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# 9th ABRM-ZGU International Conference on Restructuring of the Global Economy (ROGE)

8th -9th July 2019

**Said Business School, University of Oxford, UK**

Co-hosted by the

*Academy of Business & Retail Management (ABRM)*

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*School of Management and E-business in Zhejiang Gongshang University, China*

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# Integrating global sustainability elements into accounting programs: UAE University Business Education case study

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**Keywords**
Accounting for Sustainability, Accounting Education

**Abstract**

*Sustainability nowadays is on many organizations and governments' agendas. Addressing sustainability challenges and transforming them into opportunities for value creation is part of the DNA of tomorrow's successful companies. As a result, more organizations integrate sustainability into their business strategies and the traditional role of accountants is expanding to provide sustainability reporting and assurance services. In response to this need, graduates of accounting should equip with new skills, knowledge and competences related to the sustainability. The accountancy education and accounting curriculum should raising awareness of the importance of accounting for sustainability, helping to prepare accountants for the organizations they serve and supporting developments in thinking as well as practical tools and guidance as the new accounting graduates should and need to know how to measure and report sustainability activities in the organisation's activities.*

*The objectives of this research study are two-fold in the first place, to see how far Accounting program in UAE universities have come in integrating sustainability into their various curricula. To do so, the researcher survey the content of the study plan in the Universities offer accounting degree. Second to build model of integration the sustainability into accounting programme either as a stand-alone course or integrating as part of other accounting courses.*

*The snapshot results of current practice in teaching sustainability in Accounting programmes in UAE universities offering Accounting degree within business education as undertaken by the authors to obtain by searching the University's public website and/or online study plan (whichever held more information about the programme). After doing the content analysis for the study plan the researcher found none of the Business College offer a sustainability Accounting course in Accounting program as a standalone course. All the Business College offer global Awareness course either Compulsory College requirement or General Education or Compulsory supporting courses*

## 1. Introduction:

As the current world population of 7.6 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100 (United Nations, 2017). This growth will increase demand for limited natural resources that cannot be met if production and consumption remain the same as today. This future trend is creating major challenges in environmental sustainability and social welfare and barriers to sustainable growth in society and business. For developing and emerging economies, which account for 85% of the world's population, sustainability can be very different than it is for developed economies, leading to different priorities. As the McKinsey Global Institute estimates that the world could save $2.9 trillion every year by the year 2030 if it eliminated waste - put simply: if businesses used their resources (raw materials, labour and energy) more efficiently.

Accountants have a leadership role to play in embedding sustainability factors into an organization's strategy and decision-making processes to achieve sustainable value creation and being more transparent and informative on how value is created for stakeholders. Accounting summarizes and submits this information in reports and statements. The reports are intended both for the firm itself and for outside parties.

In other words: Accounting job to provide information to support the decision makers either inside or outside business. The objectives of professional accountants work to the highest standards of professionalism attain the highest levels of performance meet the public's interest. A professional accountant is expected to present financial information fully, honestly and professionally. Sustainability

accounting (also known as social accounting, social and environmental accounting, corporate social reporting, corporate social responsibility reporting, or non-financial reporting) was originated about 20 years ago and is considered a subcategory of financial accounting that focus on the disclosure of non-financial information about a firm's performance to external parties such as capital holders, mainly to stakeholders, creditors and other authorities (Ackers, 2019). These represent the activities that have a direct impact on society, environment, and economic performance of an organisation. Sustainability accounting in managerial accounting contrasts with financial accounting in that managerial accounting is used for internal decision making and the creation of new policies that will have an effect on the organisation's performance at economic, ecological, and social (known as the triple bottom line or Triple-P's; People, Planet, Profit) level. The topic is new and being led in Europe.

Sustainability Accounting is a tool used by organisations to become more sustainable. The most known widely used measurements are the Corporate Sustainability Reporting and the triple bottom line accounting. These recognise the role of financial information and shows how traditional accounting is extended by improving transparency and accountability by reporting on the Triple-P's.

As a result of the triple bottom level reporting, and in order to render and guarantee consistency in social and environmental information the GRI (Global Reporting Initiative), was established with the goal to provide guidelines to organisations reporting on sustainability. In some country's guidelines were developed to complement the GRI. The GRI states that reporting on economic, environmental and social performance by all organizations is as routine and comparable as financial reporting. In order to help finance teams and accountants embed sustainability into their accounting, The Prince of Wales set up The Prince's Accounting for Sustainability Project (A4S) in 2004.

Over the past decade, deans and CEOs have come to acknowledge the importance of sustainability as a strategic concern that should form part of all management education (Hommel et al, 2012). The term 'sustainability' has been long been associated with the Brundtland Commission's definition (WECD, 1987:16), sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs", but it has gained momentum over the years, and is now used as an umbrella term that encompasses all the dimensions that contribute to sustainable business operations. As such, it covers organisations' social, environmental and economic performance (Kiron et al. 2012, p. 70), or in other terms, their concern for the triple bottom-line of people, planet and profit (Ten Bos and Bevan, 2011, p. 288).

Higher education is entering a period of demanding challenges, both globally and nationally. Sector bodies and individual institutions are already developing leadership, governance and management systems that actively build on existing experience, but which also drive and support new investment, productivity, service delivery and quality of performance right across the sector. They are developing systems that both reflect past achievements and strengthen the sector through the diversity of institutional missions. Potentially, one important contribution to developing those systems is to be found in what has become known as sustainability accounting. This is a new accounting discipline, emerging from a respected longer-term body of work on environmental accounting, which strives to introduce methods for accounting for social and environmental impacts (positive and negative) that are normally not included in traditional financial accounting processes. The objective is to give a clear and complete picture of the real costs and benefits arising from decisions about allocating resources – financial, human or physical. Since the publication of the DfES Sustainable Development Action Plan and considering Universities UK's draft statement of recommended practice on accounting in further and higher education, higher education will need to be seen to be responding to a wide range of stakeholders on its sustainability performance.

Not everything can be quantified, of course, but using financial systems to help us integrate some non-financial information into reports is an important tool for management and for communication. The purpose of this sustainability accounting enables non-financial (ie environmental and social) considerations to be integrated into traditional financial accounts. Trials of techniques for integrating environmental considerations into traditional accounts have been under way for some years. Methods for broadening these techniques to include social and other non-financial considerations is at an early stage. Sustainability accounting embraces social, economic and environmental dimensions, and strives to address all three dimensions at the same time. Achieving sustainable development means progressing all the dimensions together.

Sustainability accounting is based on existing financial accounting frameworks. In the UK this is based on a combination of company law, accounting standards from regulatory bodies such as the Accounting Standards Board and the customs used by accounting professionals. These are drawn together in the UK General Accepted Accounting Practice (UK GAAP) and made specific to individual sectors in a Statement of Recommended Practice (SORP). Now, conventional financial accounting and conventional economic measurements do not capture all the consequences of economic actions.

**2. Literature review:**

**2-1 What is the Sustainability?**

Many definitions of sustainability and sustainable development exist, but arguably the foremost, and most widely accepted, is from the Report of the Brundtland Commission: Towards Sustainable Development, which states: "Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs."

Public recognition of the importance of sustainability and sustainable development is changing business culture and society. Two critical global challenges include dealing with national accounting systems that do not comprehensively reflect this progress, and ensuring that organizations embrace their performance on three levels:

1. Economic: goes beyond financial performance to reflect an organization's wider impact on the economy, and recognize that profitability, growth, and job creation lead to compensation and benefits for families and to tax generation for governments;
2. Environmental: relates to the natural resources consumed in delivering products and services, and the environmental impact of the organization's operations; and
3. Social: reflects an organization's impact on people and social issues, which include health, skills, and motivation on the people side, human relationships and partnerships on the social side, and business conduct and ethics.

From a business perspective, achieving sustainable value for investors and stakeholders means that organizations must do more than only complying with external laws and regulations. Taking a sustainable path requires organizations to give back more than they take in relation to critical economic, environmental, and social factors that their business models depend upon.

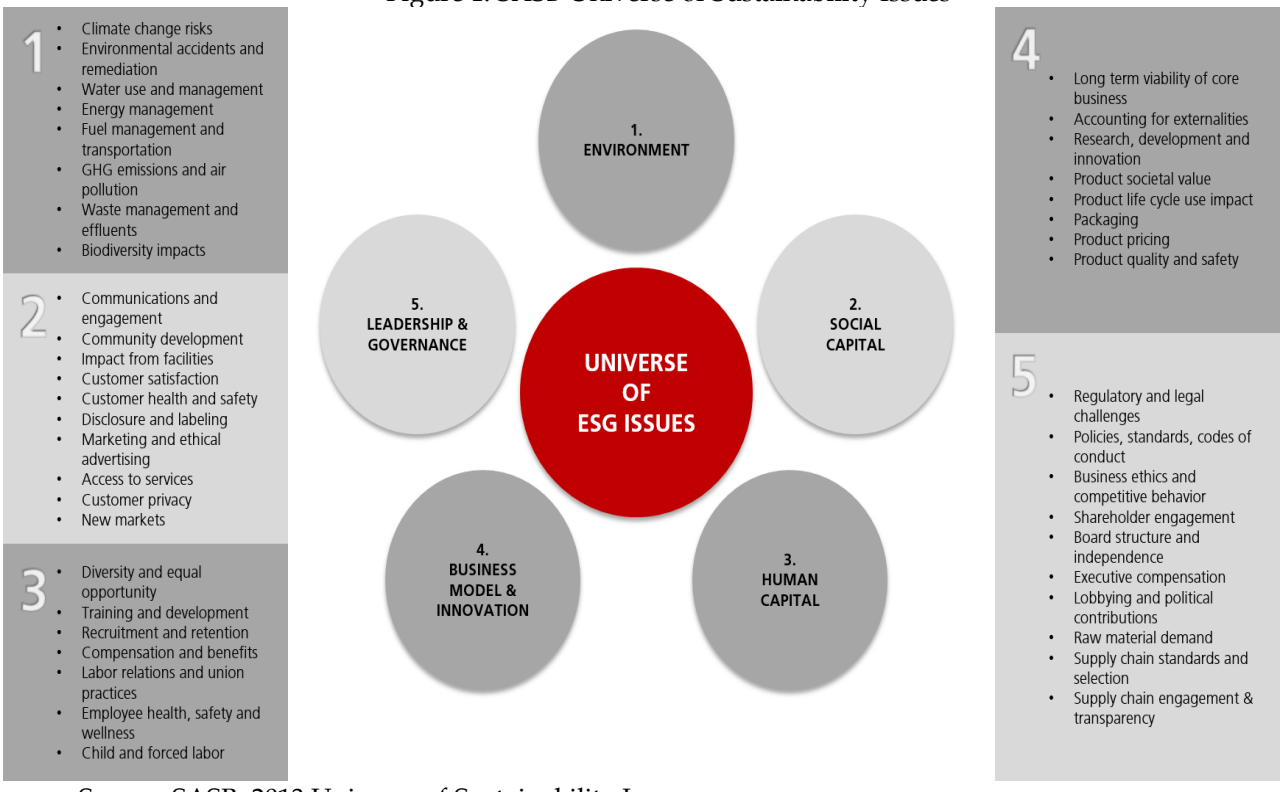
The Sustainability Accounting Standards Board (SASB), 2013 refers to environmental, social and governance (ESG) dimensions of a company's operation and performance. More specifically, sustainability includes both the management of a corporation's environmental and social impacts, as well as the management of environmental and social capitals necessary to create long-term value. It also includes the impact of environmental and social factors on innovation, business models, and corporate governance. Therefore, SASB's sustainability topics are organized under five broad sustainability dimensions consistent with the original ESG nomenclature:

1. **Environment:** This dimension includes corporate impact on the environment, either through the use of non-renewable natural resources as input to the factors of production (e.g., water, minerals, ecosystems and biodiversity) or through environmental externalities or other harmful releases in the environment, such as air and water pollution, waste disposal and greenhouse gas (GHG) emissions.
2. **Social Capital**: This dimension relates to the perceived role of business in society – or the expectation of business contribution to society in return for its social license to operate. It addresses the management of relationships with key outside stakeholders, such as customers, local communities, the public, and the government. It includes issues around access to products and services, affordability, responsible business practices in marketing, and customer privacy.
3. **Human Capital:** This dimension addresses the management of a company's human resources (employees and individual contractors), as a key asset to delivering long-term value. It includes factors that affect the productivity of employees, such as employee engagement, diversity, and incentives and compensation, as well as the attraction and retention of employees in highly competitive or constrained markets for specific talent, skills, or education. It also addresses the management of labor relations in industries that rely on economies of scale and compete on the

price of products and services, or in industries with legacy pension liabilities associated with vast workforces. Lastly, it includes the management of the health and safety of employees and the ability to create a safety culture for companies that operate in dangerous working environments.

4. **Business model and innovation**: This dimension addresses the impact of environmental and social factors on innovation and business models. It addresses the integration of environmental and social factors in the value creation process of companies, including resource efficiency and other innovation in the production process, as well as product innovation and looking at efficiency and responsibility in the design, use-phase, and disposal of products. It also includes management of environmental and social impacts on tangible and financial assets – either a company's own or those it manages as the fiduciary for others.
5. **Leadership and Governance:** This dimension involves the management of issues that are inherent to the business model or common practice in the industry, and that are in potential conflict with the interest of broader stakeholder groups (government, community, customers, and employees), and therefore create a potential liability or worse, a limitation or removal of license to operate. This includes regulatory compliance, lobbying, and political contributions. It also includes risk management, safety management, supply chain and resource management, conflict of interest, anti-competitive behavior, and corruption and bribery. It also includes risk of business complicity with human rights violations.

Figure 1: SASB Universe of Sustainability Issues




Source: SASB, 2013 Universe of Sustainability Issues

**2-2 Why is Sustainability Important?**

The world population will grow from seven billion people in 2012 to nine billion in 2050. This growth will increase demand for scarce natural resources that cannot be met if production and consumption remain as they are today—creating major challenges in environmental sustainability and social welfare and barriers to sustainable growth in society and business.

The importance of sustainability and corporate responsibility are gaining wide recognition and are increasingly embraced by international institutions, governments, regulators, and growing numbers of investors, stock exchanges, and organizations.

Organizations that embrace sustainability can enhance both their reputation with stakeholders and their value over the longer term. In the Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance, published by the Harvard Business School, "high sustainability" companies dramatically outperformed the "low sustainability" companies in both stock market and accounting measures, over an 18-year period.

How organizations manage sustainability factors will increasingly determine how well they perform financially and whether they can deliver sustainable business value to shareholders and other stakeholders.

**2-3 Global Perspectives on Sustainability**

Numerous international frameworks, standards, and benchmarks cover the various elements of sustainability. At least ten global treaties to protect the environment have been negotiated in the past three decades, and the number of regional and bilateral agreements is even higher.

For the past 20 years, corporate sustainability has been largely defined by people and institutions in the west, particularly Europe. But with the current global shift in economic balance, countries like India and China are redefining the landscape. Multinational corporations have a significant role to play in incentivizing sustainable development in many economies. For developing and emerging economies, which account for 85% of the world's population, sustainability can be very different than it is for developed economies, leading to different priorities. Many developing and emerging economies are attempting to balance green growth with inclusive growth; while green business initiatives can inhibit inclusion of the poor, these two elements of sustainable development should be linked to address the multiple challenges in low-income markets. In some jurisdictions, corporate governance requirements are being expanded to require directors to take a longer-term perspective and to incorporate a wider range of stakeholders and issues in their decision making and accountability. For example, the premise of the King III Corporate Governance Framework in South Africa is that business strategy, corporate governance, and sustainability are inextricably linked.

The Sustainability Accounting Standards Board (SASB) which provides sustainability accounting standards for use by publicly listed corporations in the U.S. in disclosing material sustainability issues for the benefit of investors and the public. SASB standards are designed for disclosure in mandatory filings to the Securities and Exchange Commission (SEC), such as the Form 10-K and 20-F. SASB is an independent 501(c)3 non-profit organization and is accredited to set standards by the American National Standards Institute (ANSI). In 2013, SASB issued conceptual framework sets out the basic concepts and definitions behind SASB's sustainability accounting standards (the SASB Standards) and serves as additional guidance for the adoption of the standards by corporations and the use of material sustainability information by investors.

Australian Research Institute in Education for Sustainability. (ARIES). (2010) report Sustainability in key professions: Accounting. An action research program. This report provides the outcomes and recommendations emerging from an action research program which aimed to create change for sustainability in the accounting profession and in the operations of accounting schools and disciplines within accredited institutions.

**2-4 The Role of Accountants and the Accountancy Profession**

Accountants have a leadership role to play in embedding sustainability factors into an organization's strategy and decision-making processes to achieve sustainable value creation and being more transparent and informative on how value is created for stakeholders.

Accounting for sustainability is fundamentally about improving business decision making in:

- Responding to uncertainty and risk, and seizing growth opportunities through developing existing and new markets;
- Innovating processes, products, and services that can provide societal benefits;
- Driving operational efficiency and lowering costs by way of lean operations; and
- Inspiring people including employees, customers, and suppliers.

Accountants' and finance professionals' roles in this area are increasing, primarily among larger organizations and at senior levels. For example, in a 2012 Deloitte Touche Tomatsu global survey, 26% of CFOs said that they are accountable to the board for their company's sustainability strategy—a 9%

increase over 2011. Most CFOs (53%) said their involvement in sustainability increased in the previous year; even more (61%) expect greater involvement in sustainability over the next two years.

According to various surveys, including the IFAC SMP Quick Poll, accounting practices are increasingly providing sustainability services to their clients. These services include advisory, accounting, and assurance, with the former the most common.

In response to this need, the accountancy profession is raising awareness of the importance of accounting for sustainability, helping to prepare accountants and the organizations they serve, and supporting developments in thinking as well as practical tools and guidance. In conjunction with others, the profession is leading multiple initiatives to help accountants, clients, and organizations embrace management practices and processes that help integrate sustainability into decision making.

IFAC works closely with the Prince of Wales' Accounting for Sustainability Project (A4S), which emphasizes the importance of the connection between accounting and sustainability, and The Economics of Ecosystems and Biodiversity (TEEB) for Business Coalition, which is developing guidance to successfully incorporate natural capital into strategy and decision-making processes. In addition, IFAC is significantly involved with the International Integrated Reporting Council (IIRC), which is developing an international framework to help organizations report how strategy, governance, performance, and prospects lead to the creation of value over the short, medium, and long term. IFAC also supports the Climate Disclosure Project's Climate Disclosure Standards Board, which issued the Climate Change Reporting Framework, and the Global Reporting Initiative.

In 2011, CIMA report on Sustainability and the role of the management accountant, this report looks at a 2010 survey of managing directors, accountants and sustainability managers, working for a range of organisations in New Zealand. The survey found that only a minority of accountants were involved in setting their company sustainability strategy, as most continued to be seen under their more traditional role of financial specialist, rather than for their ability to collaborate towards sustainability goals. The report also highlighted that as there is a worldwide move toward 'integrative' reporting incorporating non-financial as well as financial data, management accountants are ideally placed to provide the alignment mechanisms and collaborate with senior management in producing fully integrated reports, reflecting sustainable strategies adopted by organisations which fulfil the needs of stakeholder groups.

In 2013, ACCA brought together a group of sustainability professionals and practitioners to discuss the business benefits of sustainability reporting in Singapore. During the roundtable, participants strongly advocated for management ownership of the sustainability reporting process and emphasized the fact that reporting has the most benefits for companies when it is strategic and reports specific targets, such as improving diversity or reducing energy consumption. A misunderstanding of the objectives of reporting may cause the production of reports of limited value to consumers and stakeholders, but reporting frameworks provide a valuable benchmarking tool for companies and stakeholders. Also, there has been little momentum observed towards reporting in Singapore, with neither companies nor stakeholders pushing for reporting as a practice or goal. The benefits of sustainability reporting are not clearly understood within companies, either by leadership or employees.

There is a skills gap between what is required to create a comprehensive sustainability report and what companies have available and are willing to commit to the task. While frameworks can be useful for stakeholders, there is confusion over the number and variety of frameworks.

ACCA report recommended to educate companies and stakeholders on the relevance of sustainability issues. Arguably, this responsibility lies with the organisations and institutions which want to see increased sustainability disclosure, such as responsible investors, NGOs, special interest groups, consumers, governments, and stock exchanges. Also, to build awareness that the process of reporting is integral to the long-term strategic goals of companies. Companies and regulators should continue to raise awareness of sustainability and the benefits of sustainability reporting as mandating sustainability reporting may not be conducive to the production of comprehensive and useful reports.

**2-5 Purpose of sustainability accounting and disclosure**

The purpose of sustainability accounting is to evaluate the environmental, social and governance performance of companies through an account of their management of various forms of non-financial capital associated with sustainability– environmental, human and social – and corporate governance

issues, which they rely upon for sustained, long-term value creation1. Ultimately, the goal of sustainability accounting and disclosure is to inform development of an integrated business strategy for corporate management and assess sustainability risks and opportunities inherent to investment decisions.

Sustainability accounting and disclosure is intended as a complement to financial accounting, such that financial information and sustainability information can be evaluated side by side and provide a complete view of a corporation's performance and value creation, both financial and non-financial, and across all forms of capital.

**2-6 Approaches to integrating sustainability within the business school curriculum**

Increasingly, universities are addressing environmental sustainability issues by modelling ecologically sound practices and supporting the integration of sustainability into the curriculum (Bacow and Moomaw, 2007; Burritt, 2012).

