tours:

$$u_i - u_j + (N + 1)y_{ij} \leq N \quad (1 \leq i \neq j \leq N)$$

4. Results and Discussion

Table 1 shows the distance from source to collecting centre

Table 1

Distance from source (Industrial and institutes only) to collecting centre

no	Location	Distance from the depot(km)	No	Location	Distance from the depot(km)
1	Market	2.52	14	Institute Of Textile	4.28
2	The School for Visually Impaired Children	2.81	15	State Pharmaculars	4.19
3	Ideal Motors	2.81	16	National Vocational Training Institute	4.35
4	Civil Aviation Centre	3.06	17	Jumping Beans Café	4.4
5	Little Lion Swiss Roll	3.35	18	Mas Holdings	4.43
6	Kothalawala Defence University	3.54	19	Plenty Foods	4.3
7	Pakwell Lanka	4.02	20	Airport Canteen	3.66

8	Hindu Collage	3.72	21	Convenience Foods	4.5
9	Cargill's Food City	3.47	22	Dynamic Technol Ogies (Pvt) Ltd	4.83
10	Stain Studio	3.55	23	Sunil Traders	4.17
11	Kevil ton	3.74	24	Ovinmee Foods	4
12	Pal Packing (Pvt) Ltd	4.03	25	Lal Stores	4.4
13	Univotec	4.71			

4.1 Solution of LP Model

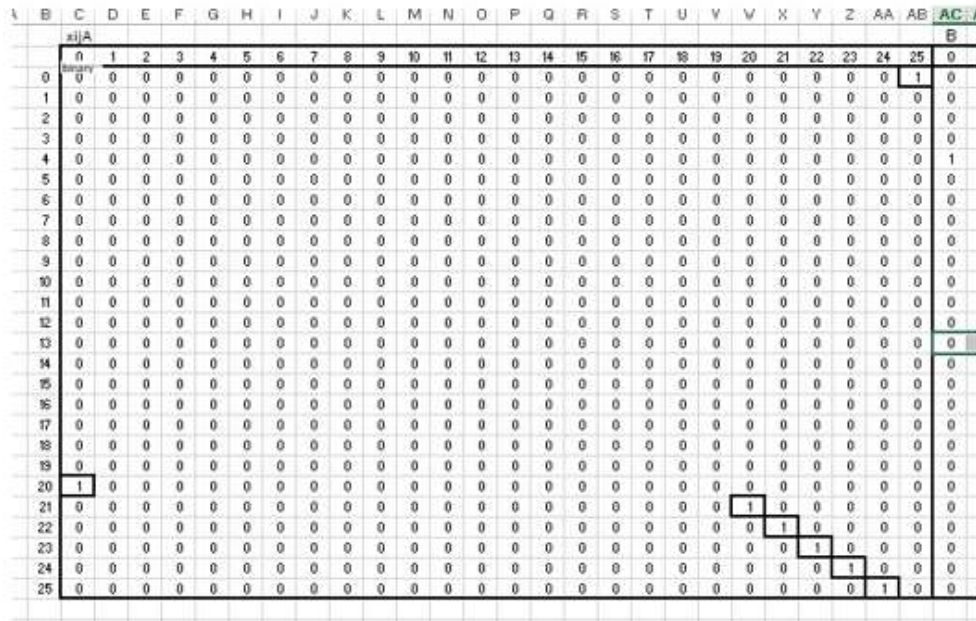
Linear Programming (LP) model is solved by using computer software called Open Solver in MS Excel. By the software, supply nodes 25, 24, 23, 22, 21, and 20 are sequentially serviced by one tractor. It has a total distance of 15.5 km and containing 1748 kg weight of garbage out of 3000 kg.

Table 2

Route for vehicle A

Route	Distance (km)
Depot-25	4.4
25-24	0.43
24-23	0.19
23-22	1.51
22-21	0.32
21-20	0.95
20-yard	2.3
yard-Depot	5.4
Total Distance (km)	15.5

Figure 1
Route (Vehicle A) Obtained from LP Model



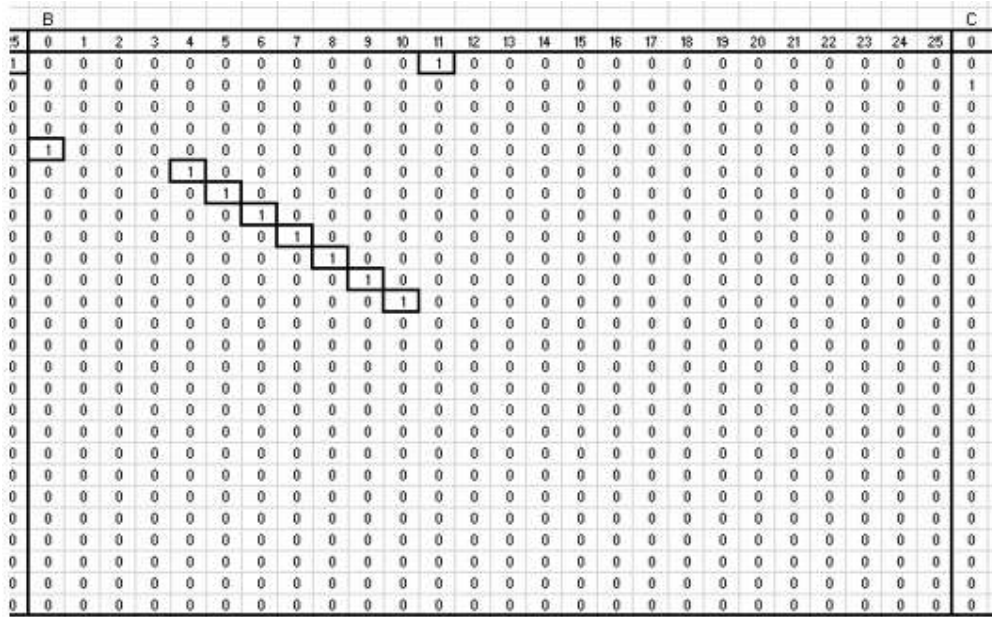
Supply nodes 11, 10, 9, 8, 7, 6, 5 and 4 are serviced by another tractor sequentially. It has a total distance of 5.4 km and containing 2994 kg weight of garbage out of 3000 kg.

Table 3
Route for vehicle B

B	
Route	Distance (km)
Depot -11	3.74
11-10	0.32
10-9	0.19
9-8	0.27
8-7	0.48
7-6	0.17
6-5	0.16
5-4	0.35
4-yard	2.4
yard-Depot	5.4
Total Distance (km)	13.48

Figure 2

Route (Vehicle B) Obtained from LP Model



Supply nodes 3, 2, and 1 are serviced by next tractor sequentially. It has a total distance of 12.25 km and containing 2411 kg weight of garbage out of 3000 kg.

Table 4

Route for vehicle C

C	
Route	Distance (km)
Depot-3	2.81
3-2	0.64
2-1	0.3
1-yard	3.1
yard-Depot	5.4
Total Distance (km)	12.25

Figure 4
Route (Vehicle D) Obtained from LP Model

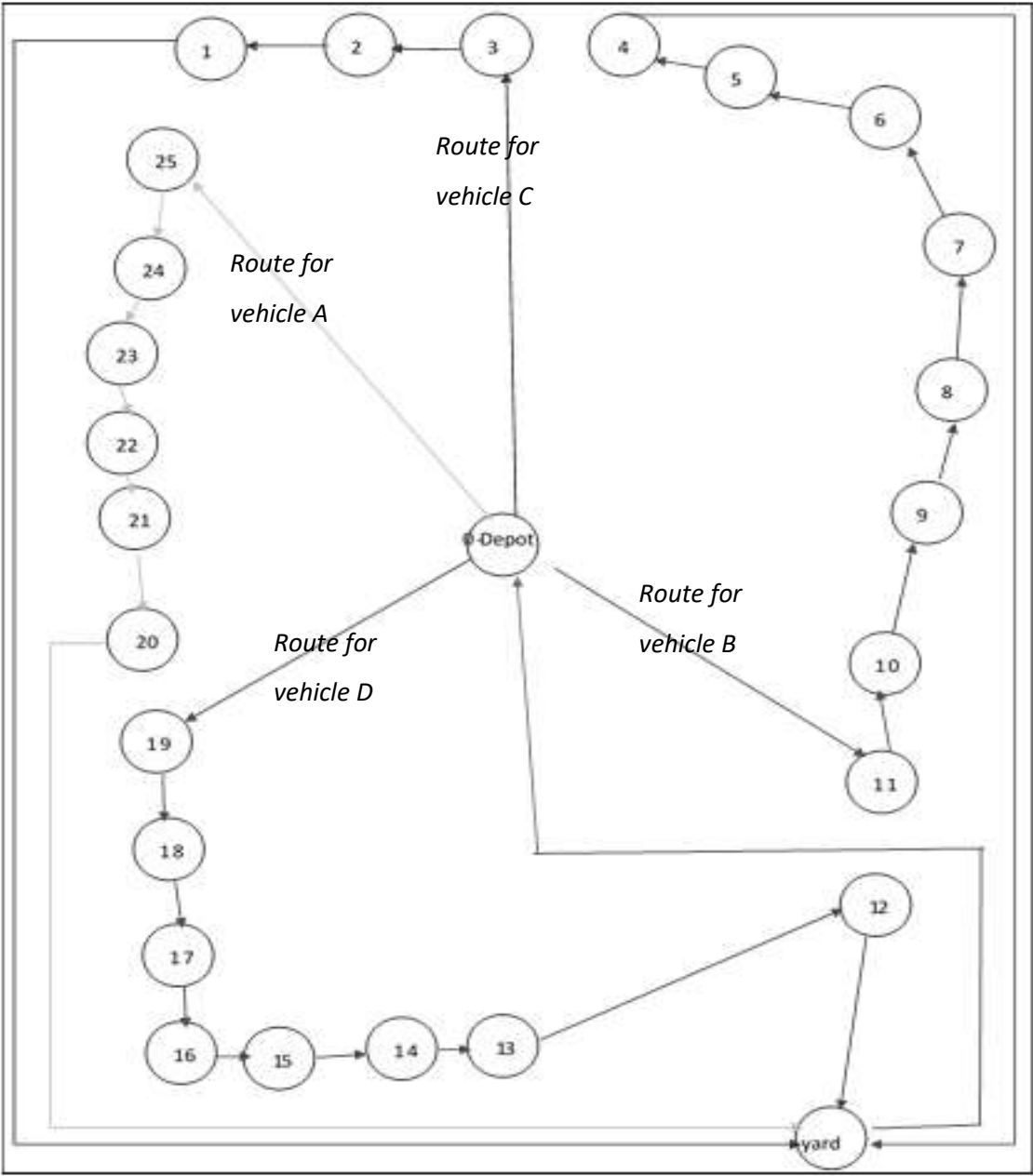
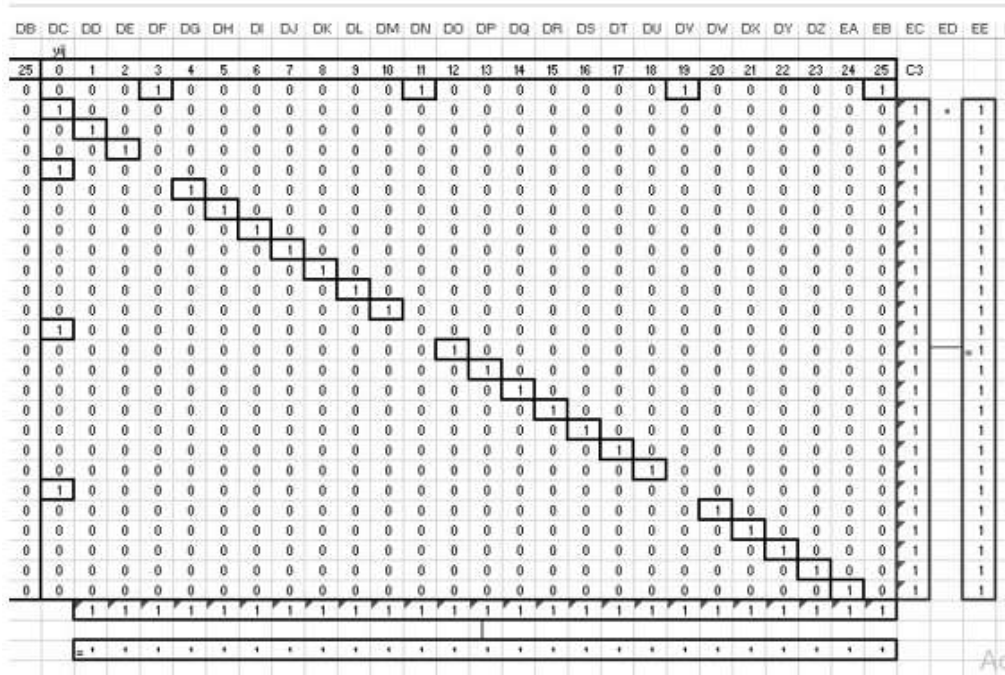


Figure 6

Route for all vehicles Obtained from LP Model



Currently all four tractors are used to collect garbage along the six routes and the total distance covered by four vehicles is 86.26km. Table 6 displays the existing routes and the total distance travelled by the four vehicles:

Table 6

Existing Routes and Distance Covered by Each Route

Parth	Quantity(kg)	Distance(km)
MOH,1,2,3,4,5,6,7,8, KARADIYANA	1729	11.97
MOH, 9 TO 19, KARADIYANA	1620	15.44
MOH, 20 TO 25, KARADIYANA	825	14.18
MOH, 1 TO 5, KARADIYANA	1916	13.98
MOH, 6 TO 13, KARADIYANA	1810	13.92
MOH,14 TO 25, KARADIYANA	2012	16.80
Total	9912	86.29

This proposed method has reduced the total travelling distance when compared with the existing method. The solution of the linear programming model reduces distance by 31.23 km.

Compared to the existing solid waste collection and transportation process from sources along 6 routes in Ratmalana area to the collection centre at Karadiyana, managed by the Dehiwela Mount-Lavinia Municipal Council, the proposed heuristic solution for solid waste collection and transportation problem in this area has significantly reduced the daily average transporting distance from 86.29 (km) to 55.06 (km) with a reduction of 31.23km (decrease in total distance is 36.2%). As a result, it is required only 3 tractors/ carriers (with 3,000 kg capacity) instead of 4 carriers deployed currently and the labour requirement has been reduced from 12 labourers to 9 labourers. In addition to those advantages of the proposed LP model, when compared to the existing procedure, the number of vehicles is reduced from 4 to 3 on a daily basis which will make a significant reduction in emission and vehicle maintenance cost too.

Table 7

Comparison of resource utilisation and running distance of the existing system vs Proposed system

	Existing waste- collection system	Proposed waste- collection system	Difference
Daily average. total distance	86.29 km	55.06 km	31.23 km (36.2%)
Required no of carriers (with 3000kg capacity)	4	3	1
Required no, of labours	12	9	3

5. Conclusions and Implications

The objective of the project was to find a feasible solution to the vehicle routing problem, so as to minimise both, the number of vehicles used and the total travel distance. The objective was successfully achieved. But it can be concluded that Linear Programming techniques are very complicated to be used in large vehicle routing problems. Also a few number of computer software are available to solve such large scale problems. Thus, for large scale problems, to obtain an optimal solution,

techniques like Heuristics or Meta Heuristics as mentioned in literature review could be applied.

The proposed model will provide many advantages to the Dehiwela Mount Lavinia Municipal Council in terms of minimising number of vehicles deployed, fuel cost, vehicle maintenance cost and labour cost with the optimisation of the resource utilisation.

Although our objective is reducing the distance and to reduce the total number of vehicles, here we have only reduced the distance travelled by four carriers/ tractors. It can be considered to deploy compactors that have the capacity of 5,000kg to reduce the number of vehicles and labour if road accessibility exists.

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BARRIERS TO STRATEGIC PLAN IMPLEMENTATION: AN EXPLORATIVE STUDY OF MANUFACTURING SECTOR ORGANISATIONS IN SRI LANKA

Kariyapperuma, S.

Department of Business Administration, Faculty of Management Studies and Commerce, University of
Sri Jayewardenepura, Sri Lanka.

seshika@sjp.ac.lk

Abstract

The main concern for every strategic level manager is to enable the best performance through effective planning and successful implementation of strategies to gain competitive advantages over their competitors. However, formulating new strategies as well as executing those strategies throughout the organisation are challenging tasks. Without effective implementation, no organisational strategy can succeed. Thus, this research aimed to explore the barriers to implementing strategies at manufacturing sector organisations in Sri Lanka. A qualitative research method was used to collect data from 18 managers of six manufacturing sector organisations utilising the purposeful sampling technique. The semi-structured interview method was used, and the collected data were analysed using Thematic Analysis Technique. It was found that barriers to the effective implementation of a strategy exist both inside and outside the selected organisations. Five distinct barriers were identified: poor strategy formulation, inadequate resources for implementation, managerial issues, organisational cultural barriers, and external environmental barriers. This study contributes to an explanation of why so many strategy implementation efforts fail. It is one of the very few papers addressing the strategic issues of Sri Lankan manufacturing sector organisations. Finally, recommendations to eliminate the identified barriers were provided to managers of the selected organisations.

Keywords. Barriers for plan implementation, Effective strategy implementation, Strategic management, Strategic planning, Manufacturing sector organisations.

1. Introduction

In a complex, highly connected, and dynamic environment, strategic implementation has fundamental importance for an organisation to gain a competitive advantage over others and be its industry leader (Nuruzzaman, 2015). Currently, in times of international competition, the critical success factors for manufacturing sector organisations are challenged continually and on a daily basis, which implies a constant need for change in the strategies. Thus, organisations should have the ability to craft new strategies which are vital to their growth and survival. However, strategies will not benefit organisations unless implemented successfully (Johnson et al., 2016). Froster and Browne (1996) mentioned that “without successful implementation, a strategy has no concrete existence but is merely an abstraction”. Based on the findings of Candido and Santos (2019), failure in the implementation stage is the main problem for most strategic management processes. They reported that the fail percentage range from as low as 7% to as high as 90%, with an average of about 50%. They concluded that every second strategy fails to be executed properly.

In 2012, Kotter proved that 70% of major change strategies fail since the organisations do not take the holistic approach required to implement the strategies successfully. Moreover, Nazemi et al. (2015) found that more than 70% of change-oriented strategies have been unsuccessful. These are warning statistics and stress the need for more attention on the implementation stage of the strategic management process. Discussion on the obstacles and challenges of strategy implementation in recent years has been highly fascinated by the strategic management discourse due to the implementation of strategic plans has not been as successful as their designers expected. The research in the area of strategic implementation often lacks an explanation of how and why strategic implementation fails in organisations. Specifically, in the context of Sri Lankan manufacturing sector organisations, there is a huge lacuna in related research. The literature available is not sufficient to understand the reasons for strategic implementation failures in manufacturing sector organisations in Sri Lanka (Edirisinghe, 2008; Wijesinghe et al., 2012; Wijethunga & Pushpakumari, 2014). Thus, the objectives of this study were to

- a) Explore the barriers to a successful implementation of strategic plans at manufacturing sector organisations in Sri Lanka

- b) Suggest solutions based on the findings of the study in dealing with identified barriers.

2. Literature Review

According to Johnson et al. (2016), strategy is the long-term direction of an organisation. Porter (1996, p. 64) focuses on deliberate choices, difference, and competition by defining the strategy as “deliberately choosing a different set of activities to deliver a unique mix of values.” The strategic-management process consists of three main stages: strategy formulation, implementation, and evaluation (Johnson et al., 2016). Strategy formulation reflects the process of selecting the most appropriate course of action to realise organisational objectives and thereby achieve the organisational mission. Strategy implementation is the process of executing strategies. It is the path that an organisation takes to reach where it sees itself in the future. It is the process by which objectives, strategies, and policies are executed through the development of programmes, budgets, and procedures (Johnson et al., 2016). Li et al. (2008) have considered three different perspectives in defining strategic implementation. The first approach emphasises the process perspective and considers strategy implementation as a sequence of carefully planned steps. The second approach views strategy implementation as a series of concerted actions and examines these actions from a behavioural perspective. The third approach concentrates on a hybrid perspective that combines the process perspective and the behavioural perspective. Finally, he defined strategic implementation as a “dynamic, iterative and complex process, which is comprised of a series of decisions and activities by managers and employees – affected by several interrelated internal and external factors – to turn strategic plans into reality to achieve strategic objectives” (Li et al., 2008, p. 5).

The purpose of strategic implementation is to achieve long-term goals of the organisation. It is one of the most important and rigorous parts of the strategic management process and the process that will demand the most input of the resources of the organisation. However, if done correctly, it will ensure the accomplishment of objectives and the long-term success of the organisation (Candido & Santos, 2019).

Barriers are the factors that prevent, obstruct, or hinder the process of strategy implementation. These factors are impediments that make it hard for the organisation to realise its goals. The barriers or obstacles to strategy implementation can either be by external or internal sources of the organisation (Janaki et al.,2015). Based on the literature review, a number of barriers to strategy implementation were identified.

According to Froster and Browne (1996) and Janaki et al. (2015), the implementation is the realisation process of the new strategy which had been developed in the formulation stage of the strategic management process. Thus, if the strategy is well formulated, it will have a direct positive impact on the strategy implementation process, and if not, it will become a barrier for implementation. Hrebiniak (2005, 2008) described a poor or vague strategy as an obstacle for stagey implementation. As mentioned by Grundy (2012) lower-level managers and middle-level managers often have problems associated with a lack of clarity, and sometimes the entire strategic management process is unclear to them. Further, there is a possibility that lower-level managers and the employees are completely unaware of the information that went to the strategy formulation since the formulation and the implementation to be done by two separate groups of people (Heracleous,2000). In 2011, Canada and Rese found out that lack of consensus, understanding, and transparency regarding the meanings of organisation's vision, mission, and goals, lack of relation between the content of the strategy and the strategic process, and lack of coherence between strategic planning and resource allocation act as barriers for strategy implementation.

Organisational structure is widely accepted as an important variable that influences successful strategy implementation (Heracleous,2000; Janaki et al., 2015). Canhada and Rese (2011) agreed with Heracleous by introducing a relatively inflexible formal structure barrier to strategy implementation. Similarly, Tan (2004) suggests that implementing a new strategy within an organisation could mean huge or minor changes to the existing organisational structure for success. Koseoglu et al. (2009) introduced a lack of effective coordination across departments and other internal and external parties as the main barrier for successful strategy implementation.

Koseoglu et al. (2009) noted that “incompatible organisational culture” is one of the most commonly experienced problems during the strategy implementation process. Lihalo (2013) agreed with Koseoglu (2009), by identifying organisational culture as one of the main barriers to successful strategy implementation. Ahmadi et al. (2012) mentioned that an organisation’s culture and strategy should be well-balanced and coherent. Organisation theory generally considers that culture and strategy should be strongly connected, as culture can influence strategy (Warrick, 2017). The specific characteristics of an organisation’s culture should align with its strategy, and that any changes in either of these two must facilitate the other in order to ensure successful strategy implementation (Dobni & Luffman, 2003).

The engagement and active participation of top managers in the implementation process are vital elements contributing to the success of the strategy (Brenes & Molina, 2008; Mubarak & Yusoff, 2019; Donate & Pablo, 2015). Further, lack of knowledge and skills to implement the strategy and lack of management commitment have been identified as main barriers for strategy implementation. Radamoskaa (2014,p.264) noted that “the inefficiency of the implementation actions resulting from the fact that managers do not have special skills such as cognitive skills, emotional resilience or personal drive which seems to be essential for the successful strategy implementation.” Beer and Eisentant (2000) identified obstacles on strategy implementation as “six silent killers of a strategy” and introduced them as follows: unclear strategic intentions and conflicting priorities of managers, top-down laissez-faire management style, an ineffective senior management team, weak coordination across all internal and external parties, poor vertical communication and inadequate down-the-line leadership skill development.

In addition to the above mentioned barriers, Alashloo et al. (2005) categorised the barriers to strategy implementation as planning outcomes and organisational, managerial, and individual issues. ‘Competing activities among people’ and ‘lack of adequate information systems’ were also identified as barriers for stagey implementation (Koseoglu et al., 2009). Canheda and Rese (2011) introduce ‘lack of strategic feedback’ as one of the issues that employees and managers experience during the implementation process. Lack of conscious participation and engagement of employees in the implementation process is another element that hinders the successful

strategy implementation (Radomska, 2012). Also, Lihalo (2013) points out that ‘unexpected problems arising at the time of strategy implementation,’ ‘when strategy implementation goes beyond the planned time,’ ‘rigid and bureaucratic organisational structure’ and ‘insufficient financial resources to execute the strategy’ creates issues for effective strategy implementation. Further, he mentions that ‘cost of training the staff’, ‘lack of qualified people to train’ and ‘limitation in time’ may also act as barriers. Lihalo (2013) quotes Lynch (2000), who indicated that “resistance to change normally leads to delays, additional costs and destabilises organisation change process and it makes strategy difficult to implement”.

3. Research Methodology

A qualitative and interpretive approach was applied with the aim of having an in-depth understanding of the barriers to strategy implementation. Semi-structured interviews were conducted via the Zoom platform to obtain the perspectives of participants on the implementation of strategies. The interviews were conducted via the Zoom platform due to the Corvid-19 safety guidelines imposed by the selected organisations. The main advantage of the semi-structured interview method is that there is an organised, systematic approach. At the same time, it is informal and comfortable for the participants to express their perceptions and ideas freely (Saunders & Townsend, 2016).

The interviews took place from March 2021 to May 2021. Six manufacturing sector organisations were selected from six different industries, and three managers representing top, middle and lower level management from each organisation were chosen for the interviews. The selected organisations are situated in the Western province, Sri Lanka. All the organisations have a workforce exceeding 350 employees. Their industries span polymer, food, apparel, printing, activated carbon and glass. These organisations were selected considering the availability of strategic plans as well as the nature and number of strategies that they have implemented within the last five years. All the organisations have implemented major corporate level and business level strategies during the last five years, and some of these strategies were successful, and some of them have failed. Even though all the organisations have formal strategic formulation processes, the way they formulate those strategies differ from each other to a certain extent. However, if the problems which occur in other stages of the strategic

management process have influenced the success of the implementation, those factors were also considered under this study. The name of the organisations and the name and positions of the participants are not disclosed due to confidentiality and anonymity.

The consent of the managers was taken to record the discussion, and all the participants agreed to allow recording of the whole interview. In addition to individual interviews, a focus group discussion was held with six members of the sample representing the three management levels. Each interview lasted for approximately thirty (30) minutes, and the focus group interview lasted for one hour and ten minutes. After conducting 18 interviews, based on the purposeful sampling technique, data repetition was observed. The transcripts of the interviews were sent to the participants for review to reduce the interpretation errors.

All transcripts were read several times to reach familiarity with the content of the transcript before performing data analysis, and the Thematic analysis method (Braun & Clarke, 2006, 2019) was used to analyse the data. While performing thematic analysis, literature review served as a loosely guiding support to identify codes and themes (Erikson & Kovalainen, 2015). Further attention was given to the purpose of the research and specific research objectives. The details of the participants are shown in Table 1.

Table 1

Details of the Participants

Assigned Number	Name of the Organisation	Industry	Participants	Interview Duration
1.	ABC Tire Manufactures	Polymer	T1	27:15
			M1	35:12
			L1	40:05
2.	XYZ Food Industries Pvt. Ltd	Food	T2	32:35
			M2	25:05
			L2	36:52
3.	Eagle Pvt. Ltd	Apparel	T3	40:23
			M3	35:43
			L3	28:16

4.	Chandana Book Printers Pvt. Ltd	Printing	T4	28:45
			M4	31:03
			L4	42:33
5.	Carbons Pvt. Ltd	Activated Carbon	T5	39:07
			M5	27:00
			L5	33.08
6.	Sarasi & Co Ltd.	Glass	T6	45:15
			M6	36:22
			L6	30.18
7.	Focus Group Interview	One member from each organisation	M1	1:10:18
			T2	
			T3	
			M4	
			L5	
			L6	

Source: Author compiled

4. Analysis and Discussion

The main purpose of the study was to explore the barriers to implement strategies at manufacturing sector organisations in Sri Lanka. A thematic map (Figure 1), as well as a table (Table 2), were developed based on the data gathered from the participants. The findings of this study represent a thematically – organised synthesis of the perceptions of 18 participants on strategy implementation. The barriers to strategy implementation were categorised into five main groups, as shown in Table 2.

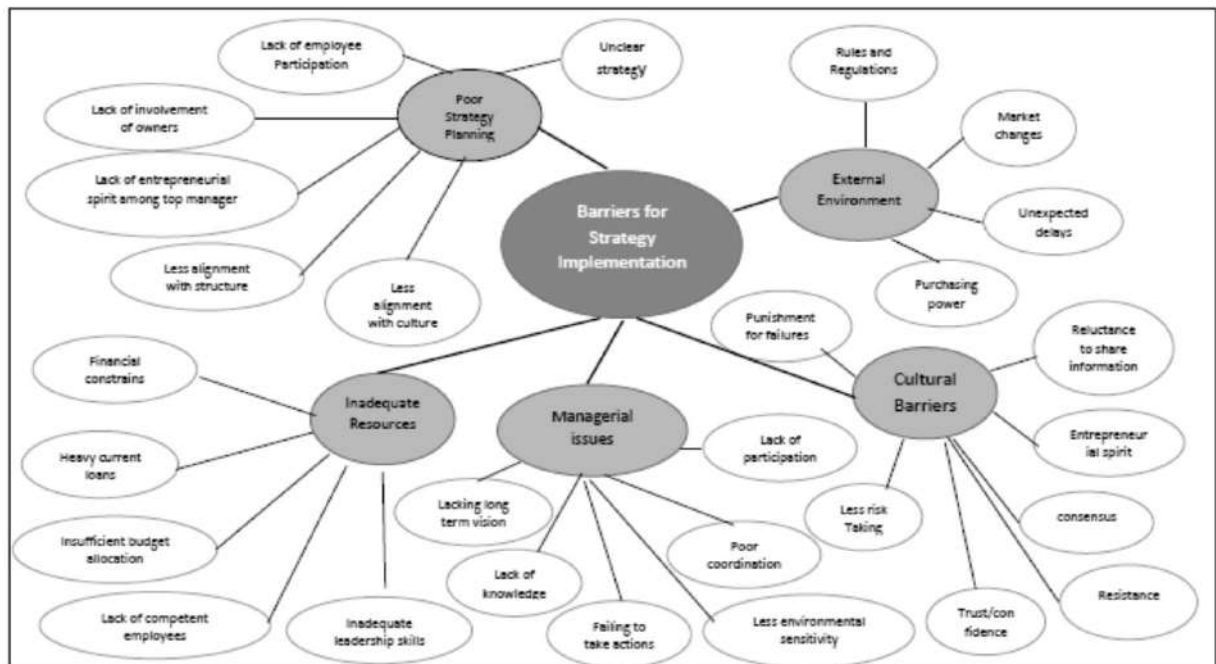
Table 2

Barriers to Implement Strategic Plans

Themes(main barriers)	Codes (elements of Barriers)
1. Poor strategic Planning	Unclear strategy
	Lack of employee participation in strategic planning
	Lack of involvement of owners and top managers in strategic planning
	Lack of entrepreneurial spirit among top managers

	Less alignment with structure
	Less alignment with culture
2. Lack of Resources	Financial constraints imposed by owners
	Heavy Current loans/Inability to get new loans
	Insufficient budget allocations
	Lack of competent employees
	Inadequate leadership skills
3. Managerial Issues	Myopic/lacking long term vision
	Lack of knowledge of strategic planning
	Senior managers failing to take actions
	Less sensitivity to the environment
	High involvement with day today activities
	Less engagement and active participation of top managers in the implementation process
	Poor coordination across departments and external parties
	Lack of training and Development
4. Cultural Barriers	Lack of entrepreneurial spirit among managers and employees
	Reluctance to exchange of information
	Poor sense of consensus/ inability to reach consensus
	Reluctant to adopt new strategies/resistance
	Lack of trust and confidence
	Less risk taking
	Punishment for failures
	Doubt on usefulness of proper strategic planning
External Environment	Changes in rules and regulations/ govt. Restrictions
	Unexpected changes in the market situations
	Unexpected delays due to external problems
	Reduction of purchasing power of people (income, savings)

Source: Author compiled.

Figure 1*Thematic Map- Barriers to Strategy Implementation**Source:* Compiled by the Author

This study revealed five groups of barriers, including poor strategic planning, lack of resources, managerial problems, cultural barriers, and external environmental factors, which have prevented these organisations to implement their strategic plans successfully.

4.1 Poor Strategic Planning

Strategic planning in the manufacturing sector organisations in Sri Lanka seems to be carried out mostly by top management and the middle-level management, without extensive involvement of lower-level managers or employees. The lack of involvement of the employees and lower-level management in the strategy formulation stage creates problems regarding communication and execution, and ultimately getting the support for strategies was found during the interviews. In fact, more than 80% of respondents mentioned unclear strategy, lack of understanding of vision, mission, or goals, less involvement of the owners in the strategy formulation stage, lack of entrepreneurial spirit among top managers and owners, and less alignment of the strategy with the existing organisational elements such as culture and strategy as barriers that have a

large to very large effect on successful strategy implementation. With a sound, clear strategy, proper communication, and participation, lower-level managers and employees can better understand the company's strategic purpose (vision, mission and goals) and, therefore, be more willing to support the strategy, which ultimately leads to more effective implementation of strategies.

The previous literature also supports these findings. As mentioned in the literature review, Brenes and Molina (2008), Nutt (2007), Grundy (2012), and Northouse (2018), for examples remarked that one of the most effective aids to implementation is to involve people early on in the strategy formulation stage and get their consent for the new strategy. It may not be possible to obtain consent from all parties with new strategies, but shared inputs improve the quality of the strategy, identify vital implementation issues, and make the employees and lower-level managers more receptive to the selected strategy. Johnson et al. (2016) mentioned that all stakeholders have to be identified and involved in the first stage of the strategic management process.

4.2 Lack of Resources

The participants of this study consistently agreed that strategic implementation fails in their organisations due to inadequate resources. They informed that sometimes financial restrictions imposed by owners hinder spending on new strategies. Further, they mentioned that since their organisations are already burdened with heavy loans, it is difficult to obtain new loans from financial institutions. Some of the manufacturing sector organisations have traditional budgeting systems, and finance departments do not fully support action plans due to poor communication with relevant departments. Moreover, for any strategy to be fully implemented, it requires well-trained and competent manpower. As indicated by the majority of the participants, human resource talents and abilities are not aligned with the strategy implementation practices of their organisations.

Kaplan and Norton (2008) mentioned that the lack of clear communication between the finance department and other departments who implement the strategies is one of the four main barriers leading to strategic implementation failure. David (2011) noted that a sound strategy is likely to fail if the important role of employees is not properly taken

into account. The successful implementation of a strategy requires continuous support from a disciplined, empowered and motivated workforce and managers (Hunger & Whelan, 2007).

4.3 Managerial Issues

Another main barrier that was identified as having a huge impact on strategy implementation relates to managerial issues. More than 50% of managers accepted that they do not engage in strategic planning properly. Middle-level and lower-level managers criticised their top management for being “strategically myopic’ and “lacking the long term Vision.’ They believe that

since they do not develop sound strategies, the strategies fail in the implementation stage. Based on the findings of this study, the main reason for poor strategy is lack of knowledge, experience and skills in strategic planning and the presence of those who do not understand strategic management. Furthermore, since their organisations are always firefighting to solve internal day-to-day issues, the managers do not have the energy or time to properly engage in the strategic management process. Lower-level managers responsible for driving strategy implementation are also faced with daily operational challenges in making sure customers and employees are satisfied.