In a seminal paper on sustainability in higher education Sterling (2004) proposes three potential levels of response by educational institutions to the challenge of teaching sustainability:

1. Educating about sustainability – an accommodative response
2. Education for sustainability – a reformative response
3. Capacity building – a transformative response

The first level is the most basic, with sustainability modules being added to the educational offer. The second level takes this further, with the institution itself being transformed by the adoption of more sustainable approaches. The third level is much more substantial, making the educational institution a place where students are transformed by the adoption of skills for sustainability. Muff et al (2013) criticise existing outcome measures for business schools and propose that their aim to be amongst the best business schools in the world should be revised to be the best for the world. The problem that emerges from the available models for integrating sustainability into the curriculum is that it suffers from some of the persistent problems haunting all management education, which can be described as its 'science-envy', its myopic orientation, and the existence of specific drivers such as accreditation, publishing criteria and rankings (Painter-Morland, 2015). Furthermore, Hühn (2013) has demonstrated that the MBA education fails in several ways. Firstly, students learn tools in their MBA education to solve cases, yet they do not reflect reality. They are encouraged to adopt a 'value-neutral' approach and to solve cases as facts; these are often made to fit the theory.

International Federation of Accountants (IFAC) study on how accountants can contribute to business sustainability (Accounting for Sustainability. From Sustainability to Business Resilience, 2014) which highlights the important role accountants can, and must, play in embracing sustainability challenges. It also provides guidance on how to ensure that the organisations that accountants serve are resilient, by linking these challenges to a broader business agenda and strategy. IFAC suggests eight practical ways for accountants to make a difference and fulfil their role as business partners:

Identify and connect key trends and impacts to the organisation's strategy, business model and performance.

- Integrate significant natural and social capital issues into decision-making processes.
- Assess the benefits of tackling environmental and social issues (eg cost reduction; revenue generation).
- Organise internal systems and processes to ensure what matters is measured and managed.
- Link the strategy and resources to the creation of value for stakeholders.
- Drive efficiency by reducing waste and controlling costs.
- Provide credibility to the information and data produce through effective oversight and governance.
- Communicate clearly to ensure transparency.

The briefing examines the link between sustainability and business resilience, how integrating sustainability leads to better performance, and the key elements of developing a sustainable strategy and business model.

It also includes references and links to some of the many resources and tools available to help develop knowledge and skillsets.

**3-. Research methodology**

The objectives of this research study are two-fold in the first place, to see how far Accounting program in UAE universities have come in integrating sustainability into their various curricula. To do so, the researcher survey the content of the study plan in the Universities offer accounting degree. Second to build model of integration the sustainability into accounting programme either as a stand-alone course or integrating as part of other accounting courses.

Number of Licensed Institutions by Commission for Academic Accreditation (CAA) and MOHE Recognized Institutions: 79

Number of Institutions offer BA Business - Accounting: 35

Source: https://www.caa.ae/caa/DesktopModules/Institutions.aspx

**4- Results**

The snapshot of current practice in teaching sustainability in Accounting programmes in UAE universities undertaken by the authors to obtain by searching the University's public website and/or online study plan (whichever held more information about the programme).

The main questions are:

1. Does the course overview / introduction / summary mention 'sustainability'?
2. Is there a statement that sustainability is integrated into the curriculum (i.e. may be taught within modules not specifically about sustainability)?
3. Are there one or more individual modules with 'sustainability' in the title? If so, are they compulsory?
4. Where are they located in the programme?

After doing the content analysis for the study plan the researcher found none of the Business College offer a sustainability Accounting course in Accounting program as a standalone course. All the Business College offer global Awareness course either Compulsory College requirement or General Education or Compulsory supporting courses

Table: 1: List of Higher Education in different Emirates has CAA accreditation

| United Arab Emirates | No of Universities | No of Universities offer Business/Management/Accounting degree |
|---|---|---|
| Emirate of Abu Dhabi | 18 | 10 |
| Emirate of Dubai | 31 | 22 |
| Emirate of Sharjah | 7 | 4 |
| Emirate of Ajman | 4 | 3 |
| Emirate of Ras Al Khaimah | 3 | 2 |
| Emirate of Fujairah | 2 | 2 |
| Emirate of Umm Al Quawain | 1 | 1 |
| Total | 66 | 44 |

Source: CAA Portal www.caa.ae accessed 30th April 2019

**5. Conclusion and implications**

Some aspects of sustainability and accounting education are explored in this research. Literature research findings form the International Accounting bodies suggest that there is strong support for the inclusion of sustainability in business and accounting curricula. Sustainability should be integrated with all accounting courses; Accounting program should offer more courses in sustainability as part of the University role to produce the graduates who are ethical and socially responsible and positive contributions to the society.

Further research needs to reveal that in sustainability teaching, real examples and case studies should be used. Embedding sustainability not just to an end develop future graduates who can articulate and act on societal challenges. Depth and quality sustainability in Accounting programme rather than introduction to everything through business courses or university general requirements as teaching the students to do the "right thing" and do the "thing right" in a complex world. Accounting educators should develop the capabilities of students to be future generators of sustainability value for business and society at large. Accounting educators should incorporate into academic activities and curricula the values

of sustainability and should create educational frameworks, materials, processes and environments that enable effective learning experiences for responsible graduates.

Accounting educators should interact with managers of business corporations to extend knowledge of challenges in meeting sustainability, social and environmental responsibilities and to explore jointly effective approaches to meeting these challenges. Also, Accounting educators should facilitate and support dialogue and debate among educators, students, business, civil society organizations and other interested groups and stakeholders on critical issues related to sustainability within the social responsibility.

**6- Further research**

Studying details of the following Accounting and Finance courses to explore how they integrated sustainability within the course materials Financial accounting, Managerial Accounting, Cost Accounting, Auditing, Banking, Financial management, Financial Reporting.

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# Beta evaluation under thin trading conditions

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**Keywords**
Beta, Thin Trading, Liquidity Measures, Beta Correction Procedures, Business Valuation

**Abstract**

*In business valuation using the income approach, the cost of capital is used to discount future cashflows. The computation of the cost of capital is usually based on the CAPM (or related multi-factor models), and therefore, the beta needs to be computed to cover the systematic risk of the respective company. Thin trading can cause a misspecification of beta as the timing of the returns of the market portfolio and the timing of the return of the respective company do not coincide. Hence, the valuator must assess the accuracy/reliability of the company beta (computed based on historical returns). In doing so – besides statistical tests – either liquidity measures can be used, or the beta can be corrected for thin trading distortions using beta correcting procedures. This paper evaluates whether liquidity measures or correcting procedures better reflect the distortions of the beta, and therefore, valuators should rely on, in practice. In order to provide a comparable universe of liquidity measures and beta correcting procedures, low frequency (based on inter-day data) performance-oriented liquidity measures as well as performance-oriented beta correcting procedures are employed. Thin trading is represented by days without trading. In an experimental design, days with trading are randomly removed from the original full trading sequences. The change in the resulting beta is then compared to the respective changes in the liquidity measures as well as to the corrected betas. To evaluate the accuracy of the changes/correcting effects, relative absolute and relative absolute log-scaled prediction error measures are used.*

*The results are presented following the standard beta computation methodology (based on one-year daily returns) and show, that in most cases, liquidity measures outperform beta correcting procedures. This holds for both, large markets as well as small markets. Improving the computations forming several portfolios according to betas and stock price volatility (both based on the originally full-trading sequences) as well as company specific characteristics, the results get more diverse, showing that in some cases liquidity measures outperform beta correcting procedures, and vice versa.*

# Evaluating risk-based selection methods for tax audits in Poland

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**Keywords**
tax compliance, tax audit selection methods, external risk management, public administration

**Abstract**

*Penalty rates and probability of fraud detection are among the most important factors shaping taxpayer's compliance. While the first of those factors may be directly controlled by tax authorities the second is usually indirectly influenced by the amount and efficiency of resources employed to detect tax evasion (Allingham, Sandmo 1972, p. 330). In order to increase fraud detection rate tax authorities may implement diversified strategies. They include inter alia the application of various methods to select taxpayers for tax audits. One of those methods is based on the so-called external risk areas. In Poland this method was introduced shortly after accession to the European Union as a tool of the external risk management strategy in the public administration. Both this strategy and audit targeting tools have evolved tremendously since its first implementation. This article attempts to evaluate the application of external risk areas to select taxpayers for tax audits in Poland. The author uses various indicators to measure the efficiency of tax audits and compare this efficiency considering different tax audit selection methods.*

## Introduction

Accession of Poland to the European Union contributed to multiple changes in the public administration. An important novelty aimed at increasing efficiency of this administration was an introduction of the external risk management strategy in 2005. Similar strategies were already put into practice both in the other European Union and OECD member states. The primary objective of these strategies was to enable tax administration to cope with external risks, facilitate management and decision-making activities. They covered application of diversified tools, such as taxpayer education and assistance programmes, modification of laws and procedures or adoption of computerized systems for detection of tax evasion cases.

Improving taxpayer compliance was perceived as the main priority of the strategy in question. To achieve the strategic goals tax authorities implemented new fraud targeting methods. Those included inter alia selection of taxpayers for tax audits with the use of previously identified risk areas. In the years 2005-2017 those areas were continuously modified. It was the result of dynamically evolving patterns of tax evasion. While primarily the described risk areas considered detected fraud schemes in the last years they were defined in relation to specific economic sectors where fraud cases occurred most frequently.

The article provides an insight into chosen aspects of the external risk management in public administration in Poland. It considers in particular tax audit selection methods based on risk areas. It discusses the application of those methods and reviews identified risk areas. The final part examines certain indicators of efficiency of the tax audits for which selection was based on different risk areas and compares them with indicators of efficiency of the audits for which selection included other criteria.

## External risk areas as a tool for tax audit selection

Compliance risk management is a crucial element of strategies implemented by modern tax administrations. It is defined as a set of steps, techniques and tools to improve the efficiency of tax administration while dealing with compliance risks. It has multiple objectives that cover inter alia: to increase voluntary tax compliance, to better focus audit activities on non-compliant taxpayers or to improve the use of available human, financial and technical resources. The main guidelines for that management were developed both by the OECD and the European Union in the late 1990-ties. They were described in detailed way in multiple reports published by those organizations (e.g. *Compliance Risk Management, 2004, pp. 1-73; Use of Random Audit Programs, 2004, pp. 1-51; Risk Management Guide, 2006, pp. 1-98; Compliance Risk Management Guide,* 2010, pp. 1-110).

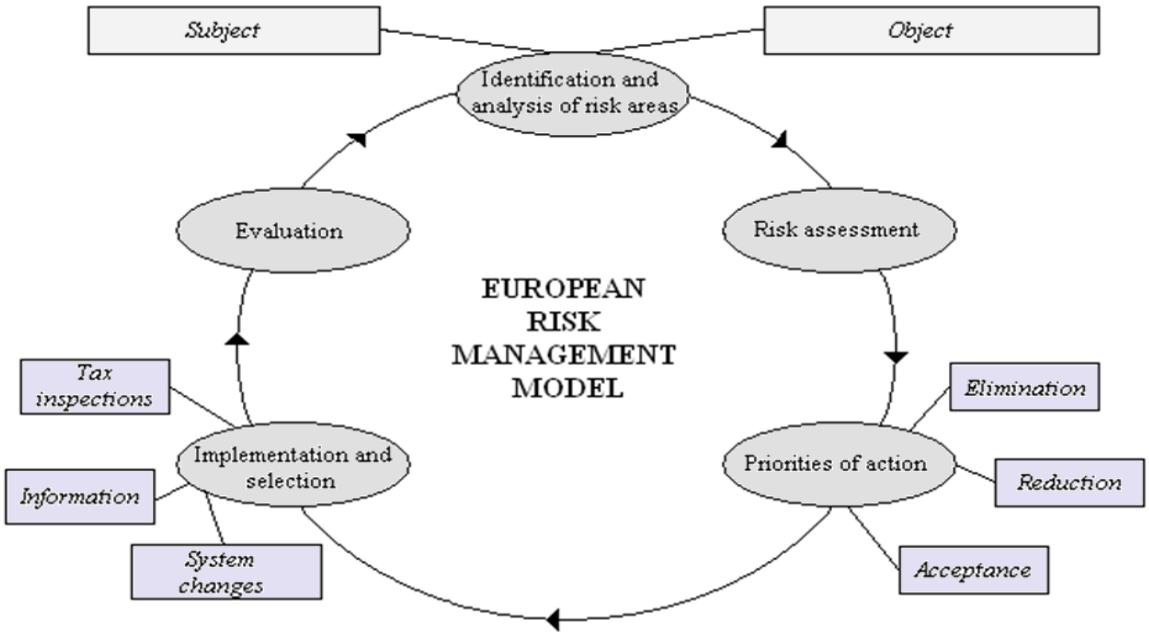


Figure 1. Risk management model in the public administration
Source: *Polski model ryzyka,* Ministerstwo Finansów, Warszawa 2004, p. 5.

Compliance risk management process is usually presented in a form of a five-step model (Figure 1). It starts with risk identification and analysis. During this phase potential non-compliance risks (risk areas) are being recorded, placed on a list and categorized into different genres (e. g. register risk, filling risk, payment risk, declaration risk). Taxpayers are put into various groups (considered e. g. the sector of the economy, legal form or compliance behaviour). The following step consists in risk assessment and prioritization. The main purpose of this step is to evaluate the risks and segregate them according to their gravity. This phase is accomplished while considering consequences and likelihood of risk occurrence. Likelihood is measured in terms of the probability of materialization of certain risks and may take a descriptive form as indicated in the Table 1. This description is used for risk categorization. Risks of taxpayer's non-compliance categorized as high or significant that may occur likely or almost likely require application of multiple methods. In addition, risks that may be treated are separated from those that which can't. In the next step potential risk treatment options are being developed. Tax audits (tax inspections) are forming a part of a treatment phase in which appropriate risk management measures (treatment options) are being chosen and implemented. In the last phase applied treatment options (measures) are evaluated and new risk areas which may be used for the selection of taxpayers for tax audit purposes in the future are identified.

| *Rating* | *Likelihood description* | *Risk characteristics* | |
|---|---|---|---|
| | | *Subjective* | *Objective* |
| *1* | *Rare* | *Risk may occur only in exceptional circumstances* | *Likely to occur once in 25 years* |
| *2* | *Unlikely* | *Risk could occur at some time* | *Likely to occur once in 10 years* |
| *3* | *Moderately likely* | *Risk might occur at some time* | *Likely to occur once in the next three years* |
| *4* | *Likely* | *Risk will probably occur in most circumstances* | *Risk is likely to occur more than once in the next three years* |
| *5* | *Almost certain* | *Risk is expected to occur in most circumstances* | *Risk is likely to occur this year or at frequent intervals* |

Table 1. Compliance risk likelihood matrix (a sample)
Source: *Compliance Risk Management, 2004, p. 28.*

Selection of taxpayers based on risk areas is considered as important tool that helps to increase the efficiency of tax administration while collecting tax revenue. It may be used together or interchangeably

with other methods, such as individual screening or random selection. It is usually accompanied by the application of analytical techniques that help to target those taxpayers who are the most likely to be non-compliant. Those include data matching or data mining. Risk areas are in most compliance risk management strategies specified as segments of taxpayers characterized by high frequency of engaging into certain fraud evasion schemes, committing specific tax errors or behaving differently from other taxpayers belonging to the same group (they may include, for example, some sectors of the economy, transactions, fraud schemes, types of business activity or particular categories of irregularities in declaring or settling tax liabilities).

*Risk management strategies were put into practice in many OECD countries. Among the risk areas (categories) most frequently identified by tax authorities are (Tax Administration, 2015, p. 130): transfer pricing, VAT fraud, hidden economy, unpaid tax debts, avoidance schemes.* Many similarities concerning identified risk areas in different countries exist in the case of VAT (Developments in VAT, 2009, p. 18). They are usually divided into four groups: failure to register, failure to fill returns on time, failure to correctly report (including the following subareas: tax avoidance, tax evasion, practices to inflate tax returns, specific industry areas, cross border transactions, reporting non-compliance) and failure to pay tax on time.

| Country | Australia | USA | Sweden |
|---|---|---|---|
| Risk sectors | construction, transport, restaurants, hairdressing, beauty salons, cleaning services, clothing and textiles, motor vehicle, retailers, art and antique dealers | car sales, construction, health care, medical professions, restaurants, real estate agents | construction, restaurants, hairdresser, taxis, scrap metal, e-commerce, labour agents |

Table 2. Basic risk sectors in Australia, USA and Sweden
Source: Khwaja, Awasthi, *Loeprick, 2011, p. 50.*

*In many countries risk areas are identified in relation to selected sectors of the economy (Table 2). Those sectors are characterized by the highest ratio of occurrence of tax non-compliance schemes. In most of the countries risk sectors include construction or transportation. Non-compliance is also relatively common in the sector of non-tangible services, scrap metal trade or e-commerce.*

**Identified external risk areas in Poland**

Based on information obtained from the risk coordinators employed on the local levels the Ministry of Finance in Poland has been identifying since 2005 risk areas that played an important role while selecting taxpayers for tax audits. While in the year 2005 Polish tax authorities established a catalog of eight risk areas their number in the following years was growing until 2010 when their classification was entirely changed and divided into subareas. In the years 2005-2013 risk areas considered various categories of taxpayers. They included taxpayers conducting activities in specific sectors (e. g. intangible services, fuel trade, construction services, e-commerce, scrap recycling, mobile phone trade, virtual offices, second hand car trade), committing fraud or errors of a certain type (e. g. carousel fraud, ghost traders, missing registration of a business, fictitious transactions, adoption of incorrect transfer prices), conducting activities of a certain type (e. g. intra-Community transactions), subject to selected taxation schemes (e. g. flat rate scheme for small enterprises), exhibiting certain behaviors (e. g. frequently declaring losses from business activity) or with specific features (e. g. dormant taxpayers[1]).

Since 2015 new risk areas have been identified in relation to specific sectors of the economy. National Compliance Plan implemented in 2016 provided for 14 such sectors (Table 3). Within each sector the Ministry of Finance indicated the most common tax evasion schemes. Among the sectors were fraud is relatively prevalent are production of building materials, construction services, fuel, automotive, e-

[1] Dormant taxpayer was defined inter alia by the following characteristics: conducting business activity; declaring relatively small number of transactions in a tax year; declaring relatively low turnover and income (both characteristics are compared with other businesses of similar scale and in the same sector of economy); never or rarely deducting tax allowances or tax credits; never or rarely subtracting losses from the previous year.

commerce, IT services, production and trade in metals and metal products. Since accession of Poland to the European Union of increasing concern is the so-called missing trader fraud.

| Risk areas | Most common tax evasion cases |
|---|---|
| Production of building materials and construction services | understatement of revenue (turnover), unreliable recording of revenue, incorrect values on invoices or failure to issue invoices, incorrect VAT settlement with respect to bad debts, use of fictitious invoices, deduction of non-deductible expenses, late payment of tax or tax advances, failure to comply with the obligations of the payer, taxation of sales with improper VAT rates, fictitious transactions, incorrect application of the flat-rate tax |
| Real estate | understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, use of fictitious invoices, deduction of non-deductible expenses, late payment of tax or tax advances, fictitious transactions |
| Consulting and other intangible services | fictitious transactions, understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, use of fictitious invoices, failure to comply with the obligations of the payer |
| Fuel | carousel fraud, incorrectly declared transactions with related entities, use of fictitious invoices, fictitious transactions, understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, deduction of non-deductible expenses, carousel fraud, fictitious transactions |
| Financial and insurance services | understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, use of fictitious invoices, deduction of non-deductible expenses, fictitious transactions |
| Health care | understatement of revenue (turnover), unreliable recording of revenue, incorrect values on invoices or failure to issue invoices, use of fictitious invoices, deduction of non-deductible expenses, late payment of tax or tax advances, failure to comply with the obligations of the payer |
| Transport and logistics | late payment of tax or tax advances, failure to comply with the obligations of the payer, use of fictitious invoices, understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, incorrect VAT settlement with respect to bad debts, fictitious transactions |
| Automotive | unreliable recording of revenue, understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, deduction of non-deductible expenses, use of fictitious invoices, carousel fraud, failure to register a business, late payment of tax or tax advances, failure to comply with the obligations of the payer, incorrectly declared transactions with related entities |
| Activities of sales agents | using fictitious invoices, deduction of non-deductible expenses, carousel fraud, late payment of tax or tax advances, failure to comply with the obligations of the payer, fictitious transactions, incorrectly declared transactions with related entities |
| E-commerce and IT services | understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, unreliable recording of revenue, use of fictitious invoices, deduction of non-deductible expenses, late payment of tax or tax advances, fictitious transactions, failure to register a business |
| Trade in food and tobacco | unreliable recording of revenue, understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, use of fictitious invoices, deduction of non-deductible expenses, carousel fraud, late payment of tax or tax advances, failure to comply with the obligations of the payer, fictitious transactions |
| Production and trade in metals and metal products | understatement of revenue (turnover), incorrect values on invoices or failure to issue invoices, use of fictitious invoices, deduction of non-deductible expenses, carousel fraud, late payment of tax or tax advances, failure to pay tax, fictitious transactions |
| Trade in electronics | carousel fraud, incorrectly declared transactions with related entities, use of fictitious invoices, fictitious transactions |
| Wholesale trade in other products | understatement of revenue (turnover), incorrectly declared transactions with related entities, use of fictitious invoices, late payment of tax or tax advances, failure to comply with the obligations of the payer, fictitious transactions, carousel fraud |

Table 3. Tax risk areas and selected types of tax evasion in Poland
Source: *Krajowy Plan Działań,* 2016, pp. 8-51.