Lack of coordination and poor communication across internal departments and external business units were also identified as managerial issues which hinder effective strategy implementation. Johnson et al., (2016) noted the importance of the active participation of the managers in ensuring strategy implementation. Platts and Tan (2004) mentioned that as the complexity of the business environment increases, good communication and shared understanding among managers are vital. Managers need to share an increasing amount of information, and across departments clearly and effectively.

4.4 Cultural Barriers

Lack of entrepreneurial spirit among managers and employees, reluctance to exchange information freely, inability to reach consensus, lack of trust and confidence, punishment for failures, and less risk-taking were realised as cultural barriers to strategy implementation at manufacturing sector organisations in Sri Lanka. I noted that the

participants doubted the usefulness of systematic and proper strategic planning. Furthermore, the participants mentioned that resistance to strategic changes is common behaviour in their organisations.

Mark Field, president of the Ford Motor Company in 2006, mentioned that “culture eats strategy for breakfast’ by which he meant to emphasise the influence of the organisational culture on the strategy (Johnson et al.,2016). Quinn (1988) specifically mentioned that the different views held by owners, top management, and the planners versus those of the executors of the strategic plan and poor sense of consensus act as the main barrier for strategy implementation.

Without effective communication and sharing of information, other activities such as interpretation, adoption, and actual commitment also fail (Leislle, 2008). Platts and Tan (2004) indicated that as the complexity of the business environment increases, clear communication and shared understanding among managers and workers are vital. If resistance to strategic change is common in an organisation, it normally leads to delays, additional costs, and destabilises the strategy implementation process (Waweru, 2011).

4.5 External Environment

Finally, the study revealed several external sources, such as sudden changes in rules and regulations imposed by the government and other countries, unexpected changes in the market, and unexpected delays due to external issues such as Covid 19 pandemic as barriers for successful strategy implementation. More than 80% of the participants discussed the impact of Covid 19 pandemic on their strategic plans. They mentioned that they had to change their strategies several times during the last one and half years. They have focused on short-term goals and strategies due to the high uncertainty of the business environment. For more than 50% of organisations, now it is a struggle for survival. The reduction of the purchasing power of people has a direct negative impact on the demand for their products. Lihalo (2013) indicated that changes in the economic environment such as inflation and credit availability influence effective strategy implementation. Pearce and Robinson (2003) found that unanticipated changes in government policies such as taxation, legislation, and incentives hinder strategic implementation. In general, organisations are affected by economic, political, legal,

socio-cultural, and technological variables. Although these variables are taken into account at the strategy formulation stage, continuous changes sometimes create threats for effective strategy implementation (Johnson et al., 2016; Nazemi et al., 2015).

5. Conclusion and Recommendations

The study sought to explore the barriers to strategy implementation at manufacturing sector organisations in Sri Lanka. The barriers were found to be from the external and internal environment to organisations. The study revealed four major barriers from the internal environment, and they were poor strategic planning, inadequate resources, managerial issues, and cultural barriers. Organisations should be mindful not to take these barriers for granted because they can bring significant negative consequences for organisations.

Having sound and clear strategies and leadership qualities was vital to seeing strategy through to implementation. Along with the leadership skills such as being visionary, resilient, and environmentally sensitive, factors such as communication and coordination skills also contribute considerably to effective strategy implementation. The study indicated that one of the hardest things in the implementation process is getting the entire workforce to understand and commit to the strategy to the end. The findings demonstrated that lack of employee involvement in the formulation stage leads to inappropriate developments and hinders effective strategy implementation. Thus, it is very important to ensure that the strategy formulation team consists of owners, managers, experts, and employees from different levels of the organisational hierarchy. Furthermore, the study revealed that it is vital to align the main organisational elements such as structure, culture, and resources to the new strategy before the implementation.

Often strategy implementation fails as little consideration is given to resources required or the time needed for successful implementation. Managers are forced in many activities to take on additional tasks while still having tasks to implement and tend to lose focus on strategies and lack of follow-through, which invariably leads to strategic failures. To overcome this issue, resources (financial, physical, and human) and time should be carefully considered and allocated prior to starting implementation. It was noticed that inappropriate allocation of human resources, indicated in the form of low

productivity, lack of commitment and motivation and lack of knowledge and skills, is a major barrier to get involved with the strategic implementation properly. Thus it is essential to develop a motivational plan which is based on performance and a training and development plan to align the competencies of employees with the requirements of the strategies.

Further, it was found that due to wide-ranging managerial issues, strategic planning and implementation are either neglected or limited managers to short-term planning, leaving organisations distant from a clear future. It is noted that the selected manufacturing organisations depend on the managers who can react to environmental changes quicker than the managers who can act proactively in facing challenges, threats and opportunities. At the selected manufacturing organisations managers are so deeply engaged with routine work that they hardly find time to engage with more important activities of the organisation such as developing sound strategies. Organisations should provide more time to managers for strategic planning and monitoring the implementation process. To support managers at all levels, it is essential to introduce well-planned training programmes in leadership and managerial skills.

It was found that organisational culture is one of the most important determiners of ineffective strategy implementation. Thus building and sustaining an organisational culture that facilitates, accept and accelerate strategic change is very important for manufacturing sector organisations. Fostering entrepreneurial spirit, a sense of accountability and consensus, creativity, and information sharing are the keys to successful strategy formulation as well as implementation.

Finally, according to the participants in this study, strategic implementation at manufacturing sector organisations has always been affected by external environmental changes. These organisations are strongly influenced by imposed rules and regulations locally and internationally, economic factors such as inflation and changes in local and global market situations, and natural environmental factors such as Covid -19 pandemic. They have experienced threats more than opportunities. In order for strategies to be implemented successfully, managers at all levels should become more attentive to the obstacles of strategy implementation. By continuously identifying and

addressing the barriers and monitoring the implementation process, the chances of success are increased.

This study provides a contribution to an explanation of why so many strategy implementation efforts fail in manufacturing sector organisations. It is one of the very few papers addressing the strategic issues of Sri Lankan manufacturing sector organisations. The study gives due recognition to the different issues in strategy implementation. However, the findings of this study may have limited applicability as this research demonstrates its application only to the selected organisations in Sri Lanka. Future research may carry on the task of testing the applicability to a wider spectrum of the manufacturing sector and service sector organisations in varying contexts.

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DISCOURSES, PRACTICES, AND STRATEGY: A BOURDIEUSIAN EXPLANATION FOR STRATEGY-AS- PRACTICE PERSPECTIVE

De Peiris, T. N. S.

University of Sri Jayewardenepura, Sri Lanka
nayomipeiris@sjp.ac.lk

Kaluarachchi, K. A. S. P.

Department of Management and Organisation Studies, Faculty of Management and Finance, University
of Colombo, Sri Lanka

Abstract

The purpose of this paper is to explain the question of how consequential practices are produced within the strategy-as-practice perspective from the theory of practice of Pierre Bourdieu. This paper is based on a general review of literature on strategy-as-practice perspective, practices, and theory of practice. It conceptualises the strategy work of organisational actors with the three concepts of field, habitus, and capital by focusing on the production of practices that are consequential for organisational strategy. A doxic organisational field with agreed upon practices and consequential strategy would be transferred into a relatively fixed new doxic field along with a new set of practices and organisational strategy due to the struggle between the heterodox and orthodox discourses. Within the struggle between these discourses, conservation strategies and subversion strategies are used by organisational actors to support the establishment of their preferred discourse as the dominant discourse within a doxic field. Further, these discursive struggles of the field also render changes in capital, positions, and identities of organisational actors while producing a doxic field with new practices and strategies. As per the implications of this conceptualisation, future researchers would be able to use the theory of practice in their studies together with strategy-as-practice perspective, focusing on micro-level practices in strategising. This paper suggests using all three concepts in the theory of practice with the focus of consequential practices for strategy since most studies, up-to-date, have used only one concept out of the three, despite the fact that there is a significant criticism on partial use of the theory of practice.

Keywords. Discourses, Practices, Strategy, Strategy-As-Practice, Theory of Practice

1. Introduction

Scholarly work on organisational strategy and strategy work to date has diversified into multiple arenas. Research on ‘what is strategy’ and ‘what is included in it,’ ‘how strategy work is performed,’ and ‘who are involved and responsible for organisational strategy are prominent among these scholarly works. In line with the broader question of ‘what of strategy’, directions, plans, guiding principles, and regularities have drawn the attention of researchers. Yet, strategies do not emerge from a vacuum since strategising comprises those ‘actions, interactions and negotiations of multiple actors and the situated practices’ that they draw upon in accomplishing that activity (Jarzabkowski et al., 2007, as cited in Balogun et al., 2014). Thus, scholars have identified the importance of the role of organisational actors for successful strategy work in diverse contexts (Bingham & Wise, 1996; Kemp et al., 1993).

Work on the strategy of an organisation— Strategy work— has been discussed under different headings throughout the evolution of strategic management literature. Ansoff (1965) (as cited in Nutt, 1987) for instance, has used strategic planning as the sign used to signify an integrated system with steps that range from strategy formulation to implementation (as cited in Nutt, 1987). Scholars have used several terms to denote the work involved in creating the strategy of an organisation. Mintzberg (1987) has used the five Ps to describe the strategy from five perspectives, while Balogun et al. (2014) have stressed on ‘talk’ in all its forms, including conversations at the water cooler, rumours and gossip about competitors, formal strategy meetings, mission and vision statements, corporate accounts, and carefully crafted press releases as practices involved in strategising, since such talk is consequential in (re)producing, understanding, and communicating the organisational strategy.

Bourgeois (1980) distinguished between two broader streams of strategy research: content research and process research in strategy. Strategy content research addresses the question ‘what’ by examining the conditions of success and failure in strategising while strategy process research addresses the ‘how,’ that is., the manner in which a particular strategy emerges by humanising the field of strategising (Chia & Holt, 2006). With the process view on strategising the actions, events, contextual circumstances or the internal organisational going-on that gives rise to strategy was the focus of concern

of some researchers (Pettigrew, 1992, 1997; Van de Ven, 1992). From the processual perspective on the dynamics and behavioural aspects of organisational processes, the emergence of strategy is deemed to be continuous and changing, and patterned and idiosyncratic with individualistic and group orientation. This perspective focuses on the individuals and organisations, and the sequence of events and causal relationships that lead to organisational change (Van de Ven, 1992). Yet, many process-based studies tend to view strategising as a ‘whole process’ with less attention to micro-level activities of strategising (Whittington, 2006). Later on, this lack of attention leads to practices in strategising to examine its micro-practices. Nelson (1991, p. 64) refers to this redirection of attention to the internal life of organisational micro-processes via strategy-as-practice research as probing the ‘black box’ of the organisation.

The strategy-as-practice perspective shares many of the insights shared in earlier processual work (Pettigrew, 1987). Yet, the practice perspective calls for greater emphasis on understanding the minutiae of both the micro-processes and practices of strategising. Further, the practice perspective reorients strategy research towards the work, talk, activities, and competencies of individuals who are engaged as strategists in a particular context. With particular emphasis on how managers are engaged in strategising, Jarzabkowski (2004) has articulated the research priorities in a strategy-as-practice perspective that emphasised the micro-activity based approach. The strategy-as-practice research explores strategy by considering it as a situated, socially accomplished activity that organisational people do rather than possess (Jarzabkowski et al., 2019; Whittington, 2006). Accordingly, strategising comprises actions, interactions, and negotiations of multiple actors and the situated practices they draw upon in accomplishing that activity (Jarzabkowski & Sillince, 2007). Thus, strategy-as-practice perspective mainly focuses on the micro-level activities or the local strategising practices. Yet, not all practices are strategic (Jarzabkowski et al., 2021). Jarzabkowski et al. (2021) propose considering the consequentiality of strategy, that is, what is important to a wider range of actors and following the consequences of these actors’ practices through the pattern of action that they construct in deciding whether practices are strategic or not.

It is against such a backdrop this paper intends to provide an explanation to the question of ‘how consequential practices are produced’ within the strategy-as-practice

perspective from the theory of practice of Pierre Bourdieu. Accordingly, this paper is based on a general review of literature on strategy-as-practice perspective, practices, and theory of practice, and it conceptualises the strategy work of organisational actors with the three concepts of field, habitus, and capital by focusing on the production of practices at organisational context, to explain how consequential practices for organisational strategy are produced. There are three main sections in the paper, followed by the conclusion and implications. First, the paper identifies six prominent theoretical perspectives by considering the theorising of the nexus between local strategising and larger social phenomena. It then explains the nature of practices, as practices are the focus of attention within the strategy-as-practice perspective. In the final section, the paper conceptualises the relationship between local strategising practices and larger phenomena in the world vis-à-vis the Theory of Practice.

2. Literature Review

2.1 The Relationship between Local Strategising Practices and Larger Phenomena in the World

Strategy-as-practice research agenda has promoted the relationship between local strategising practices and larger phenomena in the world (Gomez, 2015; Seidl & Whittington, 2014). Seidl and Whittington (2014) have classified the perspectives within the strategy-as-practice research body by considering two main ontologies of researchers. This classification has focused on how researchers link the micro-level local activities of strategising to the larger phenomena in the world. In doing so, Seidl and Whittington (2014) have mainly considered whether researchers consider the horizontal direction or the vertical direction when linking micro-level activities to larger phenomena in the world. The vertical direction is multiple levels above the micro-local level of strategising, and includes meso-level and macro-level structures and systems like the capitalist system (Knights & Morgan, 1991). Yet, on the other hand, in linking local strategising practices to a horizontal direction, networks of essential actors, things, and places are included (Seidl & Whittington, 2014). Accordingly, the flat ontologies radiate horizontally from the single instance to trace the network of connection, while tall ontologies include a vertical route of levels, typically, meso-and macro-levels. In flat ontologies, micro-level phenomena are explained with networks of connections,

while in tall ontologies, it is done by referring to meso-level or macro-level structures or systems.

Within the strategy-as-practice research body, six prominent theoretical perspectives can be identified by considering the theorising of the nexus between local strategising and the larger social phenomena such as the Foucauldian perspective, the perspective with Giddensian structuration theory, Archer's critical realism, Narratology, Wittgenstein's language game concept, and Bourdieusian perspective (Seidl & Whittington, 2014).

2.2 Foucauldian Perspective

This perspective conceptualises strategy as a historically situated, macro-level discourse constituting "a field of knowledge and power" which defines what the "real problems" within organisations are and what the parameters of the "real solutions" to them are (Seidl & Whittington, 2014). Discourse (larger social phenomena) and discursive practices (local strategising) are the primary focus of this perspective while power effects of strategy discourse, disabling and enabling of actors with discourse, internal struggle of organisations within broader discursive practices are examples of the focus of this perspective (for example, Ezzamel & Willmott, 2008; Hardy et al., 2000; Knights & Morgan, 1991; Paroutis & Heracleous, 2013; Vaara & Monin, 2010; Wenzel & Koch, 2017).

2.3 The Perspective of Giddensian Structuration Theory

In this perspective, the local strategising activities are linked to the wider society (Jarzabkowski, 2004). Accordingly, strategising is conceptualised by focusing the management practice-in-use as the primary unit of analysis. The micro and macro levels are linked with these practices, and the macro-level practices are deployed by actors reflectively. Here, local action is identified with a variation on the macro-level. Consequently, strategising is conceptualised with three components (Whittington, 2006): i. Strategy practices (shared routines of behaviour, including traditions, norms and procedures for thinking, acting, and using "things"); ii. Strategy praxis (actual activity, what people do 'in practice'); and iii. Strategy practitioners (the strategists who carry out and perform the practices). Researchers in this area have studied strategy

practices (interpretation of change, calculations used in budgeting, issue-selling, etc.) of a particular context by focusing on agency and structure, meanings, the dialectical control, norms, routines, and schemas (Balogun & Johnson, 2005; Jarzabkowski, 2008; Kaplan, 2008; Paroutis & Heracleous, 2013; Paroutis & Pettigrew, 2007).

2.4 Archer's Critical Realism

Herepath (2014) argues that critical realism allows the micro and macro levels to be analysed in their own terms and clarifies the specific mechanisms through which these different levels are linked over time. In this perspective, the interplay between macro societal structures and micro-level activities takes place in a morphogenetic-morphostatic cycle with three phases: i. Structural conditioning (Societal structures shape the local situations in which strategists find themselves); ii. Socio-cultural interaction (Strategists in their structurally conditioned situations use their subjective and reflexive mental powers to choose particular courses of action); and iii. Structural reproduction/elaboration (The strategists' activities, in turn, reproduce or elaborate societal structures) (Seidl & Whittington, 2014).

2.5 Narratology

In the perspective of narratology, the practice of strategy, in strategy making or in strategy activities, the narratives play a crucial role. Accordingly, the managers and others or the strategy practitioners engage in telling micro-stories with the influence of the available institutionalised macro-level stories about strategy, strategy-making, etc. When the stories are exchanged with internal and external parties and engender mutual commitment, subsequent story-telling becomes entrained and generates an ongoing thrust and direction for the organisational members, which embed elements from multiple levels (Fenton & Langley, 2011). Thus, the strategy narratives emerge from a process in which fragments of different micro and macro narratives get layered on top of each other, and this is identified as the process of laminating.

2.6 Wittgenstein's Language Game Concept

According to this perspective, the field of strategy is a network or ecology of different language games regulating the proper use of strategy language (Seidl, 2007). The link between the local strategising practices and the wider society is taken into consideration

by the concepts of structural coupling, family resemblances, etc., within this perspective.

Further to Wittgenstein's language game concept, Seidl (2007) has also briefed on the Lyotard and Luhmann theoretical approaches on strategy field since those approaches share a similar line of reasoning which they call a systemic-discursive perspective. Accordingly, when explaining the link between a particular strategy field and a larger macro context, Seidl (2007) refers to incommensurable discourses conceptualised as language games, genres, or communication systems by Wittgenstein Lyotard and Luhmann respectively. The reference to discourse, in this sense, is on how social phenomena integrate into particular discourses.