In the simple form this fraud is committed by an entrepreneur registered for the purposes of intra-community trade who acquires goods from another entrepreneur registered in a different member state of the European Union. After the intra-Community acquisition of goods, he sells them on the national market, collects VAT and disappears without paying tax due and submitting a declaration. In a more sophisticated form, more companies are engaged in this type of fraud (carousel fraud). Goods are usually not sold for consumption in the first country of destination but are circulating between companies a few times before being acquired by the final consumer. In order to target VAT non-compliant taxpayers, the selection for tax audit purposes is additionally based on certain fraud symptoms. The most important of them for businesses are:

– trading with certain goods and providing certain services (e.g. mobile phones, precious metals, computer chips and other electronic components, game consoles, car spare parts, gas and electricity certificates, telecommunication services, demolition services),

– frequent claiming of relatively high (in comparison to companies of similar scale and operating in the same economy sectors) VAT refunds,

– operating on multinational scale,

– receiving the major part of turnover from exempt intra-community supplies or exempt importation activities,

– being controlled by companies located, registered or managed from abroad, being owned or financed by companies located in tax havens, having a seat or being managed from a virtual office,

– periodically changing suppliers or customers,

– applying relatively low-price mark-up,

– conducting business with relatively little (in comparison to businesses of similar scale and operating in the same economy sectors) infrastructure,

– never or rarely submitting declarations or settling tax payments,

– signing transactions in electronic form (by Skype or e-mail),

– paying cash and never financing acquisitions with trade credit,

– never or rarely signing insurance policies for supplied goods,

– never or rarely signing distribution agreements,

– constantly using different bank accounts for business purposes,

– transporting and storing goods into countries where there are only restricted possibilities to verify transactions (e. g. in Hong Kong Dubai or free zones at airports).

Other VAT related incompliance schemes include understatement of turnover in order to avoid being registered for VAT purposes, unreliable recording of revenue, fictitious invoices, fictitious transactions, incorrect VAT settlement with respect to bad debts or taxation of sales with improper VAT rates. When it comes to the direct taxation among the most popular incompliance cases are the following: deduction of non-deductible expenses, incorrectly declared transactions with related entities, late payment of tax or tax advances, failure to comply with the obligations of the payer. Certain risks exist predominantly only in one or two sectors, like for instance failure to register a business (in automotive; e-commerce and IT services sectors) or incorrect VAT settlement with respect to bad debts (in production of building materials and construction services; transport and logistics). Others risk exist in almost every sector of the economy, like for instance understatement of revenue (turnover) or use of fictitious invoices.

Efficiency of tax audits based on external risk areas

Conduction of tax audits in Poland is the responsibility of local tax offices. Those are divided into offices for large taxpayers and offices for other taxpayers. The group large taxpayers include the following entities: 1) with an annual net income of at least 5 million euro in the previous year; 2) controlled by a non-resident (or where a non-resident has a minimum of 5% of the votes at the meeting of shareholders or at a general meeting); 3) that as residents concurrently participate in the management of a domestic entity and a foreign entity, or control or have at the same time a share in the capital of such entities; 4) that as residents participate in the management of companies located abroad or control thereof or has a share in their capital; 5) banks, insurance entities and capital tax groups; 6) branches or representative offices of the foreign companies.

| Specification | Year | | | |
|---|---|---|---|---|
| | 2007 | 2010 | 2013 | 2016 |
| Number of tax audits based on external risk areas as a share of tax audits in total (%) | 37.47 | 46.19 | 51.04 | 67.0 |

Table 4. Tax audits based on external risk areas in Poland

Source: *Sprawozdanie o działaniach,* 2008, s. 2-3; Sprawozdanie *o działaniach,* 2011, s. 2-3; Sprawozdanie *o działaniach,* 2014, s. 2-3; *MF-9Ps,* 2008, s. 4; *MF-9Ps,* 2011, s. 3; *MF-9Ps,* 2014.

In the years 2005-2016 tax offices in Poland conducted nearly 1.4 million tax audits and verified the fulfillment of tax obligations of approximately 3.4% of all taxpayers. While in 2007 for nearly 37.5% of these audits, identified risk areas were used as selection criterion, this share was increasing systematically from year to year and reached in 2016 almost 67.0% (Table 4). Other important criteria include information from third parties[2], analysis of the available documents and random selection. Random selection is also used as a second method after having chosen taxpayers who fall into specific risk areas. Other factors that may contribute to the initiation of tax audit in Poland include: lacking, delayed or incomplete tax return, noticeable changes in turnover between different tax settlement periods and relatively low turnover (income) declared in comparison to other companies of similar scale, operating in the same economic sector and offering similar goods and services.

| Specification | | Year | | |
|---|---|---|---|---|
| | | 2007 | 2010 | 2013 |
| Number of tax audits detecting irregularity as a share of tax audits belonging to a corresponding category in total (%) | Tax audits based on external risk areas | 49.22 | 58.46 | 68.01 |
| | Other tax audits | 58.89 | 65.72 | 73.03 |
| Average additional tax liability assessed (PLN) | Tax audits based on external risk areas | 12 017.36 | 21 140.81 | 36 681.68 |
| | Other tax audits | 6105.45 | 13 931.74 | 34 184.63 |

Table 5. Efficiency of tax audits based on risk areas versus other tax audits

Source: *Sprawozdanie o działaniach,* 2008, s. 2-3; Sprawozdanie *o działaniach,* 2011, s. 2-3; Sprawozdanie *o działaniach,* 2014, s. 2-3; *MF-9Ps,* 2008, s. 4; *MF-9Ps,* 2011, s. 3; *MF-9Ps,* 2014.

The efficiency of tax audits may be assessed using two indicators. The first allows evaluation of the applied of the selection method. It is the relation of the audits in the course of which non-compliance (irregularities) was (were) detected to all the audits conducted. The second provides information on the amount of additional tax liability assessed as a result of one tax audit. The comparison of these indicators between tax audits for which the selection was based on risk areas and other tax audits may be found in Table 5. Considering the first indicator it may be noticed that the efficiency of the audits based on risk areas was slightly higher in the years 2007 and 2010 and slightly lower in 2013 than the efficiency of other audits. The analysis of the second indicator shows that the tax liability assessed as a result of one tax audit for the audits based on risk areas was higher than in the case of other audits.

| Risk area | Number of audits conducted | Additional tax liability assessed (thousands PLN) | Additional tax liability for specific risk area as % of additional tax liability in total |
|---|---|---|---|
| Production of building materials and construction services (LTO/OTO) | 7 553 | 568 907 | 9.18 |
| Real estate (LTO/OTO) | 1 245 | 194 300 | 3.14 |
| Consulting and other intangible services (LTO/OTO) | 1 659 | 239 249 | 3.86 |

[2] For instance, information from the following external sources: The State Labour Inspection (PIP), the Social Insurance Institution (ZUS), the State Trade Inspection (PIH), the Supreme Chamber of Control (NIK), the public prosecutor's office, police offices, private companies and individuals.

| | | | |
|---|---|---|---|
| Fuel (LTO) | 137 | 453 491 | 7.32 |
| Financial and insurance services (LTO/OTO) | 455 | 50 423 | 0.82 |
| Health care (OTO) | 517 | 10 713 | 0.17 |
| Transport and logistics (OTO) | 3 007 | 144 311 | 2.33 |
| Automotive (OTO) | 2 151 | 155 156 | 2.50 |
| Activities of sales agents (LTO/OTO) | 705 | 1 020 792 | 16.48 |
| E-commerce and IT services (OTO) | 1 173 | 79 510 | 1.28 |
| Trade in food and tobacco (OTO) | 2 404 | 479 449 | 7.74 |
| Production and trade in metals and metal products (OTO) | 974 | 167 975 | 2.71 |
| Trade in electronics (LTO) | 141 | 874 297 | 14.12 |
| Wholesale trade in other products (LTO/OTO) | 2 915 | 1 755 336 | 28.34 |
| Risk areas in total (LTO/OTO) | 25 036 | 6 193 909 | 100.00 |

Table 6. Selected data on tax audits based on risk areas identified in 2016
LTO – Offices for Large Taxpayers
OTO – Other Tax Offices
Source: *Monitoring realizacji,* 2017, pp. 8-9.

The data for 2016 indicate that tax offices conducted approximately 25 thousand audits for which taxpayers were selected based on the risk areas (Table 6). Tax offices for large taxpayers were conducting in this year more tax audits using different selection criteria (1501 audits) than identified risk areas (1319 audits). Contrarily for other tax offices selection based on risk areas were the dominating one over other selection criteria. The offices for large taxpayers were carrying out tax audits in eight risk areas (sectors) and other tax offices – in twelve risk areas. Nearly 76.8% of additional tax liability in total was assessed in 2016 as a result of tax audits for which the selection was based on risk areas. The most tax audits were carried out in the risk area production of building materials and construction services (30,2% of all tax audits carried out in the risk areas). Other risk areas with a relatively high number of audits conducted were transport and logistics and wholesale trade in other products. In that areas tax audits were conducted only by other tax offices. The highest additional tax liabilities were assessed in relation to tax audits carried out in such risk areas as: wholesale trade in other products, activities of sales agents, trade in electronics. About 58,9% of additional tax liabilities assessed in 2016 resulted from these audits.

| Risk area | Share of tax audits detecting irregularity (%) * | | Average additional tax liability (PLN) | |
|---|---|---|---|---|
| | LTO | OTO | LTO | OTO |
| Production of building materials and construction services | 62.1 | 82.5 | 244.9 | 69.7 |
| Real estate | 45.2 | 61.4 | 419.9 | 135.0 |
| Consulting and other intangible services | 70.1 | 79.1 | 667.8 | 107.7 |
| Fuel | 50.0 | – | 3301.5 | – |
| Financial and insurance services | 69.2 | 81.3 | 559.5 | 71.3 |
| Health care | – | 80.6 | – | 21.0 |
| Transport and logistics | – | 74.3 | – | 48.6 |
| Automotive | – | 74.5 | – | 74.2 |
| Activities of sales agents | 64.0 | 71.7 | 11 801.5 | 679.7 |
| E-commerce and IT services | – | 72.8 | – | 69.1 |
| Trade in food and tobacco | – | 75.6 | – | 204.3 |
| Production and trade in metals and metal products | – | 74.1 | – | 172.8 |
| Trade in electronics | 65.0 | – | 6245.0 | – |
| Wholesale trade in other products | 70.1 | 68.0 | 2465.0 | 284.3 |

Table 7. Efficiency indicators of tax audits based on external risk areas identified in 2016 (only non-random audits)

* The ratio of the number of tax audits conducted in a specific risk area (sector) to the total number of tax audits for which the selection was based on risk areas conducted by tax offices in Poland.

LTO – Offices for Large Taxpayers

OTO – Other Tax Offices

Source: *Monitoring realizacji,* 2017, pp. 58 and 72.

The efficiency indicators of tax audits were very diversified depending on the risk area (Table 7). The ratio of tax audits detecting irregularity to the number of tax audits in total was for most of the risk areas higher in the case of audits carried out by other tax offices than in the case of audits carried out by offices for large taxpayers (with only one exception – risk area wholesale trade in other products). The mentioned indicator was the highest for tax audits conducted by offices for large taxpayers in the risk area production of building materials and construction services and the lowest for tax audits carried out by offices for large taxpayers in the risk area – real estate. Average additional tax liability assessed as a result of audits conducted by offices for large taxpayers exceeded those being a result of audits carried out by other tax offices. For audits conducted by offices for large taxpayers this indicator was the highest in the case of the sector covering activities of sales agents and the lowest in the case of production of building materials and construction services. Relatively high was this indicator for the risk area – activities of sales agents when audits were conducted by other tax offices.

**Discussions and conclusions**

Development of taxpayer selection methods is indispensable to ensure efficiency of tax audit authorities while dealing with tax non-compliance. Since accession of Poland to the European Union these methods are being continuously improved. Application of risk areas for tax audit purposes is considered to facilitate targeting of non-compliant taxpayers. This method is used not only in Poland but also in other European Union and OECD member states and forms a part of compliance risk management strategy implemented in the public administration in 2005. In the years following its implementation, the risk areas underwent several modifications. They were systematically updated and supplemented due to the identification of new non- compliance schemes.

Significant changes were made in 2014 when instead of risk areas defined based on different criteria (fraud schemes, economy sectors, taxation schemes, taxpayers' behavior patterns or features) the Ministry of Finance introduced their new categories with reference to specific sectors of economy. The refined National Compliance Plan included 14 risk sectors and specified patterns of non-compliance behavior typical for these sectors. In addition, risk areas were divided into those occurring in the case of specialized tax offices (tax offices for large taxpayers) and other tax offices. Assigning of those areas to different tax authorities depend on the frequency of risk materialization in relation to large entities and other taxpayers.

In the years 2005-2016, the number of tax audits based on risk areas in Poland has been consistently increasing. In 2016, risk-based selection was applied in the case of more than 60% of audits. It should be emphasized that the average additional tax liability as a result of a tax audit was higher in the case of audits carried out in the risk areas than in the case of other audits. The results of tax audits differed significantly according to the categories of tax offices and risk areas. Higher share of tax audits detecting non-compliance was observed for audits carried out by other tax offices than by the offices for large taxpayers. In turn, higher average additional tax liability as a result of tax audit used to be assessed by tax offices for large taxpayers. Considering specific risk areas in should be emphasized that higher average additional tax liability as a result of an audit is usually recorded in such sectors as activities of sales agents.

Selection methods for tax audit purposes are very rarely addressed in the economic literature. Further research is needed not only to evaluate their efficiency but also to design new methods and ameliorate the existing ones. Moreover, due to the fact that risk management in the public tax administration has become an international concern it is advisable to devise more and more harmonized solutions in order to efficiently cope with the phenomenon of tax non-compliance on the global scale.

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# Mindtree limited – defense against hostile takeover

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**Key Words**
Synergies in M&A, Hostile Takeover, Defense Strategies, Takeover Regulations, India Information Technology Sector

**Abstract**

*Mindtree Limited was founded in 1999 by ten individual promoters. It became the seventh largest information technology company in India by 2018. The success of the company was built on its deep domain expertise, key industry focus and long-lasting relationship with clients. The company had significant presence in emerging technologies including Internet of Things (IoT), cloud computing, big data analytics, cognitive computing and deep learning. The company entered alliances with Microsoft, SAP, Adobe, Amazon Web Services and Salesforce among others. The company was facing a hostile takeover bid from a large conglomerate – Larsen & Toubro (L&T). L&T was the leading engineering, technology and construction, manufacturing and financial services conglomerate of India. L&T had presence in the fast-growing information technology and technology services (ITTS) sector and was looking to consolidate its position through this acquisition. Mindtree was looking for ways to thwart the takeover bid from a determined acquirer with deep pockets.*

# Empirical analysis of volatility index with equity returns: Case of Asia-Pacific markets

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**Keywords**
Volatility Index, Asia-Pacific, Asymmetric, Lead-lag relationship, causality.

**Abstract**

*This study examines the relationship between volatility index and stock indices of Asia Pacific countries like India, Japan, Australia, Hong Kong, South Korea and China. This study reports an analysis based on daily closing prices of the stock indices and the percentage change in the volatility index for the above-mentioned countries. The data has been taken from year 2008 till 2018.To examine the asymmetric relationship between volatility index and equity returns, the study employs Quantile regression, Johansen's co-integration, Vector Error Correction Model (VECM), Impulse Response Function and Variance Decomposition.*

*The empirical results show that Japan and India have given better results as compared to Australia, South Korea, China and Hong Kong between 2008 and June 2018.Moreover the results show a significant but unidirectional relationship between stock returns and volatility change for the countries taken. Johansen's co-integration analysis demonstrates that stock return is co-integrated with the volatility index indicating long-run equilibrium relationship. VECM provides evidence of long-run causality from return to volatility. On the other hand, we used variance decomposition technique and impulse respond function to compare the degree of explanatory power of the volatility over stock return. The impulse response function results show that the shock takes four lags on an average to completely die out for one standard deviation shock in index return.*

*The present study provides evidence of lead-lag relationship between prices and index prices, wherein the underlying benchmark plays a highly significant role. The paper has important implications for investors who can engage in volatility trading or use VIX options for trading calls and active management of risks that cannot be hedged with exchange traded products.*

# The influence of social capital on the business performance of women-owned SMEs: The mediating effect of entrepreneurial orientation

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**Keywords**
Social Capital, Entrepreneurial Orientation, Business Performance, Women-owned SMEs, Entrepreneurship, Small and Medium-sized Enterprises

**Abstract**

*This conceptual paper examines the importance of the three dimensions of social capital to the performance of women-owned Small and Medium-size Enterprises (SMEs) mediated by the effect of Entrepreneurial Orientation (EO). The social capital will be measured using structural, relational and cognitive aspect, and the proxy of EO is proactiveness, innovativeness and risk taking. The respondents of this study were the women entrepreneurs in Sabah, Malaysia. This paper highlights the need to promote social capital and entrepreneurial orientation as a way of improving women-owned SMEs performance.*

## Introduction

Women-owned Small and Medium-sized Enterprises (SMEs) are one of the fastest growing entrepreneurial populations in the world (Brush & Cooper, 2012). Based on the Global Entrepreneurship Monitor (GEM) Women's Entrepreneurship Report 2016/2017, it was projected that in year 2016, there are 163 million women starting or operating new businesses in 74 economies around the world. Out of which, an estimated 111 million have established their businesses in the market. This proves that women entrepreneurs all over the world contributes to the growth and well-being of their societies by providing employment to their communities, incomes for their families and introducing product and services that brings new value to the world around them. Besides, the World Bank shows that women entrepreneurs contribute substantially to economic growth and poverty reduction even though they are limited by lack of capital and social constraints (GEM 2016).

It is widely accepted that entrepreneurship is a catalyst to economic development in all countries around the world including developing countries like Malaysia. Although women entrepreneur's plays a significant part in the entrepreneurial landscape, their number is still considered small as compared to businesses owned by men (Mutalib, et. al., 2015). This is reflected in the 2016 Economic Census by the Department of Statistics Malaysia, in which out of the 920,624 million business establishments, 186,930 million were owned by the women entrepreneurs representing only 20.6 percent of the total business establishment in year 2015. Even though the number of women entrepreneurs is still considered small, it is however encouraging to observe that women no longer adhere to the stereotype that only men can be the breadwinner in the family (Fabeil, Toh, and & Sung, 2017).

The Gender - Global Entrepreneurship and Development Index (GEDI) in its 2013 Executive Report found that globally, women face constraints in terms of access to resources, which continues to affect women's ability to start and grow businesses as compared with their male counterpart. This is also supported by study by Bahari, et al. (2017) who found that women may not engage in entrepreneurship to the same extent as their male counterpart because of different access to various forms of capital. While other researchers insisted that the main differences between man and woman entrepreneur are the level and extent of their networking strategy (Greguletz, et. al., 2018 and Shim & Eastlick, 1998). According to Greguletz, et. al. (2018), work–family conflict and homophily acts as a barrier to women's effective networking, especially in terms of accessing networks. In addition, women's personal hesitation due to their inclinations to avoid taking advantage of their social networks and underestimating their own value in professional contexts are the reasons why women build fewer effective networks than men. Besides,

women entrepreneurs are also found less likely than men to personally know someone who started their own business (Koellinger, Minniti, and Schade, 2013). Women entrepreneurs also tend to spend less time developing and maintaining contacts due to family responsibilities (Munch, McPherson, and Smith-Lovin, 1997; Cromie and Birley, 1992) and often prioritise networks emanating from family and friends over professional networks (Orhan, 2001). Besides, some studies also found that compared to men, women entrepreneurs exhibit different entrepreneurial behaviour or entrepreneurial orientation dimensions in pursuing their business successfully (Nasip, Fabeil, Buncha, Nga, Hui, Laison, & Jr, 2017). Given the unique nature of women entrepreneurs when considered in relation to their male counterparts, investigating factors specifically affecting their performance represents an important area of research (Alliance, 2016). The general argument is that more resources accrue to entrepreneurs that are better connected (Hoang and Antoncic, 2003).

According to Nahapiet and Ghoshal (1998), social capital comprises the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital is considered as essential to a firm's success as it allow the firm to develop a competitive advantage through various mechanisms. For instance, Adler and Kwon (2002) founds that personal networks are a source of resources which assist entrepreneurs to identify opportunities (Bhagavatula, Elfring, van Tilburg, and van de Bunt, 2010), organise resources (Batjargal, 2003) and build legitimacy for their business (Elfring and Hulsink, 2003). Research also associate the degree of advancement of the entrepreneur's social capital to the course of opportunity discovery and exploitation (Manev, Gyoshev, & Manolova, 2005). Social capital expedites the access to information, and when entrepreneurs have prior information, they are more likely to discover and take advantage of entrepreneurial opportunity (Shane and Venkataraman, 2000). Networking with resource providers facilitate the acquisition of resources and enhance the probability of opportunity exploitation (Davidsson and Honig, 2003). Therefore, this study imply that women-owned SMEs may possess unique entrepreneurial orientation dimensions (proactiveness, innovativeness, and risk taking) that enhance their business performance through network affiliations for some aspects of social capital (structural, relational and cognitive) which may influence their business performance.

The subsequent parts of the paper are organized as follows: - the next section describes the relevant literature while Section 3 describes the methodology used in the research. Finally, the last section discusses and concludes the research.

**Literature Review**

In Malaysia, the National SME Development Council categorized SME's based on two criteria, namely sales turnover and employment. Table 1 below summarise the different category of SME's for each specific sector.

Table 1: Definition of SME's by category

| Size | Micro | | Small | | Medium | |
|---|---|---|---|---|---|---|
| | Sales Turnover | Employees | Sales Turnover | Employees | Sales Turnover | Employees |
| Manufacturing | <RM300,000 | < 5 employees | RM300,000 to < 15 million | 5 to < 75 employees | RM15 million to < 50 million | 75 to < 200 employees |
| Services & other sectors | | | RM300,000 to < 3 million | 5 to < 30 employees | RM3 million to < 20 Million | 30 to < 75 employees |

Note: < is less than
≤ is not exceeding

Source: SME Annual Report 2017/18

Based on the SME Annual Report 2016/17, women-owned SMEs are defined as women holding a minimum of 51 per cent of the equity, or the Chief Executive Officer or Managing Director shall be a woman which owns at least 10 per cent of the equity. In year 2015, women-owned SMEs accounted for about 20.6%of total SMEs in Malaysia. That is, an increase of 46.7%, from the one recorded in year 2010. In terms of breakdown by sectors, majority 92.7% of women-owned SMEs are engaged in the services sector, followed by the manufacturing sector (5.1%).