Accordingly, the social world is made up of incommensurable discourses which do not have a direct exchange. This renders to the non-transferability and the non-translated nature of elements of one discourse to another. Rather, one discourse may cause positive or negative 'perturbations' in another discourse though it never becomes a communication in another discourse. Further, reference of elements of one discourse in another discourse should be treated as an internal construct of that second discourse. For instance, the strategy discourse in the scientific, economic, and educational systems has to be treated as fundamentally different discourse, without any possibility of 'transferring meaning' (Seidl, 2007, p. 204), and in multiple strategy fields, there is a multitude of different 'autonomous strategy discourses' (Seidl, 2007, p. 206) with the effect of macro or grand discourses.

2.7 Bourdieusian Perspective

The Bourdieusian perspective considers strategies emanating from an internalised modus operandi that reflects our culturally mediated disposition (Chia & Holt, 2006). Thus, the embeddedness results in internalised modus operandi in a social field that shapes the strategist's individual dispositions, which, in turn, guides their local strategising activity. Within this perspective, culturally mediated dispositions are termed habitus, and the habitus links the wider social field to the local strategising situation.

Within the theory of practice, Bourdieu (1990), stressed on the ‘habitus’ behind the collective and individual practices. Accordingly, Bourdieu explained how familial manifestations of external necessities—economic and social— impact the structures characterising the determinates of class conditions of existence and then influence the structure of habitus. The structure of habitus then acts as the basis of the perceptions and appreciation of all subsequent experiences that influence the practices. This system of dispositions guarantees ‘correctness and constancy over time’ (p.54). Thus, the concept of habitus explains the internalised dispositions those act as an ‘infinite capacity for generating products’—thoughts, perceptions, expressions, and actions— whose limits are set by the historically and socially situated conditions of its production, the conditions (Bourdieu, 1990, p.55)

2.8 Practices

The need for identification of the link between the larger social phenomena and the local strategising is connected to the concept of ‘colonisation’ within the Bourdieusian perspective. According to Bourdieu, colonisation is the tendency for the widespread field to influence or colonise the restricted field (Everett, 2002). The widespread field of Western management practices, for instance, may colonise an organisation (a restricted field) in the global South. Suppose the level of colonisation or influence is significant. In that case, the field is called a heteronomous field, and if the level of colonisation is not significant, then the field is autonomous (Bourdieu, 1985). Yet, fields differ in the degree to which colonisation occurs (Everett, 2002). This is because agents [e.g. strategists at organisations] adopt strategies that match their resources and expectations at the encounter of their own trajectories and the field’s evolution (Bourdieu & Wacquan, 1992).

The practice turn is more concerned with the generation and transmission of practice complexes and immanent regularities or strategy associated with them. Chia and Mackay (2007) explain how the colonisation of restricted fields happens by stressing the transmission of practices from Bourdieu's perspective. Accordingly, this transmission of practices is identified as sociality of inertia and denoted with terms of cultural transmission, socialisation, institutionalisation, disciplinary regimes etc. The results of this transmission of practices are historically and culturally shaped

internalised propensities and dispositions which are also signified with the term ‘modus operandi’ within the Bourdieusian perspective of linking local strategising with larger world phenomena. Individuals, organisations, institutions, societies, and strategies are secondary stabilised effects of such culturally transmitted social practices, subjected to differing degrees of colonisation. The consistency of actions observed over time belie an immanent strategy that has been historically and culturally transmitted through everyday practice.

Practices are routinised types of behaviour (Reckwitz, 2002, p. 250) or doings and sayings that are spatially and temporarily dispersed (Schatzki, 2002). It is a practice that orients and educates our attention and shapes our dispositions (Chia & Mackay, 2007), and it is social skills that enable us to come to know what it is to be a person, an object, an institution (Dreyfus, 1991). Chia and Mackay (2007) specifically state that social practices are about understanding what it means to be human and how to act, often unconsciously, through socialisation.

Practices are embodied in us (Dreyfus, 1991, p. 27) and identified as mindless practical coping (Chia & Mackay, 2007, p. 233). Dreyfus, (1991, p. 27) has further emphasised the primacy of this form of ‘mindless’, non-thematic everyday practical skills over mental representations. Shotter and Katz (1996) have discussed about articulating practices from ‘within’ practice itself. Chia and Mackay (2007), referring to social anthropology writers, state that the ‘unconsciously acquired practice-complexes’ (p. 219) generate more strategies than individual consciousness and intentionality. Further, they state that most human actions/practices are taking place as ‘mindless practical coping’ (p. 233).

Practices are carried out from a cultural tradition, and they form the background of skilled coping capabilities that enable us to act appropriately (Chia & Mackay, 2007). Thus, practices can also be identified as culturally and historically transmitted regularities detectable through the patterns of activities actually carried out (Chia & Mackay, 2007), which are temporarily unfolding and spatially dispersed nexus of doings and sayings (Schatzki, 1996, as cited in Chia & Mackay, 2007) organised around shared understandings (Schatzki, 2002). Further, practices are also identified as shared

know-how and discriminations (Dreyfus, 1991, p. 22). According to Reckwitz (2002) and Schatzki (2002), an individual requires background knowledge and understanding to perform and participate in a practice. This implies the trans-individuality of cultural transmission, socialisation, institutionalised constraints, and embodied mannerism (Chia & Mackay, 2007) of practices.

According to Bourdieu (1990), if we want to truly understand practice, we need to return to practice, the site of the dialectic of the ‘modus operandi’, which produces a system of durable, transposable dispositions called ‘habitus’. Consequently, practices can be better understood through internally acquired habituations and pre-dispositions that unreflectively shape our everyday responses. This notion is captured by the ‘Theory of Practice’ by Pierre Bourdieu (Bourdieu, 1972/1977).

2.9 Linking the Micro and Macro from Bourdieusian Perspective: The Theory of Practice

People are engaged in building a satisfactory life, and hence, they engage in different practices accordingly. Bourdieu signifies ‘concrete human activities’ by practices (Bourdieu, 1990, p. 13). Yet, Golsorkhi et al. (2015) state that Bourdieu mostly uses the economy of practice, or the practical sense, instead of the word practice.

Theory of Practice by Pierre Bourdieu (1990) explains why and how individuals behave in certain ways or follow certain practices, but not in other ways to accomplish the satisfactory life they aspire to. This practice has three main interrelated concepts: capital, habitus, and field, which explains interactively, a practice of an individual in a particular spacio-temporal setting. Accordingly,

$$\text{Practice} = [(\text{habitus}) (\text{capital}) + \text{field}]$$

2.10 Field and Discourses

An organisation can be identified as a field, and a field can be identified as a field of forces (Bourdieu & Wacquan, 1992). The functioning of the field is identified as a struggle between these forces which are represented by different participants (organisational actors) of the field who are identified as agents. A field has its own

rules, structure, and positions. Within a field, different agents occupy positions (job positions) in the structure based on the rules in a particular spacio-temporal setting (Gomez, 2015). Yet, the rules, structure, and positions are in a continuous change resulted by the ongoing struggle of the forces. The struggles of forces are taken over resources, stakes and access (Bourdieu, 1990); for instance, intra-organisational actors struggling within the organisation to control its policies, identities, and strategies of action or the space of position taking (Bourdieu, 1990 as cited in Emirbayer & Johnson, 2008).

Doxic society or doxic field (here, a doxic organisational field) is a society/field where the established cosmological and political order are perceived not as arbitrary (as one possible order among others), but as a self-evident and natural order (Bourdieu, 1972/1977). Accordingly, doxa is the taken-for-granted assumptions on the way things work in the field (Gomez, 2015). The doxa is a belief in the legitimacy (Gomez, 2015) of a society/field at a particular moment of time, and the question of legitimacy does not arise, and symbolic struggles are not fought in a doxic society (Everett, 2002). Thus, it can be argued that when actors interested agree upon and activate a set of practices and identify them as their strategy, at that moment, that organisation can be identified as in a state of doxa.

Bourdieu's notion of heretical discourse is useful in understanding a transformation (Ryazanova-Clarke, 2008). The challenge to this natural order or common sense within doxic field comes in the form of the question of legitimacy. These challenges come in the form of heterodox discourse. Heterodox discourses which may justify new practice(s) in strategy work in an organisational setting will be linked to macro discourses of innovation, strategic change, organisational development, blue ocean strategy, and technology breakthroughs among others. Floris et al. (2019) have shown how macro discourses of accounting standards and global economic crises have been interwoven into the organisational discourses of new organisational strategy, illustrating the impact of the heterodox discourses. Apart from the above-mentioned studies, there are studies that provide evidence for the macro discourses which are impacting organisations as heterodox discourses, and thereby, on individual practices in different contexts. For instance, scholars have shown how macro discourses of

government—control of corruption, regional deregulation, legal systems and economic policies, as well as tax and bankruptcy laws—can strongly influence individuals' entrepreneurial decisions and their practices in a particular region (Aidis et al., 2012; Anokhin & Schulze, 2009; Lim et al., 2010; Zhou, 2011 as cited in Su et al., 2017). Such heterodox discourses spawn efforts to defend doxa (Everett, 2002) or heterodox discourse will result in the appearance of orthodox discourses. Within the organisational context, these orthodox discourses try to defend the doxa with existing strategy and practices.

In line with the heterodox discourses and orthodox discourses, two sharply opposing strategies of action—conservation strategy and subversion strategy—are also encountered. The aim of conservation strategy is to preserve the principle of hierarchisation (linked with orthodox discourses) that is most favourable to some organisational actors and to safeguard or even enhance their position within the hierarchy. On the other hand, the subversion strategy (in line with the heterodox discourses) aims to transform the system of authority within the field, including potentially the very rules of the game according to which ordinary function, to some other organisational actors own benefit (Bourdieu, 2005).

Consequently, a doxic organisational field with agreed upon practices and consequential strategy will be transferred into a relatively fixed new doxic field with a new set of practices and organisational strategy, as a result of the struggle between the heterodox and orthodox discourses. Within this struggle between these discourses, conversation strategy and subversion strategies are used by the organisational actors to support establishing their preferred discourse as the dominant discourse within a doxic field.

2.11 Habitus and Practices

According to Bourdieu and Wacquan (1992), agents (top managers in this instance) are reasonable without being rational. Thus they adopt strategies—resulting in macro discourses—that match their resources and expectations at the encounter of their own trajectories and the field's evolution. Thus, from Bourdieu's perspective, new strategies and practices linked with the strategy work of managers are not just a matter of pure

calculations, but they refer to and are embedded in ‘habitus’ (Foster, 1986). Thus, habitus produces reasonable strategies (Gomez, 2015).

The habitus is intended to provide the mediating link between social structure (the macro)—which may be represented via macro discourses presented as heterodox discourses referred above—and individual action/practice (the micro) (Everett, 2002). Thus, habitus is a mechanism linking individual action and macro-structural settings within which future action is taken (Emirbayer & Johnson, 2008). The elaboration of Gomez (2015) and Nash (1990) on habitus provides an insight into this link. Gomez (2015) identifies habitus both as personal and social. It is personal since it is developed through the particular experience of the agents and linked to the personal dispositions of the agents and their particular experiences in the field. Hence, habitus exists in the form of mental and corporeal schemata, a matrix of perception, appreciation, and action (Bourdieu & Wacquan, 1992). On the other hand, habitus is social because it is linked to the context of the field and the agent’s position inside this field (Gomez, 2015). Thus, it is correct to say that society may be in the individual as the habitus (Meisenhelder, 1997 as cited in Everett, 2002). Further to these personal and social sides of habitus, Foster (1986) has highlighted it as the culture that pervades or saturates social processes. Nash (1990) classifies habitus, which may be manifested in three different ways as collective habitus (as a unifying cultural code), dispositional habitus (an internalised cultural code), and manifested habitus (as the practice of a characteristic style).

There may be heterodox discourses that are attached to such discourses of organisational learning and sensemaking, institutionalising, socialising, internalising behaviour, and training and development. Managers will formally or informally enforce practices during the implementation of strategy, which will become stabilised in the long run since, most often, employees will follow those practices even without questioning. Over time, organisational practices can evolve into norms with regularities through the relevant organisational discourses and become orthodox discourses in the long run. Consequently, organisational members will follow them, irrespective of their legality and formality, and those norms will become a habitus of actors, and part of the work culture of the organisation as a sensemaking tool (as dispositional habitus). With

this sensemaking, if organisational actors are deeply conscious of or understand these practices attached to organisational strategy well, that understanding counts for a large part of the success of the strategy (ex: Davis et al., 2012; Seidl & Werle, 2018), and will contribute to producing a doxic field for some period. In doxic organisational field, at a particular spacio-temporal setting, if the agreed upon or taken for granted strategies, practices, procedures, activities, and rules are considered as natural order, organisational actors will produce individual and collective practices (which are collectively orchestrated (Bourdieu, 1990, p.53)) linked to organisational strategy.

Regularities and irregularities or regular practices and irregular practices can be interpreted with the concept of 'habitus' since habitus is a tendency to generate regulated behaviour apart from any reference to rules (Bourdieu, 1962). Adopting its own version of strategies, the habitus tends to generate all the reasonable common sense behaviour of organisational actors, which are possible within the limited regularities, and are likely to be positively sanctioned because they are objectively adjusted to the logic characteristics of a particular field, whose objective future they anticipate (Bourdieu, 1990). Further, the habitus tends to exclude all extravagance, that is, all the behaviour that would be negatively sanctioned because they are incompatible with the objective conditions (Bourdieu, 1990). The durability of dispositions leads to regular practices, which are required in strategy work. The dispositions durably inculcated by the possibilities and impossibilities, freedoms and necessities, opportunities and prohibitions inscribed in the objective conditions generate dispositions objectively compatible with these conditions, and in a sense, pre-dated to their demands (Bourdieu, 1990). In other words, a specific field will influence the habitus of its members through the integration of its rules (Gomez, 2015). Thus, habitus is the result of inculcation as well as an appropriation of the field's doxa (Gomez, 2015).

Consequently, responses of habitus are never ruled out (Bourdieu, 1990). Yet, responses are first defined, without any calculation, in relation to objective potentialities, immediately inscribed in the present, in the way of things to do or not to do, things to say or not to say, in relation to a probable, 'upcoming' future (Gomez, 2015). Thus, habitus ensures the active presence of past experiences, which, deposited in each organism in the form of schemes of perception, thought, and action, tend to

guarantee the correctness of practices and their constancy over time, more reliably than all formal rules and explicit norms (Bourdieu, 1990). Stimuli do not exist for practice in their objective truth, as conditional, conventional triggers, acting only on the condition that they encounter agents conditioned to recognise them. Regularities inherent in an arbitrary condition which tend to appear as necessary, or natural even, since they are the basis of the schemes of perception and appreciation through which they are apprehended. If an irregularity is identified, that means the anticipations it generates tend to ignore the restrictions to which the validity of probabilities is subordinated. The anticipation of habitus has given disproportionate weight to early experiences (Bourdieu, 1990). Thus, the habitus is a structured structure. Or, to simplify, it is the mental or cognitive structure of the individual which controls the behaviour/practice (Bourdieu, 1990).

2.12 Capital and Positions

The positions do not determine the practices. It is rather an agent at similar social positions which may have different personal perspectives on practices on which their practices depend up, and it is termed as personal dispositions or habitus. As discussed above, habitus is embodied and deposited (Everett, 2002) or socially inscribed in the body (Bourdieu, 1962; Foster, 1986) within individual agents, while symbolic (like organisations) and social structures constitute habitus (Everett, 2002). Thus, the habitus makes possible the free production of all the thoughts, perceptions, and actions/practices inherent in a particular condition of its production – and only those (Bourdieu, 1990). Consequently, habitus produces individual and collective practices (Bourdieu, 1990). The habitus is constituted in the practice of agents. It is always oriented towards practical function and provides a sense of the social game (Bourdieu, 1990). Thus, habitus is the source of most practices (Bourdieu, 1962; Foster, 1986). Accordingly, the social positions of organisational agents are constrained and conditioned by ‘practices’.

The positions of an agent within a field will be determined and influenced by the volume and structure of capital they possess (Gomez, 2015). Bourdieu (1986) defines capital as accumulated labour (in its materialised form or its incorporated, embodied form). In objectified or embodied forms, capital takes time to accumulate. Capital may

be of any number of different forms or species (Bourdieu, 1986). Accordingly, economic capital, cultural capital, and social capital can be identified as the three main types of capital. Economic capital is the monetary and material wealth, commodities, and physical resources. Cultural capital means less tangible things, including knowledge, skills, taste, lifestyle, and qualifications. Social capital is the power and resources that stem from a network of relationships. This includes the connections and the added value that membership in a group brings (Ex: manners, bearing, and pronunciation). The political capital is a variant of social capital (Ex: social networks of the political party, and the union and the patrimony in those networks).

There are different manifestations of cultural capital (Everett, 2002). Embodied cultural capital is a product of external wealth converted into an integral part of the person (Bourdieu, 1986). These are long-lasting dispositions of the mind and body. Examples of embodied cultural capital are muscular physiques, suntans, language skills, bodily comportment, and a personal familiarity with work of art. In contrast, objectified cultural capital is seen in cultural goods such as pictures, books, dictionaries, instruments, machines, and writing. Possession of embodied capital is a precondition for the profitable appropriation of objectified capital. Or profit from objectified capital can only be obtained in proportion to the extent of the holder's embodied capital. Cultural capital is obtained in a less straightforward manner, and a disguised form of capital, and transmission is riskier. The disguise leads to the misrecognition of the cultural arbitrariness or socially constructed nature of the world, more enduring and less convertible feature, and susceptible to attrition than economic capital. Linguistic capital is a subset of cultural capital and it is an embodied form of capital. The manifestation of this capital is in and measured through linguistic style. It is demonstrated through the ability to demonstrate competence in the complex structures of that language.

Further to the three main types of capital, Everett (2002) identifies institutionalised or certified capital and symbolic capital while Gomez (2015) briefed on bureaucratic capital, financial capital, technology capital, organisational capital, and informational capital as the forms of capital in an organisation. Institutionalised or certified capital inheres within the institutions or the certificate (Everett, 2002), and officially

recognised and guaranteed competencies are examples of this type of capital. This involves a performative magic of the power of instituting, an imposition of recognition through social alchemy and ritual (ex: academic qualification). Symbolic capital arises from other forms of capital when the arbitrariness of the possession and accumulation of these other forms is misrecognised (Everett, 2002). Different people in different social positions and with diverse social histories have differential access to symbolic capital and some people are better equipped and better situated to use symbolic elements in playing the game in their efforts at social production (Foster, 1986). The other forms of symbolic capital that form the ultimate basis of power—wealth— can exert power and exert it durably (Everett, 2002). According to Gomez (2015), the bureaucratic capital is linked to responsibilities, action domain, hierarchical level and seniority, while financial capital refers to the control or direct and indirect financial resources that agents can mobilise through their budgets. Further, technology capital is possessing expertise or specific skill Organisational capital is the capacity to master procedures and formal rules, and information capital is privileged access to knowledge.

With time, the value granted to the various forms of capital varies from field to field (Gomez, 2015). On the other hand, all forms of capital are interconnected, while different types of capital are linked with different degrees of liquidity, convertibility, and susceptibility to attrition. Capital can be transformed from one type to another. Economic capital, for instance, can be transformed into cultural capital. Capital can also be transferred from one person to another. The economic capital of parents, for example, can be transferred to the economic capital of their children.

Moreover, agents occupy positions in a field during struggles, with the behaviour of usurping, excluding, and establishing a monopoly over the mechanisms of the field's reproduction and the types of power effects in it (Everett, 2002). Agents like organisational actors distinguish themselves from others within their field by means of symbolically meaningful position-taking, e.g. work, services, acts, arguments, products – which derive their semiotic significance in relational fashion from their difference vis-à-vis other such position-taking within a space of position-taking (Emirbayer & Johnson, 2008). Occupants of these distinct positions engage in the ongoing struggle within the field as bearers of different amounts and combinations of resources (capital),

some of which yield greater advantages within that particular field than any other. Thus, within the struggles in the field, two sets of agents emerged as the dominants and the dominated (Everett, 2002) based on the resulted positions with struggles. This position taking either conserve or transforms the structure of the relationships of the forces that constitute the field (Bourdieu & Wacquan, 1992).

A field always changes with habitus and capital during the struggles of forces and renders changes in practices. On one side, individuals often work to discredit the form of capital upon which the force of their opponents rests and try to valorise the species of capital they preferentially possess or support (Bourdieu & Wacquan, 1992) during the struggles like strategy work in the field. Thus, the character of the field changes due to the changes in proportions of capital and struggles over the capital in the field change (Everett, 2002). On the other side, habitus—and thereby practices—are always changing because the experiences to which habitus is constantly subjected are multiple and varied, reinforcing and modifying habitus (Bourdieu & Wacquan, 1992). On the other hand, this change is influencing the social actors' deeply ingrained sense of identity and his/her less fixed occupational identity (Meisenhelder, 1997, as cited in Everett, 2002). Consequently, these discursive struggles of the field also render changes in capital, positions, and identities of organisational actors while producing doxic field with new practices and strategies.

3. Conclusion and Implications

This paper explained the 'practices' within the strategy-as-practice perspective from the theory of practice (1990) of Pierre Bourdieu. With an explanation to the nature of practices, as practices are the focus of attention within the strategy-as-practice perspective, the paper conceptualises the relationship between local strategising practices and larger phenomena in the world vis-à-vis the three concepts of field, habitus, and capital in the Theory of Practice.

Consequently, a doxic organisational field with agreed-upon consequential practices and strategy will be transferred into a relatively fixed new doxic field along with a new set of practices and organisational strategy resulting from the struggle between the heterodox and orthodox discourses. Within this struggle between these discourses,

conversation strategy and subversion strategies are used by the organisational actors to support the establishment of their preferred discourse as the dominant discourse within a doxic field. Further, these discursive struggles of the field also render changes in capital, positions, and identities of organisational actors while producing a doxic field with new practices and strategies.

As per the implications of this conceptualisation, future researchers would be able to use the theory of practice in their studies together with strategy-as-practice perspective with the focus of micro-level practices in strategising. More specifically, it is suggested to use all three concepts—field, habitus, and capital—in the theory of practice with the focus of practices since most studies have used only one concept out of the three concepts, despite the fact that there is significant criticism on partial use of the theory (Emirbayer & Johnson, 2008).

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THE FACTORS ASSOCIATED WITH THE SUCCESS OF MICRO SMALL AND MEDIUM ENTERPRISES: A STUDY AT NALLUR AND JAFFNA DIVISIONAL SECRETARIAT, SRI LANKA

Sayanthan, B.

Department of Accounting, Faculty of Management Studies and Commerce, University of Jaffna
sayanthan808@gmail.com

Sarathpapu, R.

Department of Accounting, Faculty of Management Studies and Commerce, University of Jaffna

Abstract

Micro Small and Medium Enterprises (MSMEs) are often the driving forces and backbone for the nation. The study aims to examine the impact of MSMEs factors on the business success and the relationship between the two variables at Nallur, Jaffna divisional secretariat. All the MSMEs who completed three years of operation in the Jaffna and Nallur divisional secretariat were the population for the study, and 80 MSMEs were selected for data collection. Data were collected using a questionnaire. The conceptual model was derived from theories and past research. The identified factors influencing the MSMEs success are Marketing, Technics and Technology, Finance, Information Access, Social Network, Legality, Business Plan, Entrepreneurial Readiness, and Government Support. Marketing and finance have a significant impact on MSMEs success, and finance and marketing have a relationship with SMEs success. Factors other than Marketing and Finance are insignificant. This study finding could help managers of MSMEs to gain knowledge about the primary influencing factors on their success. The study can help MSMEs to be successful in the competitive world.

Keywords. Micro small and medium enterprises, Success factors, Business success, Nallur, and Jaffna divisional secretariat

1. Introduction

The term MSME is used to denote micro, small and medium enterprises. Different countries use different definitions for MSMEs based on their level of development. The commonly used yardsticks are the total number of employees, annual turnover, and total

investment. In the Sri Lankan context, the MSME policy framework defines MSMEs based on the number of employees and annual turnover. The category of Micro Small and Medium Enterprises (MSMEs) comprises enterprises that employ less than 300 employees and have an annual turnover not exceeding Rs.750 Mn.

The MSME sector has been identified as an important strategic sector in the Government of Sri Lanka (GOSL). It seems like a driver of change for inclusive economic growth and regional development, employment generation, and poverty reduction. MSME sector is envisaged to contribute to transforming lagging regions into emerging regions of prosperity. MSMEs have long been believed to be important in supporting economic development within a country (Akhtar, 1997). Small and medium enterprises are being considered as engines of economic growth worldwide. One of the most important roles of MSMEs in this context includes poverty alleviation through job creation. The developed and developing countries are taking extreme benefits from MSMEs and, therefore, capable of accelerating the economy. It plays a considerable responsibility in providing further employment and conversion economy.

Increasing business competition, in particular against large and modern competitors, puts MSMEs in a vulnerable position (Mazzarol et al., 1999). In Sri Lanka, most MSMEs operate along traditional lines in production and marketing. It has been argued that the main problem for MSMEs in developing countries is not their small size but their isolation, which hinders access to markets and information, finance, and institutional support (Mead & Liedholm, 1998). Lack of capital and skills and problems in business development are obstacles faced by MSMEs. Internal limitations, including capital shortage, old equipment, and outdated technology, have hindered the development of MSMEs (Swierczek & Ha, 2003).

Even though some MSMEs have declined or stagnated, others have been growing and successful. Here, there is a need to analyse the success factors in the particular region to enhance the success of MSMEs in our area because there are limited studies performed in this region. This study aims to answer this main question: what factors affect business success among MSMEs?

One of the important roles of MSMEs in this context includes poverty alleviation through job creation; therefore, in ensuring economic growth, more attention should be paid to MSMEs development. Increasing business competition, in particular against large and medium competitors, puts MSMEs in a vulnerable position. It has been argued that the main problem for MSMEs in developing countries is not their small size, but their isolation which hinders access to markets and information, finance, and institutional support (Mead & Liedhold, 1998; Swierczek & Ha, 2003). Lack of capital, lack of skills, and problems in business development are the issues faced by MSMEs. International limitations like import threats, including capital shortage, old equipment, and outdated technology, have hindered the development of MSMEs (Swierczek & Ha, 2003).

Most of the previous studies dealing with the conditions of successful business have focused on large companies rather than MSMEs (Ghosh & Kwan, 1996). However, changes in the environment cause more uncertainty in MSMEs than in large companies. Their resources for acquiring information about the market and the course of the enterprise are more limited. There is also considerable variation in the criteria for success used in previous studies. Empirical studies of factors affecting MSME success can be divided into two groups, focusing on quite a set of limited variables or capturing more holistic profiles of successful MSMEs.

Previous empirical research has used both surveys and case studies. There are also some complications of the results of previous studies of the factors contributing to firm success. For this instance, there is a need for further study regarding MSMEs in our region. Even though, as an emerging region after the post-war market, there is a need to carry out the studies relevant to MSMEs. Nowadays, most of the Micro, Small and Medium businesses are starting around the region at the same time; most of them are closed within a year due to a lack of certain aspects. As mentioned in the research problem, it has been taken a gap and by the way to answer this issue literature has reviewed, and study carried out in the particular region. Thus the main objective of the study is to examine the impact of the Factors on the business success of MSMEs in the Jaffna District.

This study is considered significant as to the knowledge of researchers only a handful of studies have attempted to find out in and outside Sri Lanka. This study is expected to provide additional empirical evidence about the relationship between MSME factors and the success of MSMEs in the Nallur and Jaffna Divisional Secretariat. This study is helpful for various parties to fulfill their needs. Also, the findings of the study will give further understanding to the policymakers and organisations about the success factors of MSMEs in the Nallur and Jaffna divisional secretariat.

2. Literature Review

2.1 Definition of Micro Small and Medium Enterprises (MSMEs)

Micro Small and Medium Enterprises, the MSMEs have played key roles in transforming developing countries into developed countries in Asia. Japan achieved that status first in the 60s, followed by South Korea, Taiwan, and Singapore (Vijayakumar, 2013). China, Thailand, and Malaysia would be next (Vijayakumar, 2013). These countries have promising MSMEs that grew and became the additional pillars needed to support a developed country. The MSMEs are indicated as a vital sector to promote economic growth and development in Sri Lanka. There is no standard definition for micro, small and medium enterprises in international practices. The definition varies across countries and different organisations within a country. The term MSME is used to explain micro, small and medium enterprises. Various countries use various kinds of definitions for MSMEs based on different criteria. The commonly applied yardsticks are a total investment, annual turnover, and a total number of employees. In Sri Lanka, the National policy framework explained MSMEs based on the annual turnover and number of employees.

Table 1

Definition of MSMEs by Ministry of Industry and Commerce

Sector	Criteria	Medium	Small	Micro
Manufacturing Sector	Annual Turnover	Rs. Mn. 251-750	Rs.Mn.16-250	Less than Rs. Mn. 15
	Number of Employees	51-300	11-50	Less than 10
Service Sector	Annual Turnover	Rs. Mn. 251-750	Rs.Mn.16-250	Less than Rs. Mn. 15

Number of Employees	51-200	11-50	Less than 10
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Source: Statistical Hand Book, Jaffna District (2020)

The category of MSMEs comprises enterprises that employ less than 300 employees and have an annual turnover not exceeding Rs.750 Mn. MSMEs are described in various ways by countries using such yardsticks, viz, nature of the business, number of persons employed, amount of turnover, or amount of capital invested (Viyajakumar, 2013). Viyajakumar (2013) explained that the number of employees as a criterion is more appropriate because other criteria can be influenced by inflation. In the view of the major differences shown by major economic sectors such as; industry and construction, trade, and services; different criterion was laid out for each of those economic sectors. Furthermore, the yardsticks identified to define the micro, small, medium, and large scale firms for each economic sector are as follows:

Table 2

Definition of MSMEs by Department of Census and Statistic

Category	MSME Groups	Criteria (Number of Persons Engaged)
Industry and Construction	Micro	1 to 4
	Small	5 to 24
	Medium	25 to 199
	Large	200 and above
Trade	Micro	1 to 3
	Small	4 to 14
	Medium	15 to 34
	Large	35 and above
Services	Micro	1 to 4
	Small	5 to 15
	Medium	16 to 74
	Large	75 and above

Source: Statistical Hand Book, Jaffna District (2020).

The MSME sector is indicated as a prominent strategic sector of the Government of Sri Lanka (GOSL), and it is seen as a driver of change for poverty reduction, regional development, inclusive economic growth, and employment generation. MSME sector is predicted to transform lagging regions into emerging regions of prosperity. The development must be complemented by job creation and growth. This sector is said to be the backbone of all developed and developing nations.

2.2 Empirical Association between Factors and Success of MSME

Based on the findings of the earlier research, Storey (1994) identified key components to be important in analysing the growth of SMEs: the characteristics of the entrepreneurs, the characteristics of the SMEs; and the type of strategy associated with growth. Instead of the last component, we explore contextual elements of SME development. Under the contextual variable, there are nine suitable elements identified based on the prior studies. They are Marketing, Technology, Information Access, Entrepreneurial Readiness, Social Network, Legality, Finance, Government Support, and Business Plan. Therefore, Business Success is the dependent variable, and independent variables are Characteristics of entrepreneurs, Characteristics of MSME, and nine more contextual variables.

2.3 Contextual Variables

2.3.1 Marketing

In Sri Lanka, most MSMEs operate along traditional lines in marketing. Stiffer competition in the market should be responded to proactively by SMEs by doing market development. Access to the market was of the problems faced by SMEs (Liedholm & Mead, 1998; Swierczek & Ha, 2003). Market development is, therefore, crucial for preserving high growth in the business. Smallbone et al. (1995), in their study in the UK found that the vast majority of the high growth SMEs had identified and responded to new market opportunities. Newmarket opportunities included finding new products or services to offer existing customers and obtaining new customers for existing products or services. In a slightly different term, market stability (i.e., a high proportion of regular customers) is significant in determining business success (Kristiansen et al., 2003).

2.3.2 Technique and Technology

The SMEs should respond to rapid changes in technology to find alternative ways to sustain their competitive advantage by deploying new processes and new growing methods. Technology may play an important role in this respect. In this context, technology has a close relationship with the improvement of the production process.

2.3.3 Information Access

Availability of business information is similarly important for the intention to initiate a new enterprise. Anand Singh and Krishna (1994), in their studies of entrepreneurship in India, pointed out that eagerness in information seeking is one of the major entrepreneurial characteristics. Information seeking refers to the frequency of contact that an individual makes with various sources of information. The result of this activity is most often dependent on information accessibility, either through individual efforts and human capital or as a part of social capital and networking.

2.3.4 Entrepreneurial Readiness

Entrepreneurial readiness in this study refers to self-efficacy. The term self-efficacy, derived from Bandura's (1977) social learning theory, refers to a person's belief in their capability to perform a given task. The attitude provides the foundation for human motivation (Pajares, 2002) and personal accomplishment: unless people believe that their actions can produce the outcomes they desire, they have little incentive to act or to persevere in the face of adversities (Pajares, 2002). In their study among Norwegian and Indonesian students, Kriatinsen and Indarti (2004) found a significant correlation between self-efficacy and entrepreneurial intention. In their study of Internet cafe entrepreneurs in Sri Lanka, Kristiansen et al. (2003) also found that entrepreneurial readiness was linked significantly to business success.

2.3.5 Social Network

Social networks have an impact on the likelihood of successful entrepreneurial endeavour. The study of entrepreneurship has increasingly reflected the general agreement that entrepreneurs and new companies must engage in networks to survive (Huggins, 2000). A social network consists of a series of formal and informal ties between the central actor and other actors in a circle of acquaintances and represents channels through which entrepreneurs get access to the necessary resources for business start-up, growth, and success (Kristiansen et al., 2003).

2.3.6 Legality

Not many studies have been conducted to examine the direct relationship between legal aspect readiness and business success. Legal aspect in developing countries in Indonesia is probably of hindrances of success among SMEs. In many cases, dealing with legal aspects has forced the SMEs to allocate a significant amount of financial resources due to bribery practices. (Indarti & Langenberg, 2004)

2.3.7 Finance

Finance is obviously one of the typical obstacles to the start-up of new businesses, not least in developing economies with weak credit and venture capital institutions. As mentioned, lack of capital is a problem Indonesian SMEs face (Kementerian KUKM & BPS, 2004). A more recent study among Vietnamese SMEs revealed that internal limitations that hinder SMEs from succeeding are a capital shortage (Swierczek & Ha, 2003). Hence, as mentioned above, capital flexibility is one factor determining business success (Kristiansen et al., 2003).

2.3.8 Government Support

Many governments in the world (e.g., Chaston, 1992; Mulhern, 1996; Patrianila, 2003) have been paying more attention to SME development in order to strengthen the national economy.

2.3.9 Business Plan

Insufficient awareness of the need for a business plan was identified as one problem at the start-up phase among SMEs (Chaston, 1992). In this context, a business plan can also be regarded as development orientation. McMahon (2001) revealed that greater development orientation is significantly linked to better business growth.

3. Methodology

3.1 Population and Study Sample of the Study

The population of the study is all the SMEs that are operating in Nallur and Jaffna Divisional Secretariat (DS). Table 3 shows the distribution of MSMEs in Nallur and Jaffna Peninsula, which is classified based on the type of operation.

Table 3*Micro, Small and Medium Enterprises in Nallur and Jaffna DS.*

Category of MSME	Nallur	Jaffna	Total
Food and Beverage	24	43	67
Wood and Wood Based	69	8	77
Tailoring and Garment	35	18	53
Metal and Aluminium	13	11	24
Leather Based	2	4	6
Paper Based	8	8	16
Cement Based	15	2	17
Beauty Culture	-	14	14
Handi Craft	-	1	1
Light Engineering	-	12	12
Coir Based	5	26	31
Palmyrah Based	12	4	16
Chemical and Based	2	5	7
Rubber and Plastic Based	1	1	2
Services	23	27	50
Pottery	-	-	-
Agro Based (Mushroom)	-	-	-
Total	209	184	393

Source: Statistical Hand Book, Jaffna District (2020).