Most empirical researchers have varied definition and measurement of business performance. Business performance can be estimated in term of subjective and objective measurements. Generally, there are three types of indicators used in assessing business performance which includes growth, profitability and market share as expressed by either financial or non-financial indicators (Nasip et. al., 2017). According to Covin and Slevin (1991), entrepreneurial firms are more focused on its profit margin and growth rate which can be estimated by financial indicators of return on investment and sales growth. Wiklund (1999) further added that both financial and non-financial aspect of performance complement each other and indicate the actual performance of business. Hence, measurement of business performance shall not focus on financial aspect only while neglecting the other measures that indicate the business success as well. Despite various definitions of business performance in the literature, this study will be considering business performance as success from an economic point of view since business performance is generally measured from the economic perspectives of increase in profits and/or growth in sales or employees (Buttner & Moore, 1997).

**Social Capital Theory**

It is widely acknowledged in the literatures that social capital provides a valuable source of information benefits that is, "who you know" affects "what you know" (Nahapiet and Ghoshal; 1998). The theory of social capital describes how structural and social interaction and cooperation shape the social capital which eventually affects business performance (Mamun*, Muniady, Permarupa, Zainol, Nawi, & Malarvizhi, 2016). Taylor, Jones, and Boles (2004) defined social capital as the productive value that accrues to individuals and groups because of the social network relations amongst them. While, Nahapiet and Ghoshal (1998) describe social capital as comprises of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. That is, social capital represents the capability to access resources via social connections (Manev et al., 2005). Social capital plays a significant role in entrepreneurial activities since it is considered as a socio-economic process which depend on the circumstances and social context from two points of views; firstly, entrepreneurs are considered as products of their social environment. Secondly, entrepreneurship is a social activity and existence, or lack of social ties and connections affects the nature of businesses (Anderson and Miller, 2003). According to Galaskiewicz and Zaheer (1999), social capital that is embedded in entrepreneurs' external connections is considered as unique resource, which is invisible to competitors, and difficult to imitate.

There are three dimensions of social capital that is, i) relational which focused on the development and types of personal relationship through a chain of interactions. It also covers the characteristics and qualities of individual relationship, ii) structural which concerns the properties of the social system and of the network of relations. It assesses whether there exist network ties between units, how does it look like, and how dense is the hierarchy of the network structure as well as the connectivity of the linkages, iii) cognitive which refers to the shared representations, interpretations, and systems of meaning among parties. It facilitates mutual understanding of goals and provide a proper method to interact with others (Nahapiet and Ghoshal, 1998).

**Resource Based View Theory**

The resource-based view (RBV) theory states that firms' performance will improve due to capitalizing its resources which are rare, valued and difficult to replicate and substitute (Barney, 1991). This theory is premised on the strategic importance of a firm's resources and capabilities (Brush and Chaganti, 1999). The RBV views a business as a collection of resources, whose features considerably affect its competitive advantage and consequently performance (Barney, 1991). According to this theory, the performance of a firm is best explained in terms of the resources, skills and assets it possesses (Lerner and Almor, 2002).

Entrepreneurial orientation may also contribute to performance by enhancing a firm's capability to recognize innovative opportunities which may offers profitable returns, secure first-mover advantage and target premium market segments (Lumpkin and Dess, 1996; Wiklund and Sheperd, 2005). Nonetheless, literature also shows that firms may not often be able to translate an entrepreneurial orientation into enhanced performance due to a lack of strategic resources (Hitt, Bierman, Shimizu, and Kochhar, 2001).

**The Effect of Social Capital on EO and BP**

Social capital helps entrepreneurs to identify opportunities (Bhagavatula et al., 2010), organise resources (Batjargal, 2003), improve social entrepreneurship (Mair and Marti, 2005), build legitimacy for their business (Elfring and Hulsink, 2003), lead to an entrepreneurial orientation (EO) in a firm (De Clercq, Dimov, and Thongpapanl, 2013) and facilitate access to financial and useful information (Omrane, 2015) which eventually will lead to improve business performances. Indeed, social capital plays a vital role to facilitate value creation, competitive advantage, knowledge sharing, and acts as a management tool for fulfilling firm's goals more effectively and with less cost (Abili and Faraji, 2009). This article focuses on the work of Nahapiet and Ghoshal (1998), in which it refers social capital in three main aspects that is, relational, cognitive, and structural dimension.

A study on the relationship amongst the above three dimensions of social capital by Carey, Lawson, and Krause (2011) indicates that structural dimension enhances trust and reciprocity in relational dimension, while cognitive dimension influences the level of relational dimension. Besides, the study also found that in the context of buyer innovation improvements, the relational dimension mediates the relationship between cognitive dimension and firm performance, and relational dimension partially mediates the influence of structural dimension on firm performance. In this study, the three dimensions, namely structural, relational and cognitive aspect were used to measure social capital. These dimensions have a positive impact on EO and FP. Therefore, it can be hypothesized that:

Hypothesis 1: There is a positive relationship between social capital and women-owned SMEs business performance.

**The Mediating Effect of EO**

Entrepreneurial orientation (EO) refers to "processes, practices, and decision-making activities that lead to new entry" (Lumpkin & Dess, 1996). There are three dimensions of EO which has been used consistently in the literature namely i) proactiveness which indicates the managers' vision regarding future wants and needs in the market (Shane & Venkatraman, 2000), ii) innovativeness which refers to the firm's efforts to experiment with and develop new products and services designed to meet present or future market demands (Lumpkin & Dess, 1996), and iii) risk taking which represent the behaviour of the manager with regards to the money, effort and time invested even before financial returns are realized (Venkatraman, 1997). Such three dimensions have been noted as the essential dimensions of entrepreneurship and being considered to give greatest impact in firm's growth (Miller, 1983; Lumpkin & Dess, 1996). Therefore, pro-activeness, innovativeness, and risk taking are the dimensions in EO that will be used in this study.

According to Chirico, Sirmon, Sciascia, and Mazzola (2011), EO is the channel in which managers use systems of practices and managerial styles to guide how resources are utilized. Similarly, Covin and Slevin (1991) stated that EO is resource-consuming and the firm's capacity to undertake entrepreneurial orientation hinges on its resources (e.g., social capital) as resources afford bases for any organizational actions (Sirmon, Hitt, and Ireland, 2007). Hence, social capital being one of the unique firm resources, need to be orchestrate and institutionalized into actions in order to enhance firm performance (Brush, Greene, and Hart, 2001). Social capital which hinges on high-quality relational resources that arises from interactions among exchange associates, places a firm in a context that is particularly conducive for generating new ideas and knowledge (e.g., EO), that managers may mobilize to exploit opportunities and enhance firm performance (Nahapiet & Ghoshal, 1998).

Hence, firms with social capital resources have higher propensity to undertake innovative, proactive and risky activities which subsequently results in enhance firm performance (Covin & Slevin, 1991). Thus, it is hypothesized that:

Hypothesis 2: Entrepreneurial orientation mediate the relationship between social capital and women-owned SMEs business performance.

**The Effect of EO on Business Performance**

There has been extensive research conducted to examine the relationship between EO and business performance however the empirical findings are inconclusive. Some studies supported the facts that EO impact performance positively (Wang, 2008; Davis, Bell, Payne, and Kreiser, 2010; Al-Swidi & Mahmood,

2012; Anderson & Eshima, 2013), while others confirmed that the two variables were not correlated at all (Andersén, 2010; Messersmith & Wales, 2011). In other cases, some even found that the dimensions of EO supported performance partially (Ambad & Abdul Wahab, 2013; Kreiser, Marino, Kuratko, & Weaver, 2013; Musa, Ghani, & Ahmad, 2014). Similarly, studies on the relationships between EO and women-owned SMEs performance showed conflicting results as well (Ali & Ali, 2013, 2014; Hanafi & Mahmood, 2013). Also, there is a little concern on how EO determines the business performance of women-owned SMEs in Malaysia, despite the growing number of women entrepreneurs and the vital effect of EO on their success. Thus, it is postulated that: -

Hypothesis 3: There is a positive relationship between entrepreneurial orientation and women-owned SMEs business performance.

**Data and Methodology**

This study is to determine the relationship between the constructs of social capital (structural, relational and cognitive) towards the women-owned SME's business performance mediated by entrepreneurial orientation (proactiveness, innovativeness, and risk taking). The population of this study refers to the women entrepreneurs in SME's operating at Kota Kinabalu, Sabah. The sampling frame for this study includes the list to be retrieved or provided by several agencies such as Sabah Women Entrepreneurs & Professionals Association (SWEPA), Sabah Women's Affairs Department (JHEWA) and Kadazandusun Chamber of Commerce and Industry (KCCI).

A set of questionnaires will be distributed through email and personally administered survey. All construct measures in this study will be adopted from existing tested multi-item 7-point Likert scales in previous research. The three dimensions of EO will be adopted from EO scale of Hansen et al. (2011) in which innovativeness and proactiveness were both measured via three-item measures, while risk-taking was assessed via a two-item measure. The measurement of dimension in social capital such as structural social capital will be adapted from Chiu, Hsu and Wang (2006) and Chen (2007), relational social capital will be adapted from Chiu et al. (2006) and Wasko and Faraj (2005), while cognitive social capital will be adapted from Tsai and Ghoshal (1998). Business performance was measured by using questionnaires from Ramayah et al. (2011).

Data analysis will be carried out by using a structural equation model (SEM) which is a form of statistical models that seek to explain the relationships among multiple variables (Hair, Black, Babin, Anderson, and Tatham, 2010) and has become an important tool in applied multivariate analysis for theory testing and causal modelling (Reisinger & Mavondo, 2007). SEM is a statistical technique that combines the aspect of multiple regression and factor analysis to estimate a series of inter-related dependence relationships simultaneously (Hair et al., 2010; Gefen, Straub, and Boudreau, 2000). This enables researchers to answer a set of interrelated research questions in a single systematic and comprehensive analysis by modelling simultaneously the relationships among multiple independent and dependent constructs (Gefen et al., 2000). An overview of the research framework is depicted in the diagram below.

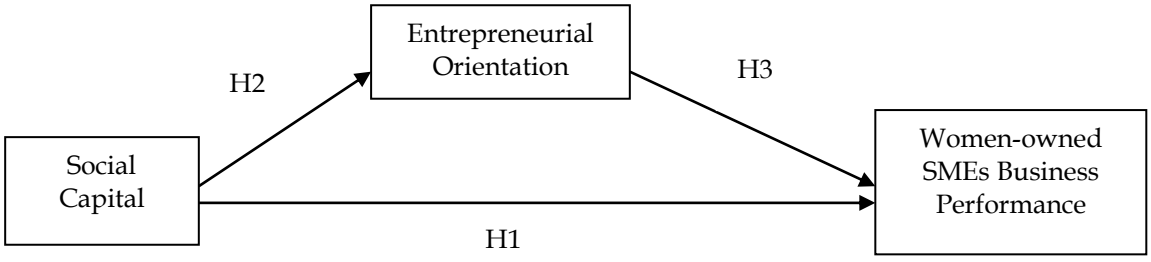


Figure 1: Research Framework

SEM techniques can be considered as the second generation of multivariate analysis (Fornell, 1987) which allows the modelling of multiple independent and dependent constructs simultaneously hence enabling researchers to analyse more complex models as compared with first generation techniques (Gefen et al., 2000). In addition, second generation techniques facilitate researchers to construct unobservable variables (latent variable) through indicators and their measurement error in the same

model (Haenlen & Kaplan, 2004; Chin, 1998). The combined analysis of the measurement and the structural model simultaneously with errors of the observed variables enabled a more vigorous analysis of the proposed research model (Bollock et al., 1994).

**Discussion and Conclusion**

This study will be conducted to gain a better understanding of the relationship between the different dimensions of social capital, entrepreneurial orientation, and business performance. The specific research objectives of this study are a) to examine the relationship between social capital (structural, relational and cognitive) and business performance among women-owned SMEs in Kota Kinabalu, Sabah, and b) to determine how entrepreneurial orientation (proactiveness, innovativeness and risk-taking) mediate the social capital in women-owned SMEs business performance, as well as c) to examine the relationship between entrepreneurial orientation and women-owned SMEs business performance.

There is considerable evidence that supports the idea provision of network development opportunities for women-owned SME's could improve business performance by connecting women to valuable business resources and overcoming inequality caused by structural gender discrimination (Adler and Kwon, 2002; Bhagavatula et al. 2010; Elfring and Hulsink, 2003; Hoang and Antoncic, 2003). Likewise, some studies supported the facts that EO impact performance positively (Wang, 2008; Al-Swidi & Mahmood, 2012). Similarly, there is growing acceptance among scholars that social capital has an impact on the EO which contribute to performance of women-owned SME's (Nasip et. al., 2017; Manev et. al., 2005). By understanding the impact of entrepreneurial orientation dimensions and social capital towards business performance, women-owned SME's can plan their strategy effectively to achieve their business goals. Moreover, there is a need to understand the important roles of each dimension of entrepreneurial orientation such as the proactiveness, innovativeness and risk taking and social capital dimensions, namely, structural, relational and cognitive, in order to enhance the firms' business strategy. This paper strives to provides evidence about what makes women businesses grow successfully. The results are useful to provide insights to the Malaysian government to improve support measures that are specifically tailored to women entrepreneurs by providing the right incentives to their enterprises. Importantly, this study will add to the empirical evidence supporting the theory of social capital as explained by Nahapiet and Ghoshal (1998) in which social capital build from structural, relational and cognitive dimension effect firm performance.

With this study, it is anticipated that women entrepreneurs, and policy makers will put more emphasize on the potential of social capital in enhancing entrepreneurial competencies, which ultimately leads to an enhance business performance among women-owned SME's in Malaysia. Women entrepreneurs have to realize and take advantage of the network ties and network density where knowing the right people among key business players and knowing how to reach them is important, as well as being active in formal and informal networks and having common acquaintances is crucial and will have effect on their business performance.

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# Social capital of actors in agribusiness cacao: case study in the district of Ganrangkeke of Bantaeng Regency

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**Keywords**
Cocoa, Agribusiness, Social Capital

**Abstract**

*Agricultural product trading activities are not fully integrated into the producers so that the role of social capital among agricultural actors become very important to help encouraging bargaining positions of agricultural actors to be better. In addition to the production and trading activities of agricultural products, social capital is also an important factor that agricultural actors should have to do innovations. This study aimed to analyze cocoa agribusiness and the relationship between social capital and cocoa agribusiness in the Gantarangkeke district, Bantaeng regency. The research method is a combination of quantitative and qualitative methods. The data collection was taken by surveying 100 respondent of farmers. The data analysis used linear regression analysis. The results of the study indicated that the application of cocoa agribusiness starts from the input provider subsystem, on-farm subsystem, down- stream subsystem, and supporting subsystems are at a good level. The influence of social capital consists of trust, participation, reciprocity, and norms with agribusiness is very strong overall with a significance of 0.0000 with a value of R 0.891 with a percentage of 79,4%. Thus, to develop cocoa agribusiness requires good social capital among cocoa agribusiness actors.*

# Behavioural intention on e-government adoption: The moderating effect of technology readiness

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**Key Words**
Behavioural Intention, E-Government, Technology Readiness, UTAUT, UTAUT2.

Abstract

*This conceptual research paper is about the moderating effect of technology readiness on the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, trust, habit and behavioural intention to adopt the e-government services in Malaysia. Previous studies have been emphasising too much on factors that influence the behavioural intention to use e-government services; however; there is no study yet done on the role of technology readiness, especially on its moderating effects. This proposal will use the UTAUT2 theory as the basis for the formation of the conceptual theoretical framework. The respondents will be the Malaysian citizens. This research will be carried out with a surveyed-based quantitative approach. The SPSS version 23 will be used at the preliminary stage for screening and cleaning of data collection. It will then be transformed into csv form for the measurement model and structural model analysis using the Partial Least Square-Structural Equation Model (PLS-SEM).*

## 1. Introduction

Behavioural intention and actual use of behaviour on technological advancement have been the focal point of research discussion of late. However, further research is still needed since the findings of the previous research are inconclusive. Behavioural intention has long been empirically proven to be a significant predictor to user intention to adopt and use a new technology (Ajzen, 1991; Sheppard et al., 1988; Taylor and Todd, 1995b; Venkatesh et al., 2003; Almalki, 2014; Lean et al., 2009). According to Fishbein and Ajzen (1975) the main determinant of a person's behaviour is behaviour intent. A person will take into consideration of what would be the implication of his/her action before she/he decides to actually engage or not in certain behaviour. Ajzen and Fishbein (1980) posits "that a person's attitude is determined by his/her perception about the expected outcome of performing the behaviour and the assessment of the consequences. Hence, if a person's behaviour intent is strong, then it is highly expected that the behaviour will be actually performed".

Behavioural intention is about the measurement of the strength of one's intention to perform specific behaviour which determines the usage behaviour and user adoption. Sabah (2016) in his study, defined Behavioural Intention as a measurement of an individual's commitment towards utilizing a new technology system of ICT. Venkatesh et al. (2003) defined behaviour intention as "a measure of the strength of individual's intention to perform a specified behaviour" and is regarded as a key criterion for user's acceptance in use behaviour. Hence, it is important to identify the underlying factors that affect the formation and change of behavioural intent.

This research will be based on the UTAUT2 theory, the extension of UTAUT theory with slight modification by excluding some of the existing independents and moderating variables while injecting new ones at the same time. The UTAUT is the theory that combined eight theories of ICT adoption, making it a suitable, valid, recent, and reliable model of technology adoption to accommodate a high percentage of variances (Alawadhi and Morris, 2008). The original UTAUT Model could explain 56 percent of the variance on Behavioural Intention to Use and about 40 percent variance on the actual usage (Venkatesh et al., 2003). UTAUT2 has improved the variance up to 74 percent and use of technology to 52 percent respectively (Slade et al., 2013; Venkatesh et al., 2012). The objectives of this study are to examine the technology readiness moderating effect on the relationship between the performance expectancy, effort expectancy, social influence, facilitating condition, trust, habit and behavioural intention to adopt e-Government services in Malaysia.

**2.0 Literature Review**

Previous studies proved that there are many factors significantly affecting the behavioural intention to adopt e-government services. Among them are lack of awareness (Mitrovic and Bytheway, 2009; Mofleh and Wanous, 2008; NATION, 2014; Rehman et al., 2012), digital divide (Mohamad Farouk and Shafee, 2005), trust (Alaiad and Zhou, 2013) self-efficacy and experience (L.a Carter and Christian Schaupp, 2008) hedonic motivation, performance expectancy, enriching system use, perceived economic benefit, perceived social benefit, enriching use behaviour (Liew, Vaithilingam, & Nair, 2014), trust and flow experience (Oh and Yoon, 2014) job fit, attitude, self-efficacy and anxiety (Xiong, Qureshi, & Najjar, 2013), trust of Internet and trust of intermediaries (Weerakkody, El-Haddadeh, Al-Sobhi, Shareef, & Dwivedi, 2013), involvement (Shibl, Lawley, & Debuse, 2013), perceived financial control and ease of navigation (Saeed, 2013), self-efficacy (Mckenna, Tuunanen, & Gardner, 2013) and many more. Similar study on Malaysian perspective by Taiwo, Downe, and Loke (2014,) found that facilitating condition, effort expectation, performance, risk taking propensity, disposition of trust, institutional based trust, trust belief and attitudes to computer are significantly affecting the behavioural intention to adopt the e-governmental services.

Extensive researches have been done to understand the behavioural intention in adopting an e-government service around the world as well as on Malaysian context. Nevertheless, there is no specific model of e-government that could be universally and generally accepted to explain how an e-government is well adopted and used. This is due to the fact that factors such as socio-economic norm, economic, and political factors have affected the design of the system, and the citizens' decision to adopt e-government models (AL Mansoori, 2017). The success of an e-government initiative is determined by its use, and it is measured by its adoption (Xie, Song, Peng, & Shabbir, 2017). On account of that, new models of adoption keep coming up to explain the scenario.

Although studies on e-government adoption have been extensive, most of them are focusing on the technical and management factors point of view, known as the supply side of an e-government. However, there are fewer studies on individuals technology readiness to embrace technological innovations (Celik and Kocaman, 2015). Researchers around the world have overlooked that e-government is actually involving change that was induced by information and communication technologies (ICT) (Nograsek, 2011) and therefore the effect of it—the change -- should be dealt with from the readiness perspective point of view (Smith, 2005). Thus, there is a profound need for a research to be carried out from the human factors perspective, especially from the psychological elements of a user, the readiness of embracing an ICT-technology innovation (Alsaif, 2014). Readiness, on the other hand, has been proven by Smith (2005) to be the biggest obstacles to achieving change. Smith (2005) further argues that failure of an individual readiness may result in managers spending significant time and energy to dealing with resistance to change.

What stands out is that the extensions of research on e-government adoption researchers have given less emphasis on the effect of technology readiness in adapting e-government initiative in the process of understanding the adoption issue. With the growing implementation of e-government innovative, technology readiness has become one of the key performance measurement tools in making sure that an e-government is managed and implemented successfully (Dilip Potnis and Pardo, 2011). On account on this, it is believed that the technology readiness could have helped enlighten the adoption of e-government services issue.

As far as the literature review is concerned, it was found that previous studies are lack of a comprehensive view on the role of technology readiness as the moderating variable on e-government adoption studies. For example, a review and a synthesis paper by Venkatesh et al. (2016) on the original UTAUT revealed that from 2003 to 2014, the UTAUT model had been cited generally for 1,205 times, applied 12 times, integrated 13 times with another model, and had been extended for 37 times. Out of the 37 times of extension, 17 studies involving the new moderation mechanism, 23 new endogenous, and 11 exogenous mechanisms respectively. Of the 17 studies with the 17 new moderations mechanism, none of the studies take the academic contributions of technology readiness as the moderator except two studies (not part of the 17 list) by Borrero, Yousafzai, Javed, and Page (2014) on students' use of social networking site (SNS) for expressive participation in the Internet Social Movement (ISMA) and by Tsourela and

Roumeliotis (2015) on consumer acceptance and actual use on Technology-based services which includes e-government, in Greece.

On the literature review of UTAUT2, there is no study yet done on the technology readiness as the moderating variable from the perspective of citizens on e-government especially in Malaysia's perspective. This strengthen the researcher's argument that there is a gap of knowledge on the possible moderating effect of technology readiness on the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, trust, habit and behavioural intention on the Malaysian e-government context and therefore warrants such research to be carried out. In a study by Kalamatianou and Malamateniou (2017) on UTAUT2's suitability on e-government in Greece, they have found that the proposed model of UTAUT2 with four additional criteria to be well-fitted to explain the success of an e-government project. This further strengthen the choice of the underpinning theory of UTAUT2 in this proposed research. The following is the conceptual framework of this study.

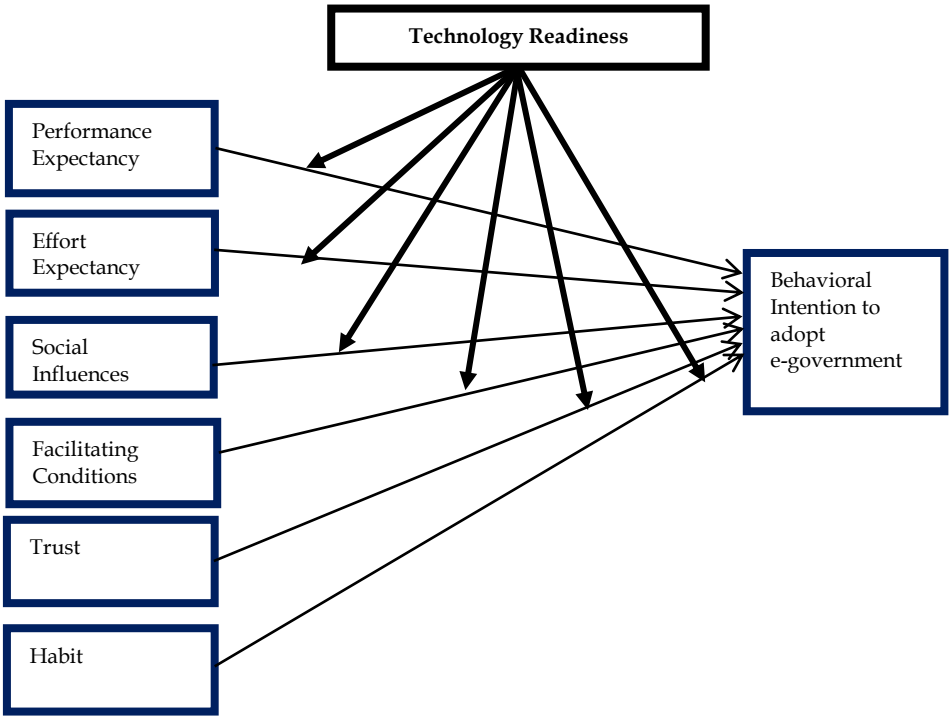


Figure 1 The conceptual Framework of The Research

**3.0 Methodology**

This research will adopt the quantitative method. The questionnaire will be compiled from the past literature with slight modification to suit the objectives of this research and to maintain its reliability and validity construct. Each construct will be measured using the 5-likert-scale (ranging from 1-strongly disagree, to 5-strongly agree). Likert's 5 points scale is a proper choice for this study since the numbers of items were not too many and it did not burden the respondents to participate and give reliable answers.

This research will use the purposive sampling technique. Purposive sampling, also known as judgmental, selective, or subjective sampling, is a form of non-probability sampling in which researchers rely on their own judgment when choosing the respondents. However, this sampling method requires researchers to have prior knowledge about the purpose of their studies so that they can properly choose and approach eligible participants. This makes the result more representative to the whole population and yielding good result for generalization (Mahmud, 2011). Purposive sampling is a sampling technique where the target population is screened. Respondent the will be selected based on the main criteria defined beforehand (Sekaran and Bougie, 2013). The questionnaire will be distributed manually and will be ministered face-to-face to minimize misunderstanding and ambiguity (Al Athmay, 2015). The respondents for this proposed research would be the baby boomers of Malaysian citizen. Baby boomers are those born between 1946-1964 (Berraies, Ben Yahia, & Hannachi, 2017; Wilson, Hallo, Mcguire, Sharp, & Mainella, 2018). However, this definition of cohort is from the perspective of the American citizens. In

Malaysia baby boomers are those citizens who were born in the year 1946-1965 (Ting, Lim, Cyril, Run, & Koh, 2018). The Malaysian total population as of now is 32 million.

Size of sample is crucial when comes to carrying out an analysis of statistic to make inferences about the population. Insufficient sample size may not reveal a significant effect for the population inferences while at the same time committing Type II error. Hence, for this purpose the researcher will use the G*Power technique. The G*Power sampling technique which emphasising that the sample size should be equal to the larger of (1) 10 times the largest number of formative indicators used to measure a single construct, or (2) 10 times the largest number of structural path directed at a particular construct in the structural model as shown in the Figure 1 (Hair Jr, Sarstedt, Hopkins, and G. Kuppelwieser, 2014). Based on the G*Power's rule of thumb and based on the proposed theoretical framework (which consists of 12 constructs) the minimum size sample would be 184 respondents. According to Comrey and Lee (1992), the sample size of 100 is considered poor, 200 is fair, 500 is very good. Kline (2011) who once suggested that for the analysis using the Structural Equation Model (SEM), a minimum of 200 respondents is a good sample size (Shareef, Kumar, Kumar, & Dwivedi, 2011)..

For this proposed research, PLS-SEM statistical analysis will be used. The application of PLS-SEM has been growing exponentially in the past few years, cited for more than 800 times (according to google scholars), and has been published and become the number one of the highest impact articles published in the top 20 marketing journal. PLS-SEM provides numerous advantages to researchers working with structural equation models. Besides, other main reason why PLS-SEM has been widely used of late was due to its attribution to: (1) non-normality data; (2) the requirement of small size sampling; and (3) formatively measurement construct (Hair Jr et al., 2014). Other than that, compared to CB-SEM, PLS-SEM is the right choice since it suits with the main objective of this research which involves prediction and explanation of the target construct (Hair et al., 2017a). For the purpose of analysing the proposed theoretical model, the path model estimation would undergo the measurement model and the structural model.

The measurement model deals on how the latent variables are being measured. However, to operationalize the construct involved in this study and in order to preserve the internal consistency and the content validity and reliability, the measurement of variables is adopted (and modified) from the previous research especially from the relevant studies of UTAUT and UTAUT2 (Farooq et al., 2017; Lallmahomed, Lallmahomed, & Lallmahomed, 2017). For instance, performance expectancy, effort expectancy, social influence and facilitation conditions were adapted from Venkatesh et al., (2003), technology readiness from Lescevica et al., (2013); Lin et al., (2015); Parasuraman, 2000; Rojas-Méndez et al., (2017), trust from (Bélanger & Carter, 2008; Lemuria Carter & Bélanger, 2005) habit from (Limayem and Hirt, 2003; Venkatesh et al., 2012; Vinnik, 2017) and behavioural intention from Lemuria Carter and Bélanger, (2005) and Venkatesh, Thong, and Xu, (2012).

Reliability test is an important test in making sure that the measurement of research is free from error, consistent, and reproducibility. If a test finding is inconsistent, it may be unethical to take substantive actions based on the test. Validity test on the other hand is another crucial test when comes to research. Validity test is important because it makes sure what is supposed to be measured is measured. The rule of thumb is that the higher the test, the higher the possibility the result is closely linked to the intended focus of test. There are many ways of testing the reliability and validity of which depending on the type of measure. Basically measurement model involves two ways: the formative measurement model and reflective measurement model (Hair, Hult, Ringle, and Sarstedt, 2017b; Mohd Hanafi and Puteh, 2017). For the reflective measurement model, it is assessed on their internal consistency reliability and validity. The specific measures include the composite reliability, convergent validity, and discriminant validity. On the other hand, the reflective measurement model cannot be applied to the measurement model of formative. For the formative measure, the most important thing to be made sure is the content validity before data is collected and the PLS path model is estimated. Once it is estimated, the convergent validity test, the significance and relevance of indicator weights test and the presence of collinearity among the latent indicators analysis will be done (F.Hair et al., 2017b).

The structural model measure will only be done once the reliability and validity of the model construct have been established. The PLS-SEM assessment of the structural model involves the model's capabiity to predict the variance in the dependent variable of the proposed model. The primary analysis if

the structural measure is the coefficient of determination, the $R^2$ value as well as the size and significance of the path coefficients. The other evaluations of PLS path evaluation would include the $f^2$ effect sizes, the predictive relevance $(Q^2)$, and the $q^2$ effect size(F.Hair et al., 2017b). For the moderation test, it will be done as part of the PLS-SEM analysis through the structural model analysis. There are three approaches that researchers can employ to examine interaction terms (Moderator Analysis). There are Product-Indicator Approach (Chin, Marcolin, & Newsted, 2003), Two-Stage Approach (Chin et al., 2003)and Orthogonalizing Approach (Henseler & Chin, 2010).

**4.0 Conclusion**

This conceptual paper is a research that examining the moderating effect of technology readiness on the behavioural intention to adopt the e-government services. The findings would lead the researcher to draw conclusions about what are the factors that researchers have been failed to address when comes to understanding the adoption of e-government services, especially on the role and effect of technology readiness. Academically, the findings will be another contribution to the body of the literature on the adoption of e-government services. Practically, it would benefit the stakeholders and the policy makers to systematically plan on how best to increase the adoption rate of e-government services in Malaysia for full optimisation of the initiative.

**5.0 Recommendations for Future Research**

Based on the literature the following are the recommendations for future research. Recommendation 1: Further research should be conducted to test whether experience acts as an influential factor on Behavioural Intention. Recommendation 2: Further research should take awareness, attitude, anxiety and security that could have improved the variance in explaining the behavioural intention. Recommendation 3: Further research should take gender and age. The inclusion may have better insight on the effect of age and gender on the independent variables to the dependent variable especially the effect of age and gender on technology readiness. The young generation maybe have strong citizens technology readiness in comparison to the older generation. The same applies to gender where difference sex may have difference level of technology readiness.

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# The effect of person organization fit on intention to leave among academicians in private universities in Malaysia

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**Keywords**
Person-Organization Fit (POF), Turnover Intentions (TI)

**Abstract**

*The aim of this study is to find the relationship between person-organization on turnover intention amongst the lecturer in private universities in Malaysia. The questionnaire-based survey will be conducted to collect the data for the study. The sample size of the study is 107 lecturers from 13 different private universities in Malaysia.*

## Introduction

Employee turnover has been and remains an important topic of study even after hundred year of research and thousands of published studies (Hom, Lee, Shaw, & Hausknecht, 2017). High voluntary turnover is negatively related to overall organisational effectiveness and success and most importantly, it is costly for organisations (Han, Bonn, & Cho, 2016; Holtom, Mitchell, Lee, & Inderrieden, 2005). Despite its unsavoury consequences, the literature continues to indicate high turnover intention among highly skilled workers universally. The U.S. Bureau of Labor Statistics (BLS, 2017) reported 3.2 million voluntary quits in May 2017, about a 10.3% increase from 2.9 million quits in July 2016. Asian business organisations have been no exception, as voluntary turnover rate is continuously increasing. According to 2017 Hays Asia Salary Guide, 34% of respondents were actively looking for a new job and of those individuals, 25% plan to change jobs in the next 6 months (Hays, 2017). The education sector is also no exception, according to National Higher Education Research Institute (2004), the turnover rate of lecturers in public universities and private universities/colleges was 18.18% and 45.45% respectively in 2004. The education sector in general has also been reported to have a high turnover rate. According to the Malaysian Employers Federation (MEF), the average turnover rate for the education sector was 29.2% in 2011; it ranked third among all the sectors. These statistics indicate that voluntary turnover is an obstacle against businesses achieving their strategic objectives.

A solid body of research indicates person-organization fit (P-O fit) as the key function related to a broad range of positive workplace outcomes for both employees and employers (KristofBrown, Zimmerman, & Johnson, 2005; Resick, Giberson, Dickson, Wynne, & Bajdo, 2013). Person-environment (PE) fit is defined as the agreeableness that occurs when individual and work environment characteristics are well matched (Kristof-Brown et al., 2005). Person-environment fit is the match between an employee's individual characteristics and his work environment. It is the well-known subject area of human resource and organizational behaviour research as it relates to different prominent outcomes in different phases of individuals' work–life cycle. In the beginning of their career, individuals pursue and choose those professions which might be fit with their self-concepts as well as their primary interests (Holland, 1985). Likewise, in the course of the employment search and selection processes, applicants choose between the available alternatives according to their perceived fit with certain occupations along with organizations (Cable & Judge, 1997). In the long term, individuals' fit with different aspects of the work environment influences many attitudinal and behaviour outcomes, moving over wide areas through job and career satisfaction to turnover goal and actual turnover behaviour (O'Reily, Chatman, & Caldwell, 1991). Research on person-organization fit indicates that organizational values are a good predictor of job choices and that individuals preferred jobs or careers in organizations which displayed values like their own (Schneider, 1987; Tinsley, 2000). In the long term, employees' match with different factors in the workplace has an impact on quite a few attitudinal as well as behavioural effects, ranging through employment as well as career fulfilment to turnover target and genuine turnover behaviour. P-O fit is

significantly affects employees' turnover intention, working attitude, organizational citizen behaviour, ethical behaviour, pressures, and job performance, hence, it has drawn attention in both the academic and practical management fields (e.g., Elfenbein & O'Reilly, 2007; Jansen & Kristof-Brown, 2006; Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005; Verquer, Beehr, & Wagner, 2003).

In P-O fit, the compatibility between employees and organizations is emphasized (Kristof, 1996; Kristof-Brown, Barrick, & Stevens, 2005). According to Kristof (1996) There are two types of compatibility (Kristof): supplementary and complementary. Supplementary fit describes the situation that happens when an employee's personal characteristics are harmonious with those of the organization. As for the complementary, if the employee's characteristics fill gaps left by others or if his or her psychological needs are fulfilled by characteristics of the work environment, then the complementary fit is achieved. Whether the fit is supplementary or complementary, the better the fit, the happier the employees will be (Bright, 2007; Kristof, 1996).

The purpose of this paper is to examine the impact of P-O fit on turnover intention amongst lecturer in private universities in Malaysia. It is conceptualized that the compatibility between individuals and the organisation they work for leads employees to be highly committed with their role performance. By practice, highly committed employees would be less decided to quit their jobs. In doing so, the present study addresses one major gaps in the research literature. The present research has a key methodological significance. Most of the past studies applied first generation methods of data analysis (see Hassan et al., 2012; Peng, Lee, & Tseng, 2014; Wheeler et al., 2007). Recent developments in quantitative methods indicated several limitations of first-generation methods.

The recommendation is to use second generation methods, especially structural equation modelling, which is a must for social science research (Hair, Hult, Ringle, & Sarstedt, 2017; Hooper, Coughlan, & Mullen, 2008). Partial least squares structural equation modelling (PLS-SEM) is highly recommended for complex and mediating structural models (Avkiran, 2017; Nitzl, Roldan, & Carrion, 2016; Richter, Sinkovics, Ringle, & Schlägel, 2016). However, and surprisingly, PLS-SEM has rarely been applied in Human Resource Management and organisational behaviour research. By employing PLS-SEM, this study addresses this clear methodological gap. Overall, the findings from this study provide sensible insights for the HRM practitioners and the relevant stakeholders. The next section defines on social exchange theory and Lewin's field theory, the hypothetical linkages among P-O fit and turnover intention are developed in this section. The following is a brief account regarding the research methods used to achieve objectives of the present study.

**Theoretical Background and Hypotheses Development**

**Lewin's Field Theory**

Field theory is a framework that is practical in comprehending individuals' behavioural, cognitive, and affective aspects (Houston, Bettencourt, & Wenger, 1998). Lewin's field theory (Lewin, 1943, 1951a) had been implemented in various models of Human Resource Managament-performance as a theoretical foundation of the relationship between P-O fit and the related behavioural and attitudinal outcomes. The field theory basically believes that the activities of the employees and employers in a particular field are guided by their relative positions within the field and their relationship with one another (Miles, 2012). Further, Lewin (1943) held that two aspects are vital to assimilate a behaviour, namely understanding the status quo or current situation in which the behaviour takes place, and the conditions and forces that influence the individual at a particular moment. As such, the employees and employer's s' interrelationships may result in collective cultures and subjectivities. Lewin's field theory is incorporated in the present research to conceptualize the interrelationship between P-O fit and turnover intention. Individuals' behaviours are dependent on their work environment (Lewin, 1951a). The synergy between individuals and their work environment leads to the progress of specific behaviours and attitudes among the individuals. Positive behaviours tend to be shown by the individuals who have a positive perception on their organisation (work environment). This is illustrated when the employees perform the job roles effectively, go beyond the expectations, and display high energy in the workplace and are less likely to leave their organisations.

**Social Exchange Theory**

Social exchange theory (SET, Blau, 1964; Homans, 1961) is at the heart of the Human Resource Management performance models to explain the interrelations between constructs and is considered one of the most powerful theories for understanding work-related behaviour (Cropanzano & Mitchell, 2005). Social exchanges and obligations are the key belief of SET and can be developed through series of interactions between parties (Blau, 1964). Additionally, norms of the reciprocity organize social exchanges (Evans & Davis, 2005; Sparrowe & Liden, 1997). As such, social exchange process is understood as a mutually contingent and mutually beneficial function (Emerson, 1976). The relationship between employee and employer depends on social exchange (Blau, 1964; Snape & Redman, 2010). To illustrate, organisational initiatives, such as provision of socioemotional and economic resources, ensuring a well-matched and friendly work environment, and having like-minded peers, can create camaraderie and obligation among employees. As a result, in the course of reciprocity, employees tend to repay through their positive and beneficial attitudes and behaviours (Lam, Chen, & Takeuchi, 2009; Snape & Redman, 2010). Drawing on these assumptions, according to Saks (2006), it is expected that compatibility of individuals is seen by employees as a beneficial act directed towards employees, thus increasing their loyalty towards their role performance, displaying high level of energy at work, exhibiting an emotional attachment with their respective organisations and staying longer.

**Hypotheses Development**

According to Shaw, Gupta and Delery (2005), turnover can diminish the organization's knowledge capital and weakens its reputation, as well as increasing the cost of hiring staff. Three categories of factors that can affect turnover intention: 1) environment or economy; 2) employees; and 3) organization level (Moynihan & Pandey, 2007). According to Elfenbein and O'Reilly (2007), it is vital to pay attention to the fit of values between employees and the organization. It has been observed that employees are more willing to stay with organizations with which they have something in common or feeling of belongingness (Schneider, 1987). Researchers have found that the better the P-O fit, the less intention employees must quit (Brown & Yoshioka, 2003; Moynihan & Pandey, 2007; Rynes, Brown, Colbert, & Hansen, 2002; Vandenberghe, 1999). This is supported by Vandenberghe's research with Belgian nurses which showed that when these nurses felt better fit with the organization, they tended to stay in the job for at least 12 months. Brown and Yoshioka studied staff working in non-profit organizations and their findings also supported these conclusions. Verquer et al. (2003) and Kristof-Brown, Zimmerman, and Johnson (2005) in their metaanalyses of P-O fit showed that it was negatively related to turnover intention. The findings of Moynihan and Pandey in their study of 326 employees from nine organizations in the eastern United States also supports this conclusion. In other words, the better the P-O fit, the less likely employees are to quit. Evidently, Biswas and Bhatnagar (2013) noted that P-O fit was highly associated to the employees belonging to organisations in north India. Therefore, this study posited the following hypothesis:

P-O fit will be negatively related to turnover intention: the better the degree of P-O fit, the less likely the employee will be to quit.

**Research Methodology**

**Sample**

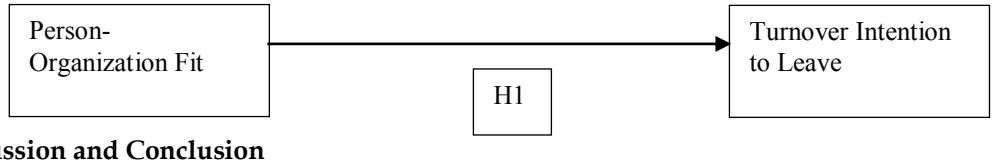
According G Power 3.1.9.2 calculation, the minimum sample for this study is at least 107 respondents. The respondents were all who are working fulltime in the private universities as lecturers.

**Measurement of Key Variables**

There are many ways to measure P-O fit; each method has its own favoured and unflavoured circumstances. According to Kristof-Brown, Zimmerman, et al. (2005), objective coherence between an employee and an organization must first be seep through that employee's perceptions. In proper sequence, these perceptions are likely to be more cognitively available and, therefore, more proximally related to attitudes and decisions than objective P-O fit would be (Cable & DeRue, 2002). Since this study was concerned that the survey was based on the voluntary participation of private universities' lecturers without controlling conditions, the study decided to use perceived fit for the measurement of P-O fit in the survey. This approach is very commonly used (see e.g., Resick et al., 2007). This meant that the private universities' lecturers who completed the survey made their assessments according to their own feelings.

Using Cable and DeRue's (2002) P-O fit measurement, the participants will be asked to indicate their agreement with three statements, rating these from 1 (strongly disagree) to 6 (strongly agree). The responses are use as three observed indicators of P-O fit. Because it is not easy to acquire actual turnover rates, in measuring the dependent variables (turnover intention), this study will follow the empirical studies in which turnover intention is set as the predictor instead of actual turnover.