Table 4 depicts that the distribution of MSMEs in their size of operation in Nallur and Jaffna DS

Table 4
Distribution of MSMEs in their size of operation

Category	Nallur			Jaffna			Total
	Micro	Small	Medium	Micro	Small	Medium	
Food and Beverage	13	7	4	14	16	13	67
Wood and Wood Based	24	32	13	-	5	3	77
Tailoring and Garment	15	12	8	5	8	5	53
Metal and Aluminium	5	6	2	-	7	4	24
Leather Based	-	2	-	-	4	-	6
Paper Based	5	3	-	-	6	2	16
Cement Based	8	5	2	-	2	-	17
Beauty Culture	-	-	-	5	7	2	14
Handi Craft	-	-	-	-	1	-	1
Light Engineering	-	-	-	-	9	3	12
Coir Based	5	-	-	10	12	4	31
Palmyrah Based	7	5	-	4	-	-	16
Chemical and Based	-	2	-	-	5	-	7
Rubber and Plastic Based	-	1	-	-	1	-	2
Services	12	8	3	11	12	4	50
Pottery	-	-	-	-	-	-	-
Agro Based (Mushroom)	-	-	-	-	-	-	-
Total	94	83	32	49	95	40	393

Source: Statistical Hand Book, Jaffna District (2020).

3.2 Respondent of the Study

Sampling can be defined as the deliberate choice of a number of people, the sample, who are to provide data from which the researcher will draw a conclusion about some larger group and the population, whom these people represent (Jankowicz, 2000). The

study adopted a convenient sampling method, and 80 questionnaires were distributed among two DS equally, as the Table 5 shown below.

Table 5

Respondent of the Study in each sector

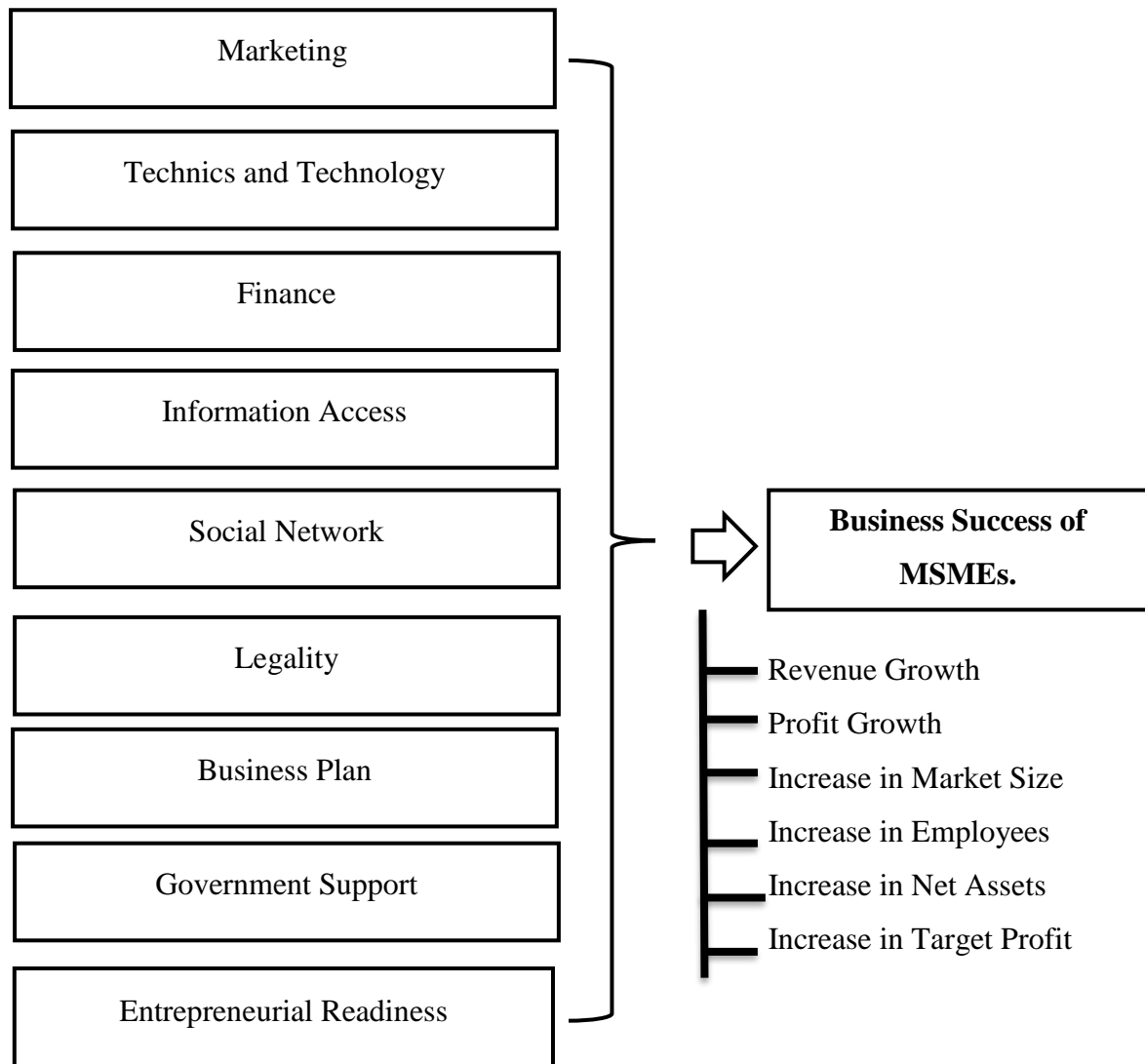
Category	Nallur			Jaffna			Total
	Micro	Small	Medium	Micro	Small	Medium	
Food and Beverage	2	2	1	3	3	3	14
Wood and Wood Based	3	4	3	-	1	1	12
Tailoring and Garment	2	2	2	1	2	1	10
Metal and Aluminium	1	1	1	-	1	1	5
Leather Based	-	1	-	-	1	-	2
Paper Based	1	1	-	-	1	1	4
Cement Based	1	1	1	-	1	-	4
Beauty Culture	-	-	-	1	1	1	3
Handi Craft	-	-	-	-	1	-	1
Light Engineering	-	-	-	-	1	1	2
Coir Based	1	-	-	2	2	1	6
Palmyrah Based	1	1	-	1	-	-	3
Chemical and Based	-	1	-	-	1	-	2
Rubber and Plastic Based	-	1	-	-	1	-	2
Services	2	2	1	2	2	1	10
Pottery	-	-	-	-	-	-	-
Agro Based (Mushroom)	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-
Total	14	17	9	10	19	11	80

3.3 Conceptualisation

The study performed by Storey (1994) on a similar topic in the context of SMEs provides the prime basis for the derivation of the conceptual model of the study.

Figure 1

Conceptualisation of the study



3.4 Operationalisation

Table 6*Operationalisation of variables*

Concept	Variable	Indicator	Measurement
MSMEs Factors	Marketing	Market strategy / Market potential/Demand/Capability/Competition	Questionnaire Q1, Q2, Q3, Q4, Q5,
	Technics and Technology	Existing technology	Questionnaire Q6, Q7, Q8,
	Capital Access	Capital/Leverage/Capital increase/Target profit/Excess inventory/Inventory control/Liquidity/Financial plan	Questionnaire Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17
	Information Access	Market Information/Information about capital sources/Technological information/Government information/ Raw material information	Questionnaire Q18, Q19, Q20, Q21, Q22,
	Social Network	Reliable social network/ Strong network	Questionnaire Q23, Q24
	Legality	Business registration/Rules and regulations	Questionnaire Q25, Q26
	Business Plan	Short term plan/ Interim and long term plan	Questionnaire Q27, Q28, Q29
	Entrepreneurial Readiness	Expansion/Accept change/Problem handling/	Questionnaire Q30, Q31, Q32
	Government Support	Guidance/Government policies/Periodical training/Government subsidy/Government Facility	Questionnaire Q33, Q34, Q35, Q36, Q37
	MSMEs Success	Perceived Success	Income/Profit/Market Size/Number of Employees/Net Assets/Target Profit.

3.5 Model Specification

The following regression model has been formulated for this study to interpret the impact of the multiple independent variables on the dependent variable.

$$BS = \alpha + \beta_1 MKT + \beta_2 TEC + \beta_3 FIN + \beta_4 IA + \beta_5 SN + \beta_6 LEG + \beta_7 BP + \beta_8 ER + \beta_9 GS + \varepsilon$$

MKT	:Marketing
TEC	:Technics and Technology
FIN	:Capital Access
IA	: Information Access
SN	: Social Network
LEG	: Legality
BP	: Business Plan
ER	: Entrepreneurial readiness
GS	: Government Support
BS	: Business Success
ε	: Error
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9$:Model coefficient
α	:Intercept

3.6 Hypotheses of the Study

H₁: There is a significant impact of MSME Factors on MSMEs Success.

H_{1a}: There is a significant impact of Marketing on MSMEs Success.

H_{1b}: There is a significant impact of Technics and Technology on MSMEs Success.

H_{1c}: There is a significant impact of Finance on MSMEs Success.

H_{1d}: There is a significant impact of Information Access on MSMEs Success.

H_{1e}: There is a significant impact of Social Network on MSMEs Success.

H_{1f}: There is a significant impact of Legality on MSMEs Success.

H_{1g}: There is a significant impact of Business Plan on MSMEs Success.

H_{1h}: There is a significant impact of Entrepreneurial Readiness on MSMEs Success.

H_{1i}: There is a significant impact of Government Support on MSMEs Success.

4. Analysis and Discussion

4.1 Results

In this present study, the researchers have analysed the characteristics of an entrepreneur, characteristics of MSMEs, and the factors affecting MSMEs Success. The researchers issued 80 samples using a convenient sampling technic for this study. First, it is divided equally among the DS; further, it is subdivided according to the size and category. Among that, all questionnaires have been responded. The researchers used all s questionnaires without any rejection.

Validity is the extent to which the scores from a measure represent the variable they are intended to. But how do researchers make this judgment? We have already considered one factor that they take into account reliability. Extant literature has been reviewed, and with that knowledge, the researchers identified the factors affecting the micro, small and medium business success. The identified factors have been tested by doing a pilot study. A pilot study has been conducted among the ten entrepreneurs. Based on the pilot study, the factors finalised for the study.

Reliability is defined as the accuracy or precision of a measuring instrument (Kerlinger, 1980). Thus reliability refers to the degree to which a measure is free of variable error. The most common way to assess reliability measurement instruments is to evaluate items' internal consistency on a scale. Internal consistency is the degree of homogeneity among the items that constitute measure that is the degree to which the items are interrelated and measure a single trait or entity. Internal consistency is determined by the statistical examination of the results obtained, typically equated with Cronbach's coefficient alpha. Cronbach's alpha measures the variance over total variance. In this research, Cronbach's alpha is used to determine the reliability of scales and results.

Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made on the characteristics (Malhotra & Kubowicz Malhotra, 2011). Under reliability, one of the conditions to be fulfilled is internal consistency. For that to be satisfied, the set of items developed to measure the construct should be highly correlated with each and every item in the set. Cronbach's alpha is used as a statistical measurement to measure the internal consistency of a set of data. This coefficient varies from 0 -1, and the value 0.7 or less generally indicates unsatisfactory internal consistency reliability.

Table 7*Reliability statistics*

Variable	Question No	No of item	Cronbach's Alpha
Marketing	1-5	5	0.70
Technics and Technology	6-8	3	0.82
Capital Access	9-17	9	0.83
Information Access	18-22	5	0.66
Social Network	23-24	2	0.65
Legality	25-26	2	0.81
Business Plan	27-29	3	0.78
Entrepreneurial Readiness	30-32	3	0.77
Government Support	33-37	5	0.85
Business Success	38-43	6	0.83

Table 8*Descriptive Statistics of Factors affecting MSMEs Success*

	MKT	TEC	FIN	IA	SN	LEG	BP	ER	GS	PS	TEF
N	80	80	80	80	80	80	80	80	80	80	80
Valid											
Mean	3.807	3.966	3.815	3.937	3.887	3.987	3.879	3.862	2.012	3.847	3.684
Std. Deviation	.2975	.3735	.2555	.3300	.5452	.4637	.3759	.4199	.5913	.2124	.1699
Median	3.800	4.000	3.777	4.000	4.000	4.000	4.000	4.000	1.800	3.833	3.665
Mode	0	0	8	0	0	0	0	0	0	3	4
Std. Deviation	7	3	5	8	6	2	4	4	7	7	3

Minimum	3.00	3.33	3.11	3.20	3.00	3.00	3.33	2.67	1.00	3.50	3.36
Maximum	4.60	5.00	4.56	4.80	5.00	5.00	4.67	4.67	5.00	4.17	4.39

4.2 Correlation Analysis

In this study, the researchers used correlation analysis to explain the significant relationship between the independent variable and dependent variables, which express the significant relationship between utilisation of factors affecting MSMEs Success.

Table 9 indicates the direction and strength of the relationship between the variables such as MKT, TEC, CA, IA, SN, LEG, BP, ER, GS, and the dependent variable PS. Further, the identified relationship tested whether significant or not with the probability value.

Accordingly, the MKT correlated positively with PS with the “r” value of 0.232, which is statistically significant at 0.05 level (p values < 0.05). This circumstance clearly shows that MSMEs can increase the PS by strengthening the MKT factor in Nallur and Jaffna DS. Further, the strength of association between MKT and MKT is weak that is considerable. Nurul and Marja (2004) carried out research in Indonesia to suggest the significant positive relationship between marketing and small business success. It supports the results obtained in this study. Furthermore, there is a weak positive relationship between FIN and PS with the “r” value of 0.292, which is also significant ($p = 0.009$) at the 0.1 level. It means MSMEs can significantly increase their success by increasing the capital access in Nallur and Jaffna DS. A more recent study among Vietnamese SMEs revealed that internal limitations that hinder SMEs from succeeding is the finance shortage (Swierczek & Ha, 2003).

Even though TEC is not correlated with PS with the “r” value of -0.047, which is also not statistically significant at the level of 0.05, this scenario indicates that there is a very weak negative relationship between TEC and PS of MSMEs in Nallur and Jaffna DS. This study reveals that PS will not be much have affected by the changes in TEC, which is contradictory with the previous findings. A study in Ireland unearthed that technological posture, automation, and process innovation were significantly linked to firm success. (Gibbons & O’Connor, 2003). However, the results of the current study were not statistically significant as well as the LEG also has a negative very weak

relationship with the r value of 0.009. It is also statistically insignificant with the p value of 0.938, which is above 0.05 significance level.

Table 9

Correlation Analysis

	MKT	TEC	CA	IA	SN	LEG	BP	ER	GS	PS
MKT	1									
TEC	-.119 .292	1								
FIN	.222* .048	-.021 .852	1							
IA	.113 .318	-.010 .928	.282* .011	1						
SN	.130 .250	.261* .019	.197 .080	-.040 .728	1					
LEG	-.008 .940	.132 .245	.319** .004	.210 .062	-.206 .067	1				
BP	.069 .546	-.129 .253	.209 .063	.000 .997	.252* .024	-.045 .691	1			
ER	.015 .894	.132 .244	.219 .051	.156 .166	-.032 .781	.089 .435	.018 .873	1		
GS	.094 .405	-.040 .724	.125 .268	-.050 .657	.279* .012	.079 .486	.068 .551	-.275* .014	1	
PS	.232* .039	-.047 .679	.292** .009	.133 .238	.005 .963	-.009 .938	.093 .413	.102 .370	.009 .940	1

Source: SPSS Survey Output.

* $p < 0.1$ significance level

** $p < 0.05$ significance level

Furthermore, the p value of IA and PS indicates that there is an insignificant association exists between those two variables ($p=0.238$) as it is higher than 0.05. The “r” value explains that there is a very weak positive association exists between those variables ($r=0.133$). It means, if the IA increases, PS will be increased slightly. The results are in line with Stein (2003), as the availability of information is positively dependent on the survival and growth of the firm. In addition to that, the SN has a very weak positive

relationship ($r=0.005$) with PS, where the p value of 0.963 is insignificant at the 0.05 level, and the BP also indicating the insignificant ($p = 0.413$) very weak positive correlation with PS ($r = 0.093$). ER is correlated positively with PS with the “ r ” value of 0.102, which is statistically insignificant at 0.05 level (p values < 0.05). GS also possesses a very weak positive relationship even though, which is also insignificant ($p = 0.940$) at 0.05 level. This circumstance clearly shows that MSMEs in Nallur and Jaffna DS can increase the PS by raising IA, SN, BP, ER, and GS, whereas the relationship is insignificant at a 5 percent level

4.3 Impact of MSMEs Factors on Business Success

In the Table 11, the significant values of MKT (0.209), TEC (0.848), IA (0.731), SN (0.500), LEG (0.381), BP (0.772), ER (0.845) and GS (0.922) are indicating the insignificant impact on PS. Only the FIN with the p value of 0.048 has an impact on PS in Nallur and Jaffna DS. The R^2 value is 0.140. In the ANOVA test, F value is 1.261 and p value is 0.273. which means the Factors of MSMEs only have a 14% impact on perceived success at Nallur, Jaffna DS. division.

Finally, the researchers have identified the overall significant relationship between the independent variable and dependent variable. Based on that, the significant value is 0.027. It is a bear significant value of less than 0.05, which means there is a significant relationship between the factors affecting MSMEs success and Perceived success.