Although turnover intention cannot completely replace actual turnover, the two are closely similar (Dalton, Johnson, & Daily, 1999). According to Moynihan and Pandey (2007), measuring turnover intention rather than actual turnover would also allow us to ascertain the employees' emotional attitude because whether employees will quit depends on the conditions and environment in the organization. For these reasons, this study chooses to measure employees' turnover intention. This study will use five items taken from a questionnaire written by Wayne, Shore, and Liden (1997). A sample item is: "As soon as I can find a better job, I'll leave". Respondents will answer on a scale ranging from 1 = strongly disagree to 6 = strongly agree. An overview of the research framework is depicted in the diagram below.




**Discussion and Conclusion**

The degree of P-O fit has a strong effect on employees' attitudes and behaviours in an organization, therefore, it has become an important topic in the study of organizational behaviour and personnel management. The specific research objectives of this study are to examine the impact of person-organization fit on turnover intention amongst lecturers in private universities in Malaysia. According to Schneider's (1987), employees prefer to work with an organization with which they have something in common. There is considerable evidence that found that the better the P-O fit, the less likely employees are to quit (Brown and Yoshioka, 2003) and this is in line with the hypothesis of the study.

Moreover, employees who have been with an organization for a long time have the best possibility for promotion and career enhancement. According to Schoorman and Holahan (1996), when deciding to remain in their positions or quit, the results of showed that employees in the Chinese public sector often encounter escalation of commitment so that, employees will still stay in a job because they believe that negative image will disappear. The importance of exploring the mechanism of efficacy of P-O fit is clear because only through further study of the way in which P-O fit affects employees' behavior and attitude can an understanding be gained of organizational behaviour and personnel management (Kristof-Brown, Barrick et al., 2005). This study extended the research related to P-O fit to a non-Western setting by surveying a group of full-time lecturers from Malaysia, a country that has racial diversification. This study examined the relationship between P-O fit and turnover intention. A more serious concern is common method bias due to the self-report measurement of all variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Furthermore, the data that will be from questionnaires for which most of the variables were chosen subjectively, and, therefore, the conclusion cannot be generalized. Through more scientific and severe research (such as longitudinal design) and larger samples from other sectors or industries greater understanding of P-O fit will be obtained which will provide more information on management practice.

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# The relationship between the industrial clustering and organisational competitiveness

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**Key Words**
Competitiveness; Industrialization; Industrial Clustering; Government, Organisation and Policies

**Abstract**

*The South African government has in the past developed various industrial policies that were geared towards industrialisation in order to make meaningful contributions towards job creation and growing the economy. Subsequently, the Industrial Clustering concept was employed as a special purpose vehicle in order to enhance competitiveness of the various sectors. The study interrogated the challenges that were experienced by the KwaZulu-Natal (KZN) Department of Economic Development, Tourism and Environmental Affairs (EDTEA) in supporting the five (Maritime Cluster, Wood and Wood Product Cluster, Music Cluster, Textile and Clothing Cluster and Fashion Council) industrial clusters. The study used mixed method approach in order to augment both positivism and phenomenological paradigm. There were 150 respondents from the five industrial clusters that participated in the study. The study established that the industrial clusters were besieged with financial support coming from government. There was no service delivery framework in place employed by government. This led to a downfall of the supported industrial clusters. The research discovered that some industrial clusters collapsed and failed to sustain due to governance, inconsistent funding, and the government proactive or induced approach in initiating clusters.*

## Introduction

Industrial clustering represents a group of similar and related firms in a defined geographic area that share common markets, technologies and worker skills (Morosini, 2017). Giacomin (2017) argues that industrial clustering enhances competitiveness, which in turn boosts the country's economy. In about five decades ago, industrial clustering was already popular in the developed world (Giacomin, 2017) and yet in Africa, particularly South Africa, it took longer to bring the business concept forward. The industrial clustering concept found its way to South Africa through the United Nations of Industrial Development Organisations (UNIDO) (Pisa, Rossouw and Viviers, 2015).

The challenge facing South Africa and Africa was the lack of industry experts in understanding the industrial clustering concept. The purpose of the study was to investigate the relationship between industrial clustering and organisational competitiveness. The study further analysed the regional and international competitiveness of industries in a bid to find an everlasting solution. Therefore, an industrial clustering framework was developed in order to ensure that industrial clusters are guided and supported in terms of the provision of the policy imperatives and financial resources. Lastly, the study re-affirmed the relevance of Porter's Diamond Model as there are unprecedented benefits that are accrued by individual members who join the industrial clusters.

## Literature Review

The government policies and strategies that are developed for regional economic development are critical in order to contribute to industry competitiveness and recognising the actors that are policy and economic decision-makers whose integrity and expertise can be combined in a bid to enhance world economic performance (Udovik 2014). It was further noted that the notion of competitive advantage of industry clusters elevates the capabilities of the regions in the generation, acquisition and application of knowledge and information (Porter 1990). The cluster concept was founded by Porter (1990) when he advocated the concept of clustering. In this concept, Porter (1990) advocated that government should be involved in the creation of policies that stimulate the development of industry clusters. Industrial clusters

promote industries who are geographically located and specialises in common or complementary products. Porter (1998:199) defines industrial clusters as "a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities." With the help of the diamond model, Porter stresses, for example, factor and demand conditions, and conditions that shape the firms' strategy, structure, and rivalry as sources of positive cluster effects (Gordon and McCann 2000, Porter 2000, Markus 2008).

**The Analysis of Theories of Trade and Competitiveness**

National Competitive Advantage – NCA: Porter (1998) was in discontent with the economic theories of trade and developed a new theory referred to as the National Competitive Advantage (NCA). Smith (2010) argued that the theory of national competitive advantage is not novel.

The theory of absolute advantage by Adam Smith created a limitation in terms of gains from trade (Porter 1998, Smit 2010). Countries that were in favour of this theory had limitations in terms of import or export business (Krugman 1998, Obstfeld 2003). International competition at the firm level has changed over the last decade because of the changing patterns of world trade, globalisation of the world economy, the impact and emphasis on fourth industrial revolution and rapid dissemination of technology and information, and the rise of the transnational organisation (Smit 2010, Spencer, Vinodrai et al. 2010, De Backer and Miroudot 2014). The view that national competitive advantage provides a new meaning in respect of the international competitiveness as a country was refuted by many economics scholars expressing a position that Porters theory was mainly supported by management specialists on the issue of international competitiveness at a country level (Obstfeld 2003, Spencer, Vinodrai et al. 2010, Riasi 2015).

Theory of Absolute Advantage – TAA: Krugman and Obstfeld (2003) indicated that the theory of absolute advantage absorbed a notion that a country has to propel its efforts in concentrating on producing specialised commodities which has an absolute advantage over other countries and thereby importing those commodities that are costly to produce. They asserted that a country should produce and export commodities in order to have a positive balance of trade and to be competitive against the rest of the world (Kaplinsky and Morris 1999, Jan Stejskal 2011). The challenges of the theory of absolute advantage gave advent to the law of comparative advantage where a country is focusing on producing goods that are relatively easier to produce. This paradox that absolute cost advantage leads to specialisation, but that such specialisation may not necessarily lead to gains from trade, gave rise to Ricardo's theory of comparative advantage (Dunning 1993, Altenburg and Meyer-Stamer 1999, Ceglie and Dini 1999). These new trade theories opened up the debate around government intervention as an active policy game changer in order to advance the international competitiveness of a country (Krugman 1998, Ishmael 2008, László 2014).

Theory of Competitiveness: Another protagonist for this notion, Gabor (2006), further indicated that the theory of competitiveness should be relooked at in many ways as industries at a local level have powers to take a decision regarding their competitiveness and strongly believed that competitiveness (Porter 1998, Gabor 2006, Jan Stejskal 2011):

Encourages Cluster effects;

Encourages Economic Growth and at the same time,

Enhances local economic development.

Underscoring above issues, Gabor (2006) defined competitiveness as the aptitude to realize authority and stability in the competition between industries at micro and macroeconomic level. Unfortunately, Krugman (1998) was not in favour of the doctrine of competitiveness. Ioan and Gabriela (2009) defined competitiveness as an approach to each firm, country or sector to produce and supply goods and services within a specific conducive environment. Further competitiveness is an integral economic concept which relies on the natural resources and simulated (government) factors (László 2014). The government factors encompass the industrial policies where world economies compete against another in the same way as industrial corporations (Ioan and Gabriela 2009). In the quest for clarity, Porter (1990) founded the National Diamond Model that affords the fundamental principles for the determination of the national competitive advantage of a nation (Ioan and Gabriela 2009, Smit 2010). The theory Comparative advantage thus also leads to specialisation, but differs from specialisation based on absolute advantage, in that a country will always import, whether or not it is more or less efficient overall

in the production of all goods and services relative to other countries (Schmitz and Nadvi 1999, Schumacher 2012).

**Characteristics of Organisational Competitiveness**

Knowledge spillover: The geographic location of industries has a significant influence in ensuring that related industries continuously interchange ideas and innovations. The vertical and horizontal integration of firms is highly critical in cementing the working relationship between the industries in issues relating to new technologies and opportunities thereof (Ozgen 2011). The knowledge spillover is the trial and error amongst the cluster members. The reality is that when industries come together for a common goal where there is always room for error and improvement (Caniëls and Romijn 2003). In this regard the issue of business value chain and knowledge networks are significant for all industries within the value chain in order to collaborate, maximise knowledge and create new business opportunities (Titze, Brachert et al. 2014).

Improved market access: The improvement in market access is considered to be crucial especially for the cluster members since the collaboration of industries will circumvent the marketing gap where prior to the cluster formation industries were secluded from the global markets, fashion trends and the limited resources to establish a local brand (Schmitz and Nadvi 1999). Knappe (2003) argued that there are new trade opportunities in fast emergent developing countries especially the African markets. Knappe further pointed out that well-developed economies such as EU, Japan, USA, and Canada still account 80% of the world markets. The essence of supply and demand of goods and services relies heavily on the country's efficient and effective positioning in those niche markets (Knappe 2003). Therefore, market efficiencies also rely on the demand conditions such as consumer positioning and buyer intricacy.

A specialized and skilled labour pool: The Global Competitiveness Report (2017) identified labour as one of the critical elements of competitiveness in ensuring that the labour is used to its maximum strength and the rewards are accorded for the best performance in their jobs. The cluster concept and competitiveness encourage job rotation and flexibility from one economic activity after the other. It is not novel that the economy anywhere in the world cannot generate wealth without labour. The labour mobility is believed to have a significant contribution on the distribution of knowledge amongst the industry members (Power 2008). It is believed that the exchange and flow of information, innovation and spill over occur in the workplace (intra-cluster) rather than in the cosmopolitan street talk. The cross pollination and dissemination of knowledge are often crucial to knowledge building of industrial clusters (Altenburg and Meyer-Stamer 1999, Mytelka and Farinelli 2000).

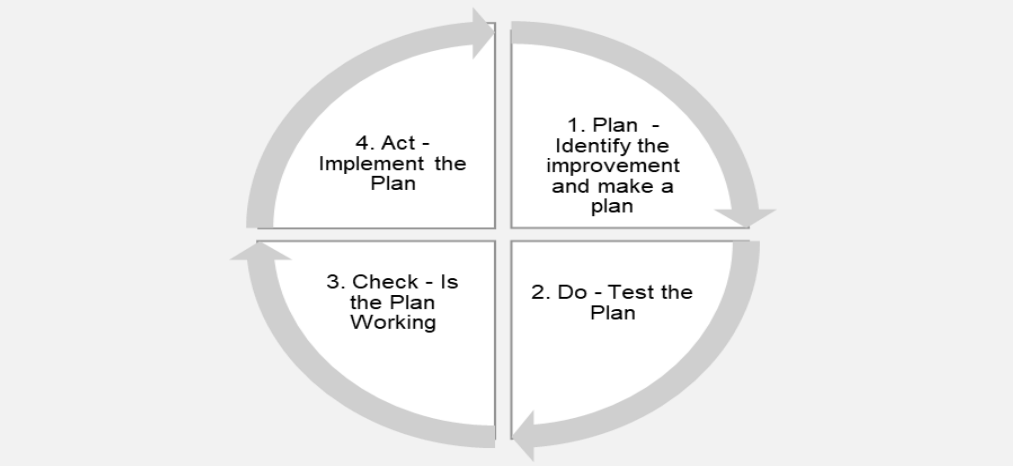
Production and Production efficiency: Clusters increase productivity through the possibility of having access to specialized inputs (including human capital, information, and institutions). Further industrial clusters improve productivity through the supply and demand of goods. Clusters within the value chain provide complementary services in a bid to increase and improve productivity (Köhler 2014, László 2014) . This maximises the economies of scales when production occurs within the location of the industrial clusters (Jacobs, Chase et al. 2004, Heizer 2016).

Economies of Scale: The cluster of economies is established from the related industries within a particular geographic area with common shared activities such as technical know-how; specialised labour pools; reduced costs of buying raw material (Tallman, Jenkins et al. 2004, Cho, Moon et al. 2008, Krugman 2011). Cho, Moon et al. (2008) asserted that Porter's single diamond model was mainly designed to explain the sources of national competitiveness possessed by the economies of advanced nations. The human factors in the nine-factor model drive the national economy forward by creating, motivating, and controlling the four physical factors in Porter's diamond model and, therefore, play an important role in explaining national competitiveness.

Lead Times: Lead times are critical in ensuring the continuous improvement in the situations where supply chain flexibility should be established and implemented through advanced lead time optimization capabilities (Yu, Chang et al. 2012, Heizer 2016). The lead time optimization provides an advanced opportunity to the industrial cluster to curtail mass production and thereby reducing the need to invest the limited resources into finished products (Jacobs, Chase et al. 2004, Gorynia, Jankowska et al. 2007). Lead time optimization capabilities assist industries to devise new stratagems to delay production and logistic (Jacobs and De Jong 1992, Porter 1998).

Continuous Improvement (Kaizen): Kaizen is an important component of industrial Clusters in order to maintain their business to be competitive and to maximise the economies of scale (Jacobs and De Jong 1992, Porter 1998, Guerrieri and Pietrobelli 2004). Chase, Jacobs and Acquilano (2004:280) indicated that continuous improvement warrants the perpetual enhancement of machinery, production inputs, labour and total quality management (TQM). It also requires the continuous improvement plan that includes labour, machinery, service providers of materials and proper production procedures. The end results of the continuous improvement are the seamless processes (Barnes, Bessant et al. 2001, Jacobs, Chase et al. 2004). The following is the Continuous Improvement model:

Insert Figure 1: The vision of Continuous Improvement




Source: Adapted from Heizer and Render (2006:168)

Figure 1 depicts the on-going processes of the continuous process. In the heart of the Plan, Do, Check, Model (PDCA), Total Quality Management (TQM), Kaizen, or Zero defects lies the operations manager who plays a critical role in implementing the continuous improvement (Jacobs, Chase et al. 2004, Heizer 2016).

Just in Time: The Just in Time (JIT) method focuses on eliminating wasted time during the production process and thereby improving quality (Heizer and Render , Sugimori, Kusunoki et al. 1977, Tallman, Jenkins et al. 2004). The JIT justifies the process of acquiring information about the product, time and amount of goods required (Kaplinsky, Morris et al. 2002, Jacobs, Chase et al. 2004). Secondly, the JIT requires that the production line only produces the required amount of goods requested.

Cluster Value Chains: For industrial clusters to grow and succeed, it is critically important to work together in in order to benefit from complementary competencies with the same industry value chain (Scheel 2002). In this instance, horizontal cluster dimension or companies indicating similar serving competencies, which are located on the same proximity often complement each other in terms of mutual learning and motivation (Scheel 2002).

**Research Methodology**

The study used mixed methodology which is a combination of phenomenological and positivism paradigm (Creswell 2009). The mixed method was based on the experiences, discussions and facts relating to industrial clusters in the KwaZulu-Natal and South Africa in particular. Further, it can be argued that by combining both types of research, the limitations of each individual method can be offset, and gaps of data can be filled or predicted especially perceptions, opinions, meanings, attitudes and beliefs. However it should be noted that facts should be reliable hence the use of the statistical methods (Rubin and Babbie 2005, Saunders 2011). In this instance, the researcher was instrumental in the development and establishment of the industrial clusters in the Kwazulu-Natal province. The research was based on five industrial clusters supported by Department of Economic Development, Tourism and Environmental Affairs (EDTEA). The study used triangulation in collecting and analysing the data of five industrial clusters (Creswell and Clark 2007, Creswell 2013). A total of 160 sample was sent to members of five industrial clusters. A total of 150 respondents participated in the survey and the responses were

computed through the use of statistical package of social science (SPSS) - Cronbach's Alpha Coefficient (Sekaran 1983, Rubin and Babbie 2005).

Further, there were ten participants interviewed for qualitative design. The study analysed both the collected data simultaneously in a bid to achieve optimum results.

Data Collection: The study plan included the actual primary data collection process as well as the data analysis plan (Saunders 2011, Strydom 2011). The layout of the research mechanism ensured that all aspects of the research were covered in the research instrument. Further, the in-depth interviews were conducted to ten industry captains of five industrial clusters supported by EDTEA. The interview guide carried a list of open-ended questions to allow the participants to express themselves freely without prejudice. A set of five-point Likert Scale type of questions was used to gather primary data whilst open-ended questions were used to collect data from key informants. A Likert Scale uses an ordinal psychometric measurement of views, attitudes, beliefs and opinions (Creswell 2013, Bezuidenhout, Davis et al. 2014). Each question in the instrument was presented as a statement or claim where research subjects would show the extent of agreement or otherwise in a structured response type format. The use of self-administered questionnaires together with personal interviews brought the advantages of triangulation to the research.

Data Analysis: There were twenty quantitative questionnaire items which aimed at addressing issues around Industrial Clustering as a tool to enhance the competitiveness of the KwaZulu–Natal economy. Since these twenty items were addressing a mixture of themes, there was a need to explore ways of sub-dividing them into sub-groups that will be identifiable. The statistical method of exploratory factor analysis was used to break the twenty questionnaire items into sub-constructs. Summary statistics of the sub-constructs and relevant inferential statistics are then presented in subsequent sections. Principal components-based factor analysis, with varimax rotation, was used to subdivide the twenty questionnaire items into sub-constructs with most appropriate construct names. Correlation Matrix was employed to check multi-collinearity and the relationship between variables. Survey data was analysed using SPSS version 21. Frequency analysis was used to analyse questions asked using a five-point Likert Scale, and these were presented in a percentage format.

**Findings and Discussions**

**Exploratory factor analysis of the twenty Industrial Clustering items**

After conducting principal components-based factor analysis, four sub-constructs of Industrial Clustering were obtained. The results are presented in Table 1 below.

The first sub-group of questionnaire items is made up of questions Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, and Q20. This group of questions is addressing the benefits of industrial clustering hence the name of this group or construct is "Industrial Clustering Benefits and Organisational Competitiveness". The Industry cluster competitiveness is addressed in this group of exploratory items. The industry feels strongly about the continuous improvement (KAIZEN), technological advancement, innovation, information sharing, production efficiencies and the creation of jobs.

The second sub-group of questionnaire items is made up of questions Q5, Q6, Q7, Q8, and Q9. This group of questions addresses the issues of industry and government stirring actions towards industrial clustering including the financing, policy development and strategy hence the name of this group of items or construct is "Industrial Clustering: Government-industry partnership actions towards Industrialisation". The government intervention in policy and strategy formulation is critical in levelling the foundations of the industry to grow.

The third sub-group of questionnaire items is made up of questions Q1, Q2, Q3 and Q4. This group of questions deals with who should take the initiative in setting up the industrial clusters including the facilitation of such clusters. The name for this group or construct is "Industrial Clustering policy formulation and facilitation". The formulation and facilitation of the policies is crucial for industries to participate fully into the programmes set by government in order to benefit.

The fourth and last construct consists of only one questionnaire item, that is, Q10 (Industries already receiving support from the government should be excluded from the cluster). This construct is pointing to the whole industrial clustering programme that it should have an exclusion clause which in turn suggests that potential companies for inclusion are those which might have been neglected by the government.

Table 1: Exploratory factor analysis results

| Questionnaire Items for Industrial Clustering | Principal Components (Latent factors) | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Q17. Industrial clustering promotes new entrants to benefit from the large firms | 0.901 | | | |
| Q20. Industrial clustering encourages knowledge sharing | 0.880 | | | |
| Q19. Industrial clustering encourages private public partnership | 0.871 | | | |
| Q16. Industrial clustering encourages production efficiencies | 0.856 | | | |
| Q14. Industrial clustering reduces production costs | 0.853 | | | |
| Q15. Industrial clustering promotes continuous improvement (Kaizen) | 0.843 | | | |
| Q18. Industries that produce related goods or services benefit if they are located within the spatial proximity | 0.837 | | | |
| Q13. Industrial clustering promotes innovation/creativity | 0.724 | | | |
| Q11. Industrial clustering promotes the maximization of the economies of scale | 0.618 | | | |
| Q12. Industrial clustering creates sustainable jobs | 0.614 | | | |
| Q7. Industry related sectors are encouraged to form clusters thereby benefiting from the cluster programme | | 0.756 | | |
| Q9. Government should support industrial clusters with a strong institutional framework to avoid mismanagement of resources | | 0.721 | | |
| Q8. Industries should show commitment before approaching government for support | | 0.688 | | |
| Q6. Government should develop a provincial programme dedicated for industrial clusters | | 0.616 | | |
| Q5. Government should set aside funding to support clusters | | 0.527 | | |
| Q4. Government should develop industrial policies in enhancing competitiveness of local firms | | | 0.768 | |
| Q1. Government should initiate Industrial clusters | | | 0.703 | |
| Q3. Government should play a facilitation role in supporting clusters | | | 0.649 | |
| Q2. Industries should take the initiative in forming clusters | | | 0.621 | |
| Q10. Industries already receiving support from government should be excluded from the cluster programme | | | | 0.618 |
| **Cronbach's Alpha** | 0.955 | 0.821 | 0.587 | - |
| **Suggested Construct name** | Industrial Clustering Benefits | Government/industry partnership and actions | Government-industry initiation and facilitation | Industrial Clustering exclusion criteria |

Descriptive statistics for Industrial Clustering Benefits and Organisational Competitiveness: The benefits and organisational competitiveness of industrial clustering can be broadly grouped into two categories, namely, industrial clustering benefits and organisational competitiveness benefits. These two categories are discussed in the two sections under Table 2 below. On all the 10 items that make up the construct, there was overwhelming approval of the programme, particularly as far as its benefits are concerned. It can be noted that questions 11, 12, 13, 14, 15 and 16 are main benefits that are aimed at the organisational competitiveness while questions 17, 18, 19 and 20 are about industrial clustering synergies between companies.

Organisational Competitiveness/Individual company benefits: The results in Table 2 show that 97.3% of the respondents agree or strongly agree that industrial clustering promotes the maximization of the economies of scale while 94.0% agree or strongly agree that industrial clustering creates sustainable jobs. Most of the respondents (96.7%) indicated that industrial clustering promotes innovation/creativity, 95.3% indicated that industrial clustering reduces production costs, 98.0% indicated that industrial clustering promotes continuous improvement and 97.3% indicated industrial clustering encourages production efficiencies. In all items that are about organisational competitiveness/individual company benefits to be derived from industrial clustering, there was high approval rating.

Industrial Synergies between companies: The last four questions presented in Table 2 are the benefits industrial clustering in terms of synergies between companies. The results show that 96.7% of the respondents agree or strongly agree that industrial clustering promotes new entrants to benefit from the large firms, 98.0% indicated that industries who produce related goods or services benefit if they are located within spatial proximity, 98.7% indicated that industrial clustering encourages private and public partnership and 98.7% indicated that industrial clustering encourages knowledge sharing. The respondents seem to be embracing the concept of industrial clustering with enthusiasm as indicated by the high approval ratings in both individual companies benefit and corporate community benefits.

Table 2: Descriptive statistics for Industrial Clustering Benefits

| **Industrial Clustering Benefits** | Descriptive Statistics | | | | Latent Factor (Principal component) Coefficient |
|---|---|---|---|---|---|
| | n | % Agree/ Strongly Agree | Mean | Std Dev | |
| Q11. Industrial clustering promotes the maximization of the economies of scale | 150 | 97.3% | 4.37 | 0.54 | 0.747 |
| Q12. Industrial clustering creates sustainable jobs | 150 | 94.0% | 4.31 | 0.6 | 0.742 |
| Q13. Industrial clustering promotes innovation/creativity | 150 | 96.7% | 4.33 | 0.59 | 0.8 |
| Q14. Industrial clustering reduces production costs | 150 | 95.3% | 4.33 | 0.59 | 0.873 |
| Q15. Industrial clustering promotes continuous improvement (Kaizen) | 150 | 98.0% | 4.38 | 0.55 | 0.874 |
| Q16. Industrial clustering encourages production efficiencies | 150 | 97.3% | 4.33 | 0.55 | 0.856 |
| Q17. Industrial clustering promotes new entrants to benefit from the large firms | 150 | 96.7% | 4.31 | 0.55 | 0.91 |
| Q18. Industries who produce related goods or services benefit if they are located within the spatial proximity | 150 | 98.0% | 4.33 | 0.51 | 0.85 |
| Q19. Industrial clustering encourages private public partnership | 150 | 98.7% | 4.37 | 0.51 | 0.902 |
| Q20. Industrial clustering encourages knowledge sharing | 150 | 98.7% | 4.37 | 0.51 | 0.905 |
| Cronbach's Alpha | | | 0.955 | | |
| % of total variation accounted for by latent factor | | | 71.89% | | |

Descriptive statistics for Government/Industry partnership and actions towards Industrialisation: The construct of Government/Industry partnerships and actions towards industrialisation has four items that are summarised in Table 3 below. The partnership actions can be divided into two groups, namely, those which require government action and those which require industry action. The items that talk mainly about government actions are questions 5, 6 and 9 while questions 6 and 8 talk about industry actions.

Government initiatives and actions towards industrialisation: Results in Table 3 show that 99.3% of the respondents agreed or strongly agreed that government should set aside funding to support clusters, 98.0% indicated that government should develop a provincial programme dedicated for industrial clusters and 97.3% indicated that government should support industrial clusters with strong institutional frameworks in order to avoid mismanagement of resources.

Table 3: Descriptive statistics for Government/Industry partnerships

| Government/industry partnership and actions | Descriptive Statistics | | | | Latent Factor (Principal component) Coefficient |
|---|---|---|---|---|---|
| | n | % Agree/ Strongly Agree | Mean | Std. Dev. | |
| Q5. Government should set aside funding to support clusters | 150 | 99.3% | 4.47 | 0.54 | 0.745 |
| Q6. Government should develop a provincial programme dedicated for industrial clusters | 150 | 98.0% | 4.4 | 0.56 | 0.780 |
| Q7. Industry related sectors are encouraged to form clusters thereby benefiting from the cluster programme | 150 | 97.3% | 4.46 | 0.55 | 0.854 |
| Q8. Industries should show commitment before approaching government for support | 150 | 98.0% | 4.41 | 0.56 | 0.726 |
| Q9. Government should support industrial clusters with strong institutional framework in order to avoid mismanagement of resources | 150 | 97.3% | 4.39 | 0.64 | 0.723 |
| Chronbach's Alpha | | 0.821 | | | |
| % of total variation accounted for by latent factor | | 58.86% | | | |

Industry initiatives and actions towards Industrialisation: Results in Table 3 show that 97.3% of the respondents agreed or strongly agreed that industry related sectors are encouraged to form clusters thereby benefiting from the cluster programme and 98.0% indicated that industries should show commitment before approaching the government for support. This shows that the clarion call to participation in the formation of industrial is on both fronts, that is, the government front and the industry front.

**Descriptive statistics for Government/industry initiation and facilitation**

Most of the respondents believe that government should not play the leading role in the initiation of industrial clusters. Only 28.0% of the respondents agreed or strongly agreed while 40.0% strongly disagreed with 21.3% disagreeing. This means that most of the respondents believe that industry itself should do some self-organisation and come up with industrial clusters they see fit. This is buttressed by the fact that 96.0% believe that industries should take an initiative in forming clusters.

Table 4: Descriptive statistics for Government/Industry partnerships

| Government-industry initiation and facilitation | Descriptive Statistics | | | | Latent Factor (Principal component) Coefficient |
|---|---|---|---|---|---|
| | n | % Agree/ Strongly Agree | Mean | Std Dev | |
| Q1. Government should initiate Industrial clusters | 150 | 28.00% | 2.47 | 1.56 | 0.678 |
| Q2. Industries should take an initiative in forming clusters | 150 | 96.00% | 4.31 | 0.67 | 0.669 |
| Q3. Government should play a facilitation role in supporting clusters | 150 | 99.30% | 4.37 | 0.5 | 0.828 |
| Q4. Government should develop industrial policies in enhancing competitiveness of local firms | 150 | 99.30% | 4.45 | 0.51 | 0.798 |
| Chronbach's Alpha | | 0.587 | | | |
| % of total variation accounted for by latent factor | | 55.73% | | | |

Most respondents (99.3%) believe that after the industry clusters are formed through the initiative of concerned industries, the government should play a facilitation role in supporting the industrial clusters while 99.3% of the respondents believe that government should develop industrial policies in enhancing the competitiveness of local firms.

**Descriptive statistics for industrial clustering exclusion criteria**

There is a need to be clear on who should be part of the industrial clusters. To this end, question 10 sought the options of respondents on who should be included in the industrial clustering programme. Table 5 indicates that there is an agreement on industries already receiving support from the government should be excluded from the cluster programme as only 27.3% agreed or strongly agreed on this matter. On the other hand, there seems to be strong disagreement to the exclusion of industries already enjoying some forms of government support as 25.3% strongly disagreed with 27.3% disagreeing and 20.0% neutral.

Table 5: Descriptive statistics for Government/Industry partnerships

| **Government-industry initiation and facilitation** | Descriptive Statistics | | | |
|---|---|---|---|---|
| | n | % Agree/ Strongly Agree | Mean | Std. Dev |
| Q1. Government should initiate Industrial clusters | 150 | 27.30% | 2.6 | 1.3 |

**Correlations between variables**

Results presented in Table 6 indicate that there is a strong correlation between Individual company benefits and benefits derived from Synergies between companies (correlation=0.830, p-value<0.001). In fact, there are significant correlations between all variables except the exclusion criteria of some Industries.

Table 5: Correlation between variables

| **Pearson Correlations** | | Organisational Competitiveness benefits | Industrial Synergies between companies | Government initiatives and actions towards industrialization | Industry initiatives and actions towards industrialization | Government-industry initiation and facilitation |
|---|---|---|---|---|---|---|
| Organisational Competitiveness benefits | Correlation<br>p-value<br>N | - | | | | |
| Industrial Synergies between companies | Correlation<br>p-value<br>N | 0.830**<br><0.001<br>150 | - | | | |
| Government initiatives and actions towards industrialization | Correlation<br>p-value<br>N | 0.528**<br><0.001<br>150 | 0.455**<br><0.001<br>150 | - | | |
| Industry initiatives and actions towards industrialization | Correlation<br>p-value<br>N | 0.511**<br><0.001<br>150 | 0.432**<br><0.001<br>150 | 0.750**<br><0.001<br>150 | - | |
| Government-industry initiation and facilitation | Correlation<br>p-value<br>N | 0.363**<br><0.001<br>150 | 0.352**<br><0.001<br>150 | 0.538**<br><0.001<br>150 | 0.464**<br><0.001<br>150 | - |
| Exclusion of some Industries | Correlation<br>p-value<br>N | 0.156<br>0.056<br>150 | 0.127<br>0.121<br>150 | 0.100<br>0.224<br>150 | 0.106<br>0.196<br>150 | 0.147<br>0.073<br>150 |

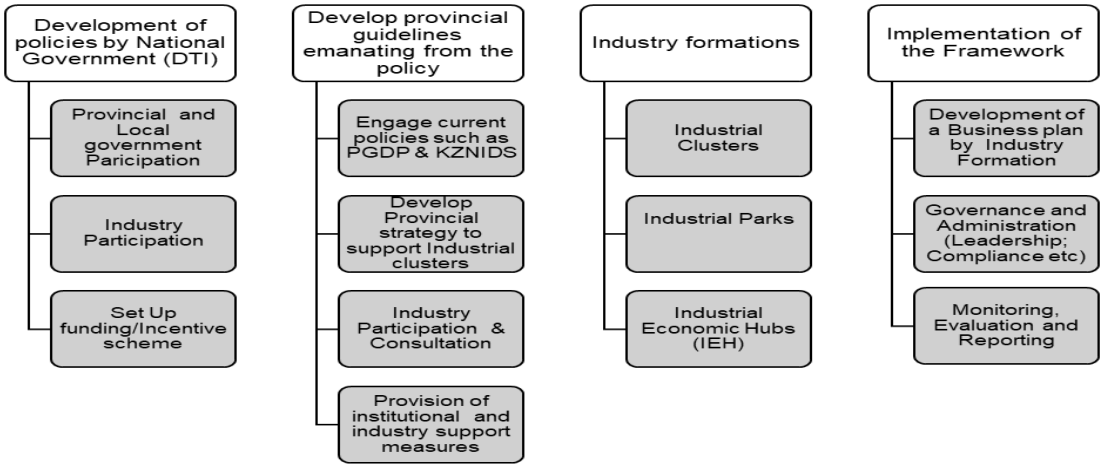
**. Correlation is significant at the 0.01 level (2-tailed).

**The Impact of the study**

The scholarly views and the study (research) are in agreement that the government has a significant role to play in ensuring that industries are propelled in achieving the desired goals. In this regard, the policy imperatives are key fundamentals for industrialisation and enhanced the competitiveness of industries (Altenburg and Meyer-Stamer 1999, Kaplinsky and Morris 1999, Morris and Barnes 2007, László 2014). For example, if policies such as National Industrial Policy Framework; Growth Employment

and Redistribution; Accelerated Shared Growth Initiative of South Africa; New Growth Path; National Development Plan and many other ancillary strategies and position papers were not developed and implemented, South African industries or firms were going to struggle to compete with the outside world. Therefore deregulation of trade ensured that South African industries also benefit in respect of trading with other countries (Porter 2000, Weiss 2002, Morris and Barnes 2007, Schwab and Sala-i-Martin 2010). Figure 2 below depicts a framework which was developed based on the findings from the study, and there are gaps that need to be filled for the industrial clusters to grow and succeed. The proposed Framework has four elements:

figure: 2: Service Delivery Framework




Source: Author

Policy Directive: The underlying principle in respect of the current arrangement is that there is no policy developed regarding the establishment and supporting of the industrial clusters in South Africa (Altenburg and Meyer-Stamer 1999, Barnes 2003, Guerrieri and Pietrobelli 2004, Morris and Barnes 2007). The research discovered that the clusters managers and organisation captains were discontented that the government developed policy imperatives and strategies that are designed to assist the Special Economic Zones, Industrial Parks, Export Councils, Joint Action Groups and Customised Sector Programmes and excluded industrial clusters. They have registered concerns that the reasons for industrial clusters to fail are based on the fact that government has adopted the industrial clustering concept from UNIDO without tailoring the concept to suit the local environment (Barnes, Bessant et al. 2001). There are industrial clusters that are yet to understand the process of accessing government support unlike other industry formations (Morris and Barnes 2007).

Develop provincial guidelines emanating from the national policy: The development of the provincial guidelines is a fundamental step towards harmonising the fragmented processes that are prevailing in supporting the industrial clusters. The existence of the five supported clusters by government is based on the Industrial Policy Action Plan (IPAP) which is reviewed after three years based on the performance of the priority sectors. The study recommended that provincial guidelines emanating from the national policy should be developed in order to ensure future sustainability of the industry clusters. The study further discovered that there were industry support measures recommended by stakeholders: Serviced Industrial Land; Infrastructure Development; Negotiated Rates (Water and Electricity); Research & Development, Provision of Advanced Technological Facilities to support Innovation; Skills Development Programme; Funding and Incubation facilities to support business linkages and integration.

Industry Formations: Even though the special economic zones (SEZ) have a lot of incentives to offer for new investments, the critical issue is the spatial geographic disparity and the creation of backward and forward linkages (Altenburg and Meyer-Stamer 1999). The SEZ licenses are only granted to the highly industrialised locations (Farole and Akinci 2011). This created a void regarding growing the economies of other regions which have no high density regarding the firms or industries. It was for these reasons that

the government had initiated the process of establishing the Industrial Economic Hubs (IEH) which are sectorial based, and they are all in eleven districts of the KZN province. The IEHs are strategically located to enhance competitiveness through the managed resources such as infrastructure, water, and electricity, funding, logistics, provision of advanced technologies and innovation. The study discovered that the Industrial Economic Hubs also have strong resemblance and connotation with the industrial clusters. The study strongly recommended that the institutionalisation of industrial clusters must not be initiated by the government, but the industry should take the initiative (Morris and Barnes 2007).

Implementation of a framework: The study revealed that industrial clustering concept is a critical tool in industrialising the KZN province. Its importance has been evidence in the revival of the textile and clothing industry especially on the leg of fashion design. There has been the emergence of the fashion designers across the country. This is due to fashion, tastes, and preferences. The study discovered that most South Africans prefer individually designed garments with famous designer names. Further, some clusters failed to produce bankable business plans with no clear financials.

It is therefore in the best interest of the clusters to ensure that the crafted business plans are as comprehensive as possible to give prospective investors (government and private sector) and members' confidence that the cluster will thrive and sustain beyond the financial intervention (Barnes, Bessant et al. 2001). Some cluster members revealed that benchmarking exercise among cluster formations is critical to ensure a bankable business plan is crafted.

**Conclusion**

What came strongly from the research were the issues of industrialisation, competitiveness, challenges and the development of a framework. The significant contribution by industrial clusters in industrialising the KZN province is evident from the emergence of the five industrial clusters supported by EDTEA. The purpose of highlighting these clusters was to depict their significant contribution in unveiling new job opportunities, untapped careers, and business opportunities. The study proposed that industrial clusters should operate as formal and recognised entities by government for the sake of continuity and sustainability. The institutionalisation of industrial clusters must not be initiated by the government, but the industry should take the initiative (Morris and Barnes 2007). In that way industry clusters will have their aspirations and objectives that bind them together in order achieve the desired goals. This will circumvent the industrial clusters to fail. The implementation of the service delivery framework was strongly recommended as it was going to increase economic growth and restore confidence in developing industrial cluster in KZN province and the country in general.

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# Retirement intention: The influence of older worker identity, development opportunities on the job and social integration on work behaviour

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**Keywords**
Behaviour, Intention, Older worker, Psychosocial, Retirement

**Abstract**

*Retirement intention has been linked to individual factors such as health and wealth, but less is known about the role of the psychosocial factors on work behaviour. The objective of this study is to identify the relationship between older worker identity, development opportunities on the job and social integration with retirement intention on work behaviour. This paper drew upon a pilot testing data on 30 older workers aged from 50-66 years old from the private and public sectors in Malaysia. Using chi square analysis, it was found that older worker identity, development opportunities on the job and social integration negatively influence retirement intention while development opportunities on the job has a moderate positive influence on social integration in work behaviour. The implications of the study are discussed in the paper.*

## Introduction

In recent years, population ageing and improving health of older ages in Western countries (Carr et.al., 2016) and Organisation for Economic Cooperation and Development (OECD) countries significantly impact labour markets (Oakman & Wells, 2013). Employment rates among older workers are increasing (Redden, 2013; Eurostat, 2016). Apart from an increase in the aged population, the aged are also living longer as evidenced by an increase in life expectancy especially in selected countries like Japan, Australia and New Zealand. It means after retirement age of 60 years old; the population is expected to live for another 20 years in average. Longevity among ASEAN countries include Singapore, Brunei Darussalam and Viet Nam (WHO, 2018). Changes in population age structure in Malaysia showed a percentage of old age increases significantly at age 65+ years from 5.0% in 2010 to 14.5% in 2040 (Department of Statistics Malaysia, 2018).

Aging of the population entails several consequences. Forecasts of unfavourable changes in the size of population, its structure with regards to economic groups and labour dependency ratio, are significant for Malaysian labour market and for the functioning of organisations (IDS, 2019). This means that consumption of the growing number of retirees will have to be financed by working population, whose size is shrinking. The labour market will gradually become the market of the senior and elderly (Mendryk, 2017).

Based on Bank Negara Malaysia observation, only 40 percent Malaysians are financially ready for retirement and more than 75 percent Malaysian find difficulty saving RM1000 for immediate and emergency needs (IDS, 2019). It is also reported that most people are lack of financial literacy and has no idea of how much saving to sustain their lifestyle and living in future. Continued employment and engagement would result in higher morale, happiness, better adjustment, longevity, larger social network and better perceived health among the elderly. Work is an important factor in keeping the elderly healthy (Shultz & Wang, 2011).

Individuals define "retirement" in many ways. For the purpose of this paper, we focus on situations where an older worker voluntarily leaves their full-time career employment. There can be a variety of subsequent outcomes, ranging from no work at all, part-time work or phased retirement with the same employer, a bridge job at another employer, self-employment, "unretirement" (returning to work after a period of retirement), or volunteering (Cahill et al., 2015; Maestas, 2010; Jaworski et al., 2016).

Pressures for continuing to work later in life arise from financial pressures on pension schemes from an ageing population, labour shortfalls and skills shortages (Flynn & McNair, 2009). Recent studies have found support that workers, including older workers, hold more positive attitudes towards working longer than was previously thought (e.g. Age Concern, 2005; Employers Forum on Age, 2002, HSBC, 2005). However, one of the areas that is still unclear is how older workers' views on their jobs impact on their expectations of retirement (Flynn & McNair, 2009). Therefore, recent work in the retirement literature has concentrated on the importance of psychosocial variables in predicting attitudes towards retirement decisions (Crego et al., 2008, Taylor et al., 2007, Wong & Earl, 2009, Zappala et al., 2008). Psychosocial variables relate to the meaning that work plays in an individual's life (for example, their commitment to the organisation, and to work itself) but also their attitudes and expectations of retirement.

The relationship between the work environment (physical and psychosocial) and adverse health outcomes, such as poor mental health has been explored by others (Dollard & Bakker, 2010; Warren, 2001), but examination of the impact of work factors on retirement intention has received much more limited attention (Ilmarinen, 2005; Shacklock, Brunetto & Nelson, 2009). Little is known about the motivation for older workers to work and developing a greater understanding of such motivations is needed to identify the key issues related to influencing retirement intention (Ginn & Arber, 2005; Kooij et al., 2008). A literature review by Kooij et al. (2008), which examined potential age differences in motivation to work, found little consensus on which specific aspects of their work motivate older workers to stay in employment. This study contributes to the growing understanding of the factors that influence workers to remain in their job beyond normal retirement age.

**Literature review**

**2.1 Retirement intention**

As researchers claim, the nature of retirement has been changing (Ekerdt, 2010). Traditional understanding of retirement as the point at which one finishes paid work is not sufficient to describe various forms of professional deactivation. More and more employees withdraw from employment gradually by limiting the number of hours of work or changing the scope of activities. Others retire but remain employed. There is also a group of retirees returning to labour market (for various reasons). Thus, pension should be a process spread over time, with individualized dynamics and course (Wang & Schultz, 2010). The term "retirement" can mean both a moment to leave the organization and limiting one's commitment to work, receiving pension benefits and/or as a reflection of the status, which the person assigns to themselves. A decision to retire is traditionally seen because of personal and environmental factors: organisational (work and its attributes) and extra-organisational (e.g. family pressure and other socio-economic factors) (Wang & Schulz, 2010).