At last, the researchers formulated the following equation with constant results appeared in the B value; Basic equation,

$$y = a + bx \quad y = \alpha_0 + \beta_1 x$$

$$PS = \alpha_0 + \beta_1 (MKT) + \beta_2 (TEC) + \beta_3 (FIN) + \beta_4 (IA) + \beta_5 (SN) + \beta_6 (LEG) + \beta_7 (BP) + \beta_8 (ER) + \beta_9 (GS) + \varepsilon$$

Apply the “B” value in the equation will be,

Model I

$$PS = 2.509 + 0.121 * MKT + 0.015 * TEC + 0.237 * FIN + 0.030 * IA - 0.053 * SN - 0.070 * LEG + 0.023 * BP + 0.013 * ER + 0.39 * GS + e$$

Table 10*Results of the regression model summary*

R value	.374
R ²	.140

Table 11*Regression Output*

Model	Unstandardised Coefficients		Standardised	t	Sig.
	B	Std. Error	Coefficients		
(Constant)	2.509	.598		4.195	.000
MKT	.121	.095	.170	1.269	.209
TEC	.015	.080	.027	.193	.848
FIN	.237	.123	.285	1.927	.048
IA	.030	.086	.046	.345	.731
SN	-.053	.079	-.137	-.678	.500
LEG	-.070	.079	-.153	-.881	.381
BP	.023	.079	.041	.290	.772
ER	.013	.065	.025	.196	.845
GS	.039	.400	.031	.098	.922

Table 12*Results of the regression Anova*

F value	1.261
P value	0.027

Table 13*Collinearity Statistics*

		Tolerance	VIF		
Table 14 <i>Summary</i> <i>Hypotheses</i>	MKT	.688	1.454	<i>of</i>	<i>the</i> <i>Tested</i>
	TEC	.628	1.593		
	FIN	.562	1.781		
	IA	.695	1.439		
	SN	.301	3.317		
	LEG	.410	2.439		
	BP	.626	1.598		
	ER	.748	1.337		

No.	Hypotheses	Results	Tool
H ₁	There is a significant impact of MSMEs Factors on Perceived Success in Nallur and Jaffna DS	Rejected	Regression
H _{1a}	There is a significant impact of MKT on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1b}	There is a significant impact of TEC on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1c}	There is a significant impact of FIN on PS in Nallur and Jaffna DS	Accepted	Regression
H _{1d}	There is a significant impact of IA on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1e}	There is a significant impact of SN on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1f}	There is a significant impact of LEG on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1g}	There is a significant impact of BP on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1h}	There is a significant impact of ER on PS in Nallur and Jaffna DS	Rejected	Regression
H _{1i}	There is a significant impact of GS on PS in Nallur and Jaffna DS.	Rejected	Regression

5. Conclusion and Implications and Future Research

Knowledge of factors affecting MSMEs is important for all entrepreneurs. The results of this study can be used as a reference for anyone interested in starting their own business, especially in Nallur and Jaffna DS, which will provide insights to decision-making in starting a business and any MSMEs which are intended to continue to sustain and grow. Globally, several research has been carried out in terms of MSMEs, but contradictory results have been reported regarding the determining factors of perceived success. Furthermore, there are only a few studies carried out in the context of Sri Lanka and particularly in Jaffna. Therefore this study contributes to the extant knowledge by bridging the above mentioned gap by means of analysing the impact of MSME factors on perceived success. It will contribute to the policymakers, and the organisations

focused on developing the MSMEs in Sri Lanka. Industrial Development Board, SME Branch at Jaffna and Nallur DS, and Jaffna District Secretariat can use these findings to promote MSMEs in a vulnerable position.

The study was conducted in selected MSMEs in Nallur and Jaffna DS. Thus, the sample size is small. In addition, 80 despondences are used to analyse the findings. It may not be generalisable. The sample size can be increased to generalise these findings. The study is mainly conducted with the objective of identifying the impact of MSME factors on MSME success; however, a significant association is not recorded among the two variables. This is mainly due to relying on a small sample constrained under different criteria. Future research should conduct comprehensive research with a more precise and wider population and sample, enabling a more thorough discussion that would increase the generalisability of findings. In reviewing the results of the study, it was identified that large variations are identified among the MSMEs located in Nallur and Jaffna DS. However, the identified independent variables in the study depicted a less explanatory power in predicting the association with perceived success. Thus this creates an avenue for future research to identify what factors apart from factors discussed in the research study are more influential towards perceived success in Sri Lanka.

Small and medium enterprises have been believed as very important in accelerating the economic development of a country. That is why its role is becoming increasingly prominent throughout the world. This study examines the factors which are exclusively contributing to their role in the success of small and medium enterprises. This study also measures the relationship between MSMEs success and its determinants. This research finds that financial resources and marketing are the most important factors that affect the MSMEs success. Financial resources are the key factor upon which the whole business is depending upon. Due to less Government financial support to entrepreneurs, they are facing a lot of problems. Due to less financial resources, entrepreneurs are not happy with the marketing activities of their products. First of all, this is because MSMEs have very small capital compared to corporate sectors. Secondly, MSMEs have to do good marketing then only they can survive in the market among the huge competition. There are some of the recommendations based on the findings of the study.

The government should play a vital role by giving them a favorable environment and creating favorable policies that lead to the success of entrepreneurship, i.e., easiness to get a business permit, funding scheme from the government. Due to technological change, the world environment is rapidly changing, so businesses and manufacturers should be more innovative and creative in delivering products and services. Entrepreneurs should adopt new technology systems in their business. Government should start a training programme, especially for small entrepreneurs, as it is also necessary to enhance the skills of MSME entrepreneurs.

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INTEGRATING CONCEPTS IN EDUCATION LEADING TO SOCIAL MOBILITY: PROPOSITIONS FOR FUTURE RESEARCH

Wickramasuriya, P.

Faculty of Graduate Studies, University of Colombo

wickramasuriyap@yahoo.com

Abstract

Education is much more than teaching and learning; it encompasses access to education, quality of education, equity of education, and lifelong learning. One of the primary goals of education is social mobility. The purpose of this paper is to review how literature contributes to understanding the impact education has on social mobility by conducting a theoretical and empirical literature survey. Based on the reviewed literature, theory-informed propositions are presented, which would guide further examination of these connections. The propositions are centred on the premise that education strongly influences social mobility while integrating access, quality, equity, and lifelong learning. Therefore the propositions were developed relating these integrating concepts with social mobility. An overview is presented on the related theoretical perspectives. More than 30 research articles on social mobility and education were reviewed, which revealed that access to education, quality of education, education equity, and lifelong learning are vital in affecting social mobility. Propositions were derived based on these findings. When considering all these propositions together, it provides a strong framework for future research to be carried out on education and social mobility and provides a foundation to gain an in-depth knowledge and understanding of social mobility.

Keywords. Social mobility, Education, Access to education, Quality of education, equity of education, Lifelong learning

1. Introduction

According to Muller (2001), social mobility is the movement in time of social units of individuals between different positions in the social stratification system in the society. Social mobility is a concept that is often linked with income or earnings, but it can be easily related to education, occupation, or health as well (Gray, 1982; Goldthorpe, 2013). Movement in personal circumstances in an upward or downward direction is a pressing issue of modern life. Social mobility is often considered a key indicator of the success of policy actions and business practices of a country and its economy. World Economic Forum (2020) indicates that economies with higher social mobility provide many equal and meritocratic opportunities, irrespective of the socio-economic background, gender, or geographic location of a person. Social mobility has a direct and linear relationship with a country's income distribution according to the 'Great Gatsby Curve' (Corak, 2013). Lower social mobility further enhances income inequalities, and higher income inequality leads to lower social mobility creating a vicious cycle. In order to convert this cycle into a virtuous one, enhancing social mobility is a must to get positive benefits.

The purpose of this article is to present a theory based set of propositions that guide future research to systematically examine these propositions. The propositions are based on the premise that social mobility is strongly influenced by education, more precisely its access to education, quality of education, equity in education, and lifelong learning. The structure of this paper is as follows. The first section synthesises theoretical and empirical research on the relationship between social mobility and education. Review and synthesis of literature would manifest the notion that social mobility is a concept that can influence and can be influenced by education. The propositions derived are present in the second section. A key theme among the propositions is education; access to education, quality of education, equity of education, and lifelong learning. The last section comprehends the discussion, conclusion, and the implications of identifying education as a key factor influencing social mobility.

1.1 Defining Social Mobility

According to Aldridge (2001), social mobility is defined as either moving or having the opportunity to move between different social classes or occupational groups. This broad

definition places social mobility upon the possibility of an individual to move between different social strata or between various levels of occupation. As a multi-faceted concept, mobility can be intergenerational or intra-generational. According to Chetty et al. (2014), intergenerational mobility indicates to which extent a child's social and economic opportunities depend upon his parents' income or social status. According to Organisation for Economic Co-operation and Development (OECD, 2018), intra-generational mobility is the extent to which a person's social or economic status changes over their life span. Both intergenerational and intra-generational mobility can be measured in absolute or relative terms.

Social mobility can be measured as a relative concept where one compares the outcomes of students of low income families with the outcomes of students coming from high income families. This concept indicates the relative mobility outcomes of the students coming from different parental backgrounds, which has been used in the early research on social mobility. In comparison, 'absolute mobility' gives a better way of measuring intergenerational mobility as it indicates the outcomes of children from families of a given income level in absolute terms. According to Chetty et al. (2014), absolute mobility can be of greater normative interest compared with relative mobility. Causes of absolute mobility are large scale social changes such as shifts in the industrial and occupational structures (Nunn et al., 2007).

Relative mobility is the approach taken by many social mobility researchers (Goldthorpe, 2016) as it indicates the movement between different social classes, with or without changes in absolute mobility. Therefore it can be concluded that absolute mobility happens due to societal changes and relative mobility is mainly due to individual changes. Education attainment has been identified as a key contributor to social mobility which is considered a central issue in political, economic, and sociological debate (Moses et al., 2017). There is a strong belief that participation in higher education can facilitate social mobility Christie (2016), but this view is changing fast. According to Goldthorpe (2016), although it is believed that educational policy is fundamental to promoting mobility, even with continuous education expansion initiatives, relative mobility rates show long term stability. This means that despite the stability of the total mobility rates, upward mobility indicates a decreasing trend, while

downward mobility indicates an increasing trend. But this mobility pattern is not common for all the countries globally; according to the OECD (2018) report on social mobility, recent times have shown complex patterns relevant to social mobility. According to The Asia Foundation (2015), social mobility is a widely researched area in Western countries, but in the Asian region, the number of studies on mobility is very few. The number of research work further decreases in the Sri Lankan context.

The impact of education on social mobility has been established by researchers (Breen & Jonsson, 2005; Gunawardena, 1993; Mazumder, 2018). Education has provided many opportunities to young people in Sri Lanka to be socially mobile and get into positions within the dominant authority system (Gunawardena, 1993). Sri Lankan parents encourage their children to educate as they believe that education is a primary social mobility avenue (Samarakoon et al., 2016). This belief creates a high competition for utilising opportunities in education because the egalitarian effect of education creates more equitable re-distribution of income and leads to cultural well-being (Gunawardena, 1993).

1.2 Research Problem

Sri Lanka has introduced “Free Education” to ensure the opportunity of education for all, which helps to acquire skills required for the social positions they prefer; by reducing the influence of other factors like social status and political influence. Expansion of educational opportunities has been an essential issue in the agenda plan of all the political parties that governed Sri Lanka after gaining freedom from British Rule in 1948.

Many Sri Lankan parents and students believe that education is the only way to improve life standards (Samarakoon et al., 2016). Due to the changes made to education policy, the number of students entering the education pathway has increased. There is an increasing trend in continuing their journey into higher education. This behaviour is based on the entrenched belief that there is a strong relationship between education and social mobility (Hettige & Mayer, 2008). Even though many students enter the education path annually, most do not reach their expectations regarding social mobility (Mallawarachchi & Peiris, 2020). The reason may be that there is more to social

mobility than just acquiring education. According to Samarakoon et al. (2016), deterioration of the quality of education and mismatch of education received and skills required by the job market can cause unemployment and underemployment among educated youth.

This article attempts to investigate and capture the dimensions in education which may create a barrier for students to move up in society, even though they complete educational requirements. Suppose this problem is not paid attention to and investigated immediately; this can lead these educated students to be unemployed and fail to achieve their future goals. This condition may create dissatisfaction and unemployment or under employment. They can be a burden on the government, and most importantly, the due contribution expected from these young people for the development of the country may not be gained.

Students with the same qualification studying the same subjects show wide disparities relevant to career and social mobility achievements. Researchers have used Bourdieu's theory of reproduction to provide a valid explanation for these disparities. The theory of reproduction explains the persistent inequalities in educational stratification despite the efforts taken by the governments to expand the opportunities for education (Tzanakis, 2011). Public education is considered and accepted as a meritocratic institution where the talent and effort of students are the sole predictors of outcome. However, Coleman (1967), has a contradictory view on this. Reproductions point out that schools do not promote equality of opportunity as per popular belief. Instead, they support the reproduction of inequalities persisting in society. Research indicates a relationship between inequalities in academic achievement and the social classes, which is the basis of social reproduction (Gordon, 1984; Jonsson, 1993; Marjoribanks, 1998).

In Sri Lanka, the governments which came into power since independence shared a common vision in creating equality of educational opportunities for all the children in the country. This system has been further supported by providing free education, textbooks, uniform materials, free meals, and special transport services and making school education compulsory up to the age of fourteen (14). There is evidence that even after all these reforms, the association between class origins and educational attainment

has not been diminished (Ranasinghe & Hartog, 2002). Even with many remarkable achievements, Sri Lanka's education system faces several challenges (Samarakoon et al., 2016). A few of them are a mismatch of education received and skills required in the labour market leading to youth unemployment, unplanned policy changes, and lack of infrastructure. One of the main reasons for these issues is looking at education without understanding the integrating concepts. This article examines integrating concepts that constitute education to understand better why some students fail to reach social mobility through education, even though educational opportunities have been expanded. Then to develop propositions based on these concepts, which would guide future research on education and social mobility.

2. Literature Review

Education, especially higher education, is considered the main force that promotes equality in society. Equality is the creation of a society based on the principles of equality of opportunities in gaining organisational and social positions. Education is seen as a solution to creating skilled people who can deliver expected outcomes in the organisation and society. This led to the belief that education is capable of delivering economic and social goods (Themelis, 2017), which was popular in Western European countries and later among other countries. Meritocracy through education has been a topic that has led to a debate ever since.

2.1 Meritocracy

Meritocracy has received attention due to its social and political significance in modern societies in promoting fairness (Themelis, 2017). Especially in the last sixty years, meritocracy has gained momentum and acquired political significance as a concept. Many researchers have defined meritocracy, and the common understanding is the use of intelligence and effort to place individuals in different positions of the society, 'merit = intelligence + effort' (Saunders, 1996; Young, 1958). Meritocracy is an ideology related to social justice founded on the notions of equality of opportunity (Jin & Stephen, 2019).

Meritocratic rhetoric is commonly seen in many countries. Neo-liberalism recognises meritocracy as a key feature of current education policy. According to Jin and Stephen

(2019), merit is not considered an inherent personal quality but a set of socially produced capabilities underpinned by different types of capitals. It assures that wealthy social groups with heritage, cultural knowledge, and social relations are capable of responding to available educational opportunities to assert or reproduce social and economic advantage. Meritocracy creates an illusion of social justice, which makes recognising social inequality difficult. The viewpoints regarding meritocracy clearly show a dichotomy among researchers. Saunders (1996) argues that educational meritocracy is present in society, and it contributes to narrow down the gaps that exist among different social classes. Breen and Goldthorpe (1999) disagree that although merit plays a vital role in determining the class destinations of the individuals, the impact of class origin remains strong. When gaining class positions in society, children of parents from less advantaged class origins need higher merit than children from advantaged class origins.

There had been an expansion of higher education facilities throughout the world. Providing more educational opportunities will lead to narrowing gaps among the social groups while fostering social mobility. The common assumption is that student selection is based on competition in intellectual ability but not on social origin. Expanding the educational opportunities seems insufficient to keep the students in school or ensure that they reach higher education since family background influences education decisions (Ranasinghe & Hartog, 2002). Reasons for these voluntary dropouts can be poverty (Hettige & Mayer, 2008); or environmental factors of the school (Perera, 2012).

Completion of education successfully at the school level or university level does not guarantee employment. Even with the constant expansion of educated young people into the workforce, employers claim shortages of skilled labour (Ariyawansa, 2008). This is reflected in the increasing unemployment rates in Sri Lanka (Mallawarachchi & Peiris, 2020; Nanayakkara, 2004). This situation creates a barrier for the youth to reach their social mobility goals. The reasons commonly identified are socio-economic factors, mismatch of skills, and discriminatory practices (Mallawarachchi & Peiris, 2020); lack of professional orientation (Ariyawansa, 2008); lack of soft skills and professional qualifications (Chandrakumara, 2014); poor proficiency in English, lack

of soft skills, attitudinal deficiencies and tendency to seek government jobs (Asian Development Bank, 2016).

2.2 Education and Equality

Education plays a key role in promoting equality in society (Themelis, 2017). The question is whether education can still create social equality and mobility in modern social systems that have adopted a liberal or neoliberal system. Education is expected to produce highly skilled people and allocate a fair number of them into positions in the labour market. Social equality is a concept that is related to social and cultural reproduction. Bourdieu (1996) indicates that the formal education system perpetuates socio-economic inequality as it transforms the existing social hierarchy into a hierarchy of merit. This indication is contrary to the common belief that education creates equality by providing better opportunities to socially disadvantaged classes. Educational institutions support social inequalities due to variations in students' linguistic and cultural competence and differing levels of familiarity with the dominant cultural capital. Brooks (2008) discussed, as quoted by Hassan et al. (2019) that schools play a role in reproducing social classes and unbalancing society. According to Perera (2012), this happens due to poor school quality and poor classroom processes increasing school dropouts. These dropouts find it difficult to gain employment, and youth unemployment can lead to many socio-economic issues.

An unequal education outcome usually is accounted for by the differences in the individual's intelligence and effort. In that way, Bourdieu (1996) came with another viewpoint; the values of the educational organisations are usually aligned with the home situation of dominant classes. This escalates the incongruity seen within educational institutions as they cite and provide a capable environment for students with a higher level of cultural capital. This situation leads to educational inequality, which is not seen as discriminatory by society. As a result, students coming from lower social classes with weak cultural capital will not gain a similar level of educational achievement as Sullivan (2002) also pointed out. However, the lower-class pupils are seriously disadvantaged in the competition for academic credentials; the results of this competition are seen as meritocratic and therefore legitimate. Further, it is mentioned

that some lower-class students will get successful academic outcomes, which is considered to strengthen the appearance of meritocracy rather than challenge it.

Saunders (1996) argues that ability is more influential than formal qualifications in occupational placement. Students with a higher level of power tend to perform better in tests and continue to perform better after entering the labour market. Here, society becomes meritocratic because the transmission of advantages and disadvantages between generations is declining compared to the past. If an individual is able and motivated, ascriptive barriers will not impede their movement from a lower class position into a higher position. As Themelis (2017) argues, the social class destination of an individual can be justified, provided they have reached that destination due to the ability and motivation they possess. The focus here is a fair system that influences the allocation of social position but not on the reproduction of social classes. In this perspective, if a person manages to secure an occupation due to the influence of their parents and thus stipulate reproduction of class advantages, it would be less significant. This is valid as long as the individual who secures the position has the highest level of ability among other competitors.

Justification of social class reproduction is seen when the middle class manages to secure positions in the same class because their offspring possess ability and motivation similar to their parents. On the contrary, the lower classes lack the ability and motivation, which retain them at the same levels without advancement. Few lower-class children with a high level of ability and motivation can reach middle-class positions and show upward mobility (Gunathilaka et al., 2009). Therefore the educational advantage that higher-class parents pass on to their children may not be entirely driven by economic factors. The notion of cultural capital is consequently worthy of serious attention (Sullivan, 2002). Bourdieu (1996) claims that the criteria applied by university examiners reflect the values of dominant classes; when the demands of the examiners are vague, lower-class students are at a disadvantage adhering to them.

2.3 Determinants of intergenerational social mobility

Intergenerational social mobility can be defined as the relationship between the parent's socio-economic status and the status attained by their children as adults (Causa et al.,

2009). Income, education, occupation, and social class can be used for measuring intergenerational mobility. Since income mobility is considered as a way of measuring mobility, it is suggested by Lee and Solon (2009) that considering the household's disposable income is more effective than assessing the association between parents and children's income. Accurate measurements of a household's disposable income can be difficult as it includes many different forms of income sources depending on the income structure of the household. Most of the researches on mobility use some measure of wages as a measurement of mobility.

When considering the academic success and occupational success, individual characteristics and dispositions play a critical role. Individual attributes such as sex, ability, race, ethnicity, expectations, and motivation level, affect the performance of students (Tinto, 1975). Getting involved in and integrating with the school's activities is found to promote a higher level of student aspirations and persistence among the students (Tinto, 1987; Walpole, 1998). Time spent working with the faculty, time spent in student clubs and groups and time spent working for pay can impact the academic success (Walpole, 1998).

There is research evidence to indicate a significant and positive relationship between the socio-economic background of the parents and the educational and wage outcomes their children (Causa & Johansson, 2009). The socio-economic status of the parent includes both the educational level of the parents and their income. Labour productivity of a person is determined by the investments made on developing their human capital, which is greatly supported by the socio-economic status of the parents. Success in the labour market is influenced by ethical behaviour and having access to social networks that may earn them a secure place in the labour market with ease. Measuring the intergenerational transmission of social status is done using the 'wage or income persistence' (Causa & Johansson, 2009). Across European countries, a substantial wage premium is observed when growing up in a highly educated family when compared with a child growing up in a less educated family. This difference is observed to be more pertinent among male children than female children.

According to Tinto (1975), the parent's social status, high school experience, and community of residence affect the academic performance. Students from lower socio-economic backgrounds have lower aspirations about their higher education, persistence rates, and educational achievement than those from higher socio-economic backgrounds (Di Maggio & Mohr, 1985; Walpole, 1998). These differences get initiated at a young age due to parental interaction styles and expectations, school experiences, and expectations.

The environment that exists within a higher education institute has a greater impact on the students. Besides knowledge and skills, many other benefits are accrued through this environment, such as developing contacts. This environment molds the character of a student. It inculcates positive attitudes by providing a safe environment to explore new ideas and interests, interact with others who are different, and most importantly, form their identity (Brock, 2010). In this light education, institutes play an indispensable role in fostering the intellectual and personal growth of young adults and prepare them to be productive citizens. The quality and frequency of interactions between students, academic faculty, and non-academic staff of the schools affects how these new students will fit into the institution. Cultural norms persisting in the schools and organisational structures and processes also affect student's performance.

Establishing learning community groups is an effective way of supporting students to get integrated into school's environment and be more engaged in their academic activities with fellow students and faculty (Brock, 2010). According to Tinto (1975), for an undergraduate to be successful, they need to integrate into the social system prevailing in the schools and the academic domain. Failing in even one aspect can lead to low commitment and poor academic performance, increasing the probability of students leaving the school and pursuing alternative activities. Providing counselling or advisory services to students who need guidance to decide which courses to select, apply for financial aid, and what resources are available for the students may help them progress in their studies. Many schools organise orientation programmes for the new entrants, where they answer most of these questions. Appointing student counsellors or mentors to reach when students need to resolve personal or academic problems as they progress is another mechanism to support students to perform well academically.

Introducing scholarships or financial aid schemes for low-income students to continue their higher education is another mechanism for encouraging them to complete their studies.

Bowles and Gintis (2002) have identified that students with a higher socio-economic background have a higher income and a higher overall socio-economic status compared with students from low socio-economic backgrounds. However, there had been contradictory findings made by Jencks et al. (1983). Recent research confirms that students coming from low socio-economic backgrounds not only have lower levels of income but have lower educational aspirations and educational attainment as well (Walpole, 1998).

2.4 Propositions

The following section presents the propositions that reflect education-based interpretation to explain social mobility.

Proposition 1: Having access to education goes beyond getting through the school's gate into meaningful and enabling access.

According to Lewin (2015), access to education means the completion of a complete cycle of primary and lower secondary schooling. It is understood that this concept goes beyond the physical access of the school or getting the students through the school gates. Although there are high enrolment rates, these numbers drop, and students leave school due to numerous reasons like extreme poverty, disabilities, early marriage, or bullying (Perera, 2012). Therefore access should be given a broad meaning like 'ability to participate' (Weligamage, 2009). Meaningful access is not there if the child does not get a proper meal when going to school or if the teachers do not arrive on time to teach. Therefore access can be conceptualised with numerous dimensions; 'basic access' and 'enabling access'. Basic access includes school adhering to contractual regulations and ensuring the continuous attendance of students. Enabling access consists of the basic resources that are required for learning like classrooms, teachers, and protecting the students from social ills and burdens. 'Education for all' policy initiated in 1990 with the World Education Conference held in Thailand has been a target that is yet to be

achieved by the global education community. According to Little (2012), Sri Lanka's educational participation achievements exemplify other countries.

Access to educational opportunities has been expanding in Sri Lanka with the policy decisions taken in 1938 to introduce free education. Although many students have access to education, all the students do not gain the full benefits as the success rate relevant to persistence and completion has decreased (Perera, 2012). Students 'dropout' before completing compulsory education keeps increasing (United Nations Children's Fund [UNICEF], 2013). The main reason for dropout is the poverty of parents, which keeps students out of school and makes them involved in income-generating activities. Dropouts among university students occur due to accommodation issues, food & nutrition, medium of instructions, and financial issues (Perera, 2013). Probing into these reasons indicates that the root cause is related to finances. Initiating special programmes to integrate the skills acquired into college-level careers or technical training underpins the career performance of these students (Brock, 2010). Participants of these 'remedial' programmes had higher persistence rates, performed well academically earning more credits, done well earning occupational certificates, and performed well in remedial education tests.

Proposition 2: Quality of the education received is the decisive factor in supporting social mobility.

Rapid expansions of the opportunities to have access to education are seen throughout the world and in Sri Lanka due to policy decisions taken by the governments. Still, these changes have failed to produce anticipated labour market outcomes, instead, the patterns of poverty and inequality seem to be perpetuating (Moses et al., 2017). The differences in education quality can be identified as a root cause of income inequality which then causes social inequality and poor social mobility. According to Akareem and Hossain (2016), ensuring good quality education is critical for society's interest. Hence this responsibility should be shared by both the authorities who make policy decisions and implement the policies on education. Students in low socio-economic levels choose low-quality education institutes because elite institutes that provide high-quality education are not affordable.

Quality of education depends upon faculty credentials, an improved curriculum, strong student assessment schemes, parental involvement, quality of students, administrative support, facilities available, and reputation of the institute (Akareem & Hossain, 2016; British Council, 2019; Moses et al., 2017; Ushantha & Kumara, 2016). The majority of the students who complete their education from an institute with poor quality, end up with weak cognitive skills, which is a barrier for them to obtain employment with high income; instead, they are employed in manual or low skilled jobs with minimum wages. This confirms that social mobility, poverty, and income distribution are closely linked with education quality.

Little (2012) mentioned that a reduction in education resource allocation in the 1990s had caused a decline in the quality of education in Sri Lanka. By the mid-1990s government has taken policy-level initiatives to improve the quality of education.

Proposition 3: Commensurate focus on equity and inclusion is critical for the education to provide expected social mobility

To ensure equity in education is important to provide everyone with an opportunity to develop and master essential knowledge and skills for them to reach their goals in life. Although equity in education is conceptually less defined in the literature, it appears more frequently in policy documents. Education equity is the right to education shared by everyone, which offers them equal opportunity to succeed by working hard (Guo et al., 2019). Even with numerous efforts taken by countries around the world in the form of policy decisions and regulations, it is impossible to see everyone enjoying equitable opportunities for education. The reasons identified are gender, race, or socio-economic status (Guo et al., 2019); poverty (Lewin, 2015); social barriers, perceived identities (Moses et al., 2017). Rather than the gender itself, gender attitude has a greater influence on educational equity.

Traditional gender attitudes support the notion that there are separate and innate responsibilities assigned for men and women in the labour market and the family. Egalitarian attitudes have a contrasting view, saying that men and women have equal abilities and share responsibilities at work and home (Luke, 2019). Gender attitude is applicable at the individual level, and gender norms are applicable within a community.

It is clear that to ensure equity in education, the availability of schools or facilities is insufficient. Even though the accessibility of education is there, perceptions like gender or racial identity may prevent a student from getting a fair opportunity in education. Sri Lanka needs to address equity in education and inclusiveness to provide opportunities for the underserved segments of society (Asian Development Bank, 2016). Even if there is no evidence confirming the contention that minority ethnic groups are discriminated against when getting higher education opportunities, low-income groups are at a disadvantage (United Nations Development Programme [UNDP], 2012).

To overcome this condition and motivate students to reach their life goals, educators need to re-examine organisational practices like selecting students for different study courses and make suitable changes. State universities in Sri Lanka solicit a combination of merit and quota for student selection in order to enforce equity (Asian Development Bank, 2016). Many other equity oriented education policies have been implemented by the Sri Lankan government to facilitate education for all (UNICEF, 2013). These operational changes would support preventing the perpetuation of disparities observed among students and establish true equity in education.

Proposition 4: Lifelong learning: a call for stakeholder capitalism

Lifelong learning has emerged as a priority for improving social mobility by the World Economic Forum in Global Social Mobility Index 2020. The need for lifelong learning has been identified as a new agenda for promoting skills development throughout the working life. The UNESCO has defined lifelong learning as something rooted in the integration of learning and living, covering learning activities for people of all ages, in all life-wide contexts, and through a variety of modalities, which together meet a wide range of learning needs and demands. In fact, lifelong learning ensures learning opportunities for all individuals, which creates a fundamental transformation of society.

Today's individuals are bombarded with vast amounts of information that cannot be retained by any individual. New knowledge is being added at a fast pace in this knowledge era; knowledge gets outdated at the same speed. According to Ehlers and Schneckenberg (2010), the future of learning is taking place now, but still, universities are transmitting knowledge rather than constructing solutions. The old approaches to

teaching and learning are being used to educate tomorrow's managers, who would leave the university with outdated knowledge highly insufficient to face future situations. To face the problem, it is clear that the universities need to change, and the students themselves should be ready to become lifelong learners to keep their knowledge up to date and fulfil the knowledge gaps that will be created in the future.

Lifelong learning has received greater acceptance since it offers every individual diverse learning opportunities throughout their lifetime (Jacinto & Fanelli, 2006). Continuous learning throughout life, which goes beyond the traditional methods of education, open new opportunities for adults who did not receive any formal education or joined the path of teaching at a later stage. Lifelong learning enables individuals with the ability to face new challenges and environmental changes and become active social agents. In order to make meaningful lifelong learning, an equivalency framework for assessing knowledge and competencies must be established, which helps to formalise and integrate with the national qualification framework.

3. Methodology

A theoretical and empirical literature review was conducted on research articles published in the areas of social mobility, access to education, quality of education, equity in education, and lifelong learning. These articles were searched and reviewed from the Google Scholar database published recently and found to be relevant for this study. The following keywords were used for the search; social mobility, access to education, quality of education, equity of education, and lifelong learning. By reviewing all the research articles, an overview of the research area was captured, then the most prominent and relevant work was presented with the intention of further elaboration of the research topic. By outlining the propositions and explaining them in the international context, this work presents a comprehensive view of the relationship between social mobility and education.

4. Discussion

The propositions presented in this paper suggest that further ramification of education is required to understand the relationship between social mobility and education more accurately. In the literature, the impact of education on social mobility has been widely

explored. Still, these researchers fail to adequately explain the disparities in educational achievements observed even after the nationwide expansions have been implemented. Reforms like free education and compulsory education have been made throughout Sri Lanka, even though they have not delivered the expected level of social mobility for all the students to move up in society.

The four propositions are highly suggestive of an interpretive approach as they compel the researcher to move beyond and look into the subdivisions of education. Access to education need to be seen as more than physical access but being able to complete their education cycle and fulfil the expectations of the students. Certain behavioural practices of the educational institutes may act as a discouragement for a student to pursue their education according to their wishes. An example is a teacher saying, “teaching is the best profession for a female” or “boys are good in mathematics”. These statements will develop perceptions in students’ minds, which would discourage them from reaching their goals in social mobility.

The second proposition is based on the quality of education, which has been the focus of many educators and policymakers. Rapid expansions and privatisation of education has created a concern about the quality of education. According to Cheng and Tam (1997), policies on educational reforms often may compromise quality due to a lack of comprehensive understanding of the complex nature of education quality in schools or higher educational institutes and lack of a system of education standards and monitoring. Another reason for compromising quality can be the commodification of education resulting from privatisation of education. Sappey (2005) stated the commodification has caused the title of ‘student’ to be redefined as ‘customer’, which indicates thinking based upon the managerial perception of the ‘wants’ and ‘needs’ of the customer. Students and parents of these private education institutes can be demanding, which may transform the pedagogical relationship between teacher-student into a contractual relationship as the students who pay a fee to obtain their education expect value for their investment. Since the private education institutes consider profits as one of the main objectives, areas like ethics, discipline, overall quality or standards may be given a lesser priority. The ‘needs’ identified by the educators are overtaken by the ‘wants’ of the learners in postmodern learning (Sappey, 2005). This leads to a power

shift as consumer power subjugates traditional academic authority, which further enhances the commodification of education.

Equity of education is the basis of the third proposition, which is a key consideration in many education policies. Most of the time, equity is established through rules and regulations that have been declared as fair and reasonable by a standard body of opinion. Sri Lankan government has taken many policy decisions to ensure the education right of all, but still, there are gaps that may prevent some students from achieving their expected goals and success. Although 'free' education is provided and schools are available around the country, suitably qualified teachers or proper infrastructure may not be there for the students to gain an equal level of education. Sometimes the cultural capital, which can be defined as a combination of social, economic, and family status that differentiates one individual from another, has been identified as one of the reasons why the socially privileged individuals perform well in school and receive better grades. The educational system has implicit demands that help to maintain the pre-existing order by keeping the gap between students with unequal amounts of cultural capital. This is being accepted by the actors engaged in the educational system - students, their parents and teachers- without knowing that they are reproducing the social order. Educational institutes do not intend to be a part of social reproduction and treat the students based on their social backgrounds but rather the opposite, where students are provided equal opportunities regardless of their background. These institutes can broaden the types of cultural capital that are valued in the classroom and act as agents of transformation rather than reproduction through curriculum, pedagogy and assessments (Mills, 2008).

The fourth proposition is lifelong learning which goes beyond training or continuing education. Lifelong learning is hardly a new concept, but now it has received a new outlook, and the utopian and generous vision has become essential in guiding educational reforms (Ationuevo et al., 2001). Epistemology of lifelong learning is to understand the current body of knowledge and create new knowledge. This may occur in an integrated, informal, and discretionary manner anywhere like the workplace, within the family, or in a museum (Fischer, 2000). This is a dire requirement as a large volume of new knowledge gets added into the world, and only a minimal amount can

be distributed through education and formal learning methods. Acquiring new knowledge is essential for the future performance and progress of the students. Hence they should be provided with lifelong learning opportunities in many learning settings to be received at any age, covering all professions among a heterogeneous group of people. This is like integrating the best features of the school, home, community, and workplace learning. Lifelong learning has been identified as an essential requirement for social mobility in the Global Social Mobility Report 2020 published by World Economic Forum.

5. Conclusion and Implications

This study was based on a general review of research work on the relationship between social mobility and education. Most of these researchers could not explain the reason for low social mobility even with the initiatives taken towards expanding educational opportunities. It was found that these studies which focus on education need to look into the contributing pillars of education, such as access to education, quality of education, equity of education, and lifelong learning.

Sri Lanka has achieved a higher level of literacy through education reforms, such as providing free education, free textbooks, free meals, transport at subsidiary rates, and scholarships but inequality of education is still visible. When exploring this situation, we can see disparities in accessibility, quality, equity and lifelong learning opportunities, which may be the reason for them. Therefore the development of these propositions would guide future researchers to investigate further into this situation and make better policy decisions on education. This will definitely help deepen the understanding of the problems in education while providing insights to achieve the goal of providing quality education and lifelong learning for all.

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Faculty of Management & Finance
University of Colombo
Colombo 03, Sri Lanka.