With regards to the relationship between psychosocial demands and retirement outcomes, Smeaton et al., (2009) found that older workers in England reporting high levels of work-related stress were more likely to say they plan to retire before state pension age. Retirement intentions have been shown to be influenced by low job control (Sutinen et al., 2005), effort-reward imbalance (Siegrist et al., 2007) and unsupportive workplace norms and supervisors (Van Solinge & Henkens, 2013). To date, several studies have examined the intention to retire (e.g. Elovainio et al., 2003; Mock, 2001; Potocnik et al., 2009; Schmidt & Lee, 2008).

**2.2 Older worker identity**

Barnes-Farrell (2003) suggests that in order to gain better understanding of people's preferences and intentions concerning whether to continue working or to retire, it is important to bear in mind that older adults, like people in general, are motivated to maintain a positive self-concept and identity. Tougas et al. (2004) consider the identity of the older worker and stress the social aspect of the ageism related to the internalization of negative attitudes and beliefs in the self-image. Unfavorable treatments commonly due to stereotypes may lead to the internalization into the self-concept of negative characteristics commonly associated with being an "older worker". Barnes-Farrell (2003) stresses that accepting older worker stereotypes, perceiving one's skills as obsolete, and considering oneself too old for the work context may restrict a person's ability to maintain a positive identity in the role of worker and induce him/her to quit. Hence, this study postulated as follows:

H1: The older worker identity will be positively and significantly related to retirement intention.

According to these suggestions, studies have proposed the existence of older worker identity (Roberto & Biggan, 2014; Urick & Hollensbe, 2014) or late-career worker identity (Bayl-Smith & Griffin, 2014) and its influence both on transition to retirement and adjustment to retirement. Specifically, older worker identity will impact on negative attitudes towards work (Desmette & Gaillard, 2008) and on behaviours, such as job mobility – in a negative sense – and full retirement – in a positive sense (Zaniboni et al., 2010).

**2.3 Development opportunities on the job**

This factor includes characteristics that may make a job demanding and stimulating in terms of growth and development. Workers describe their jobs by considering the degree of competence/skill and commitment required, opportunities to learn, decision-making, and margins of discretion. Jobs with good opportunities to develop skills, low physical effort, high-perceived control, and application of social skills motivate people to delay their retirement. Such positive job characteristics may stimulate the person to keep on working (i.e. take part-time retirement) rather than go into full retirement.

Thus, even if it is sometimes claimed that work should be kept attractive to older workers, Zappala et al. (2008) suggest that a preference for late retirement is related to a job that does not require the development of additional skills. In other words, older workers seem to give importance to work, appreciate ageing policies, but are reluctant to involve themselves in new learning. Individual differences towards attitudes towards work itself impact on retirement choices and the significance that work plays in individuals' lives varies. Role theory suggests that individuals occupy a range of roles in their lives which are critical to their self-concept and personal identity (Moen et al., 2000, Petters & Asuquo, 2008). Work roles can be an extremely important element of self-concept and self-identity for some individuals, and retirement from work can lead to a significant rupture of personal identity, loss of role and role-related activities and behaviours (Hopkins et al., 2006, Wong & Earl, 2009). As such, this study argues as follows:

H2: Development opportunities on the job will be positively and significantly related to retirement intention.

**2.4 Social integration**

Social networks have been cited as important in the workplace (Davies & Cartwright, 2010; Oakman & Wells, 2013) particularly as a mechanism for reducing work stress. In contrast, Kosloski et al. (2001) and Mein et al. (2000) found that workers who reported positive social relations at work were significantly less likely to intend to retire early. Therefore, this study postulated as follows:

H3: Anticipation of lost social integration will be positively and significantly related to retirement intention.

**Research methodology**

| Variable | Frequency | Percentage |
|---|---|---|
| *Gender* | | |
| Male | 13 | 43 |
| Female | 17 | 57 |
| *Age (years)* | | |
| 50 | 2 | 7 |
| 51 | 1 | 3 |
| 53 | 3 | 10 |
| 52 | 5 | 17 |
| 55 | 4 | 13 |
| 56 | 2 | 7 |
| 57 | 1 | 3 |
| 58 | 7 | 23 |
| 59 | 3 | 10 |
| 62 | 1 | 3 |
| 66 | 1 | 3 |
| *Employer* | | |
| Government | 10 | 33 |
| Private company | 15 | 50 |
| Self-employed | 5 | 17 |
| *Length of service (years)* | | |

| | | |
|---|---|---|
| NA | 1 | 3 |
| 4 | 1 | 3 |
| 7 | 2 | 7 |
| 10 | 2 | 7 |
| 14 | 1 | 3 |
| 15 | 1 | 3 |
| 18 | 2 | 7 |
| 21 | 1 | 3 |
| 22 | 1 | 3 |
| 24 | 1 | 3 |
| 25 | 3 | 10 |
| 26 | 2 | 7 |
| 28 | 2 | 7 |
| 29 | 1 | 3 |
| 30 | 5 | 17 |
| 31 | 1 | 3 |
| 32 | 1 | 3 |
| 35 | 2 | 7 |
| *Occupational categories* | | |
| Self-employed | 4 | 13 |
| General services | 3 | 10 |
| Technical | 2 | 7 |
| Management | 10 | 33 |
| Professional | 11 | 37 |
| *Work contract* | | |
| NA | 1 | 3 |
| Permanent | 18 | 60 |
| Full time | 7 | 23 |
| Part time | 2 | 7 |
| Contract | 2 | 7 |

Table 1: Demographic information of the respondents

This study involved a purposefully selected group of respondents, focused on older employees aged 50 and above working in various functional areas of the organization in the public as well as in the private sectors. The data collected using a self-administered questionnaire was based on the pilot testing consisted of three independent variables and one dependent variable. Total number of respondents were 30. For the purpose of analysis in Table 1, there were 12 (43%) males and 17 (57%) females. The youngest age of the respondents was two (7%) 50 years old and the oldest was one person (3%) aged 66 years old. Ten (33%) respondents worked for the government, 15 (50%) were in the private companies and 5 (17%) were self-employed.

The average length of employment for this group was 12.4 years and the occupational category for Professional was the highest with 11 (37%) respondents. Under the work contract factor, 18 (60%) respondents were permanent employees.

**3.1 Theoretical framework**

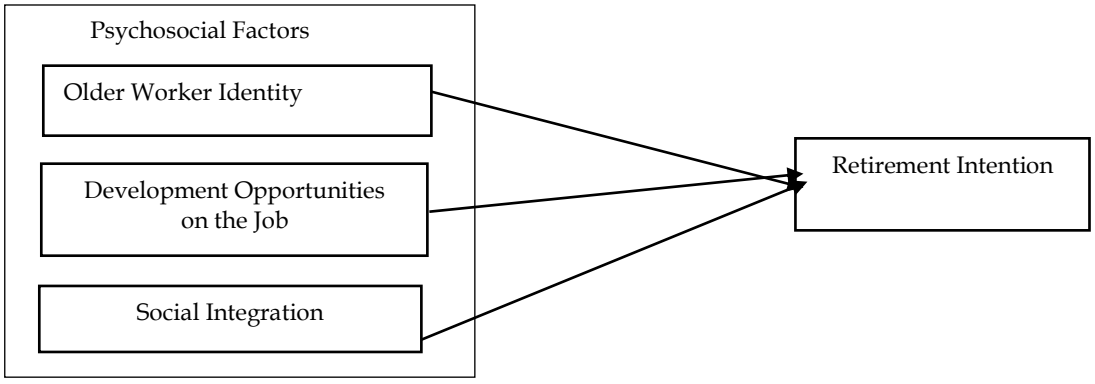


Figure 1: Theoretical framework

This study further explores the relationship of each dimensions of older worker identity, development opportunities on the job and social integration towards retirement intention in Figure 1.

**3.2 Measures**

All items were scored on a five-point Likert scale ranging from 1 = Completely Disagree to 5 = Completely Agree. Cronbach's alpha representing the reliability value was at .65 which was within the acceptable limits.

**Retirement intention**

For the dependent variable retirement intention, we used the three-item scale adopted from Zaniboni et al., (2010). Sample items include" As soon as I can retire, I will definitely stop working" and "I will keep on working by changing job type, even when I can already retire."

**Older worker identity**

In this study, the independent variable older worker identity was measured using the twelve-item scale proposed by Tougas et al., (2004). Sample items include "I was less effective in accomplishing my work" and "My performance did not deteriorate, rather it improved."

**Development opportunities on the job**

Development opportunities on the job reflects whether the job was demanding and stimulating. This variable was measured using the six-item scale proposed by Tougas et al., (2004). Sample survey items include "My present job and my responsibilities require a further development of my capabilities" and "In my work I can completely utilize my capabilities."

**Anticipation of lost social integration**

Fletcher and Hansson, (1991) ten-item scale which explored areas of lost social integration at work among employees were adopted for the purpose of this study. Sample items include "I will probably be sitting around alone after I retire" and "Retirement will allow me to do things with friends that I was not able to do while I was working".

Findings

From the chi-square analysis in Table 2 below, there was no significant relationship between retirement intention with older worker identity (2.44), therefore Hypothesis 1 was not supported. As for development opportunities on the job, the data is not normal indicating that there is no significant relationship between retirement intention and development opportunities on the job (.368). Here Hypothesis 2 was not supported. Besides that, data from anticipation of lost social integration also showed that there was no significant relationship with retirement intention (.150). Hence, Hypothesis 3 was not supported.

| | Older Worker Identity | Development Opportunities on the Job | Anticipation of Lost Social Integration |
|---|---|---|---|
| Retirement Intention | .244 | .368 | .150 |

Table 2: Chi-Square test

These results shared similar findings to previous research by Desmette and Gaillard (2008) on older worker, Zappala et al., (2008) on job opportunities, and Kosloski et al., (2001); Mein et al., (2000) on social integration.

The analysis for the data in Table 3 below was done on normality test using Shapiro-Wilk test. Based on normality test, P-value<0.01 indicated that the data was not normal.

| | Retirement | Older worker | DevOpp | Social I. |
|---|---|---|---|---|
| Retirement | - | | | |
| Older worker | -0.114 | - | | |
| DevOpp | -0.008 | -0.243 | - | |
| Social I. | 0.057 | 0.079 | 0.577* | - |

N = 30, *p<0.01 Table 3: Pearson Correlation Matrix

The Pearson correlation result showed that there was no correlation between retirement intention and older worker identity. Besides that, there was no correlaton between retirement intention and development opportunities on the job. Similarly, there was no correlation between retirement intention

and anticipation of lost social integration. However, it was indicated that there was a correlation between social integration and development opportunities on the job ($p<0.01$). This was further supported by a moderate positive coefficient of correlation value, $r = 0.577$.

**5.0 Discussions and conclusions**

This study has attempted to answer the questions whether older worker identity, development opportunities on the job and anticipation of loss social integration has significant influence on retirement intention. The chi-square results revealed that, there were no significant relationships between these psychosocial variables and retirement intention. In similar note, this study contributes in the existing literature by providing empirical evidence on the moderate positive coefficient of correlation between social integration and development opportunities on the job. Interestingly, the relationship between social integration and development opportunities was significant in a positive direction. The finding revealed that workplaces can enable individuals who already possess strong social networks to manage the competing demands of work. Work commitment can be linked to role theory which suggests that people occupy a range of roles in their lives which were critical to their self-concept and personal identity (Davies & Cartwright, 2010). Where that role was work related, retirement threatens the individual's sense of self-worth and identity. As there were no significant relationships between the psychosocial variables and retirement intention, the possible explanation was that the respondents do not understand the questions asked. The questionnaire needs to be reestimated or simplify according to the setting of unit of analysis. A mediating variable may be added to make the questionnaire rigorous. Next, the questionnaire must undergo reliability test retest to be conducted to improve it. In conclusion, retirement intention either directly or indirectly would put employees in a stressful condition. As such, the organisation needs to develop appropriate strategies to ensure employees have adequate retirement planning.

**Limitation and direction for future research**

It should be noted that this study was not without limitation. This study was done using data based on the pilot testing. It was recommended that a larger number of samples to be tested. Future study should extend the study in other industry. Moreover, variables studied can be conceptualized as individual factors. Therefore, exploring other constructs will be able to provide better understanding on retirement intention.

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# The role of requirements availability for six sigma processes in the cost of poor-quality reduction: An empirical study

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**Keywords**
Six Sigma Processes, Cost of Poor Quality COPQ, Total Quality Management

**Abstract**

*The study aimed to identify the requirements availability of Six Sigma processes and examine its role in reducing the cost of poor quality. The study is empirical, and population of the study is Ruban AlSafina Factory in Iraq. A structural questionnaire was designed and distributed to the analysis unit of study which they are all managers and supervisors. A (134) valid questionnaires were retrieved and statistical analysis used to test the hypotheses of the study.*

*The study results showed positive relationship between the requirements availability of Six Sigma processes and the cost of poor quality. Multi regression analysis supported the hypotheses and proved the impact of requirements availability of Six Sigma processes on reducing the cost of poor quality. The dimensions "Appraisal cost" and "Top management commitment" are ranked as the highest important dimensions at Ruban AlSafina Factory. Moreover, "Top management commitment" and "Continuous Improvement" dimensions had more impact on reducing the cost of poor quality.*

*We recommend more roles to be given to top management in developing and committing to long-term plans for successful implementation of Total quality and Six Sigma programs along with improving all processes that linked to cost of quality. Quality improvement programs also should keep continuously, and policy and procedures also should document and updated, and then informing employees and customers about it.*

# Entrepreneurship is the happiness of the world

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**Keywords**
Entrepreneurship, Happiness, globalisation,

**Abstract**

*People look for happiness everywhere, in simple things, at work, in their relationships, however, when they finally conquer happiness, they lose their motivation and get unhappy. Then they must define other goals to get motivated in their lives again. Real happiness doesn´t mean to make money and get rich. A happy person can achieve his goals and succeed even having an ordinary life.*

*First, happiness comes through work. When people do their job successfully, they contribute to the success of company they work for and consequently the company can succeed in the market as well. People earn their salaries and can afford to buy goods and services their family wishes. Moreover, they can make plans in order to provide their family a more comfortable lifestyle in the future.*

*Entrepreneurship is the key to people´s happiness. We should support new entrepreneurs so that they can achieve their goals and society will get happy too.*

*In this article, I'd like to develop an analysis on entrepreneurship based on these arguments.*

# The effect of social media influencer towards pro-environmental intention

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**Keywords**
Social Media Influencer, Endorser Attributes, Malaysia, Pro-Environment, Source Credibility

**Abstract**

*Millennials have been found to embrace a stronger concern and interaction with social media. Thus, preference for advertising has changed in recent years, putting immense pressure on brands to consider new and innovative advertising sources. One of the most popular avenues today is using social media influencer. Relatively, previous study indicated that this generation seems to be more concern about the ecological and incline to pro-environment manner. In the literature, most studies are found to explain the use of endorsers' attribute and mainly in celebrity context. Little has been discussed on social media influencer context particularly on the non-profit settings such environmental issue. In Kota Kinabalu, Malaysia, Waste Awareness Campaign has been launched in early 2018 to educate the society on waste management. The campaign requires social media influencer to spread awareness on social media in order to promote the alarming problem on waste issue. However, there is not much understanding have been made to determine the success of the said campaign. Therefore, this paper is aimed to examine the effect of using social media influencer in regard of the social media influencer attributes in promoting waste awareness among millennials to be more involved in practicing pro-environment attitude and intention. A pilot test study has been conducted. The data was analyzed using IBM SPSS Statistics 25.0.*

*The findings show that there is a significant association between Pro-environment intention and Source Credibility (expertise & trustworthiness). This paper is expected to provide insights to social marketing researchers on the effect of social media influencer's attributes towards campaign awareness. Furthermore, this paper will serve as a guideline to social marketers and relevant authorities in designing their awareness campaigns on social media particularly on pro-environment issues.*

## Introduction

Waste management has become a critical issue to be solved globally. Most of the wastes are remarkably not handled in an environmentally safe approach. Thus, world generated approximately 2.01 billion municipal waste annually and expected to contribute to the 33% of increment due to 2050. "Mismanagement of waste is harming human health and environments while adding to the climate challenge. Unfortunately, it is often the poorest in society who are adversely impacted by inadequate waste management. Our resources need to be used and then reused continuously so that they do not end up in landfills", said by Laura Tuck, Vice President for Sustainable Development World Bank (Kaza et al., 2018).

In Malaysia, waste management has become a critical issue to overcome due to the rapid growth of population (Lim, 2018: Bashir et al., 2018; Shehzad et al., 2016). The average of waste production in Malaysia is about 30,000 tons daily and only 15% of that waste has been recycled (Bashir et al.2107). With that regards, statistically, the production of waste in Malaysia increased 91% from 2003 to 2013 hence consumption and disposal rates are escalating faster than Malaysia's utilities can handle (Samsudin and Don, 2103). This alarming situation on waste management prompted the Malaysian Government to include this issue from the 6th Malaysia Plan (MP) for 1991-1995 to 11th Malaysian plan 2016-2020, with an emphasis specifically on solution of waste issue to educate and enhance the society tendency to more concern about the wellbeing of nature and pro-environment attitude.

Consequently, one way to effectively create change is by placing learning program about environmental issues to society particularly in the schools, colleges and universities that represent the

future generation so that they can influence the families & communities by passing all information of what have they taught (Bashir et al., 2017). Therefore, this will imply to the encouragement to bring new prospect to create attention of the societies to be more attach and concern about these critical issues. Recently, in February 2018 there is an issue highlighted by Kota Kinabalu FM (KK12FM) and Sabah Trash Hero's (NGO), introducing the social media influencer for the campaign endorser towards "Waste Awareness in Kota Kinabalu". However, the effectiveness of bringing this new prospect still uncertain.

Relatively, the developments in research on social media influencer (SMI) have seen increased attention. Given this substance, it is mainly because of the increasing number of technology adoption and the changes of people communication's interaction particularly by the millennials. Social media influencer is also seen as one of the most influencing for endorsement strategies which can contribute on people attraction on the online traffic (Freberg et al., 2011) established effective outreach strategies (Booth & Matic, 2011) and encourage substantial business return (Lim et al., 2018).

An acceptance and increasing awareness of the crucial role that social media influencer at present take part in ensuring the profitability growth for the business. Therefore, understanding on how social media influencer plays their role to achieve market competitiveness is critical in order to ensure business survival and advertising effectiveness. Moreover, people these days bias to the fast, convenient and informative consumption on the social media. Additionally, social media influencer was believed as the cost-effective endorsement strategy that can contribute to great challenging in online market (Freberg et al., 2011; Svenssen et al., 2018; Khamis et al., 2017).

However, some scholar agreed that the studies about social media influencer are still inadequate particularly by unveil on another prospect in marketing such as in non-profit orientation (Godey, 2016; Nawi, 2018). Hearn and Schoenhoff (2016) concluded that" the social media influencer works to generate a form of "celebrity" capital by cultivating as much attention as possible and crafting an authentic "personal brand" via social networks, which can subsequently be used by companies and advertisers for consumer outreach".

## Literature review

### Celebrity Endorser Attributes

Several literatures validated in endorsement strategy that the attribute of the endorsers is said can profoundly effect on the attitude (Seno and Lukas, 2007; Fleck et al., 2012; Wang, 2017). In famous advertising endorsement strategy, there is growing development of study that has focused on the attribute which deemed to contribute to the successful campaign regularly on celebrity endorsement such as credibility of the endorser (Kahle & Homer, 1985; Ohanian, 1990, Amos et al., 2008; Muda et al., 2014; Annuar et al., 2018). In view of the fact, examination on social media influencer attribute study was said to be under research (Lim et al., 2018). Therefore, the objective of this study is to examine the effectiveness of social media influencer credibility towards pro-environment intention.

### Source Credibility

Source credibility is extensively used to evaluate the effectiveness of the advertising endorsement (Hoyland and Weiss 1951; Ohanian, 1990; Taghipoorreyneh and de Run 2016). The credibility of the endorser towards advertisement are said to have positive effect to reviewer perception (Goldsmith et al., 2000). Source credibility contains two elements are generally discuss that is expertise and trustworthiness. Metzger et al., (2003) noted "that an endorser who perceived as highly trustworthy and expertise would lead to consumers' indifference towards the advertising message, resulting in higher acceptance of the delivered message". Trustworthiness represents an endorser's dignity, believability, and honesty (Erdogan 1999). Till and Busler (2000) stressed that expertise has a positive influence on both attitude and purchase intention. The endorser who has viewed as experts tends to be more persuasive (Aaker and Myers, 1987) and capable of driving attitude change to create intention towards the advertisement motive (Ohanian 1990). Therefore, the information presented by a credible source (e.g. social media influencers) can affect consumers' beliefs, opinions, attitudes and behaviours (Wang et al. 2017). Relatively, social media influencers who held with high expertise and trustworthiness viewed as being more influential on their followers' behaviors. The discussion of the credibility has been widely discussed in celebrity context but still limited in the context of social media influencer particularly in a non-profit setting.

### Trustworthiness

H1a There is a positive relationship between social media influencer's trustworthiness and intention towards pro-environment Expertiseness

H1b There is a positive relationship between social media influencer's expertiseness and intention towards pro-environment

**Research Model**

This study espouses the Tri-Partite Model which develops the stages of conception of attitude change towards the intention and behavior. The main components of this model consist of thinking, feeling and intention/behavior, thus will become the fundamental concept to the framework creation for this study as the advertisement endorse by the social media influencer have become the stimulus towards the change of attitude and directly effect on the intention/behavior.

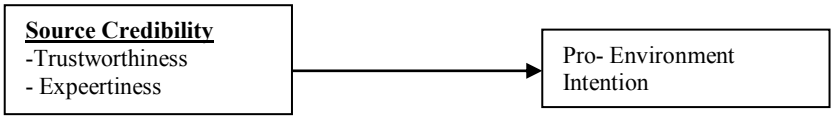


Figure 1: Research Framework

**Methodology**

**Sampling and Data Collection**

Those who are born between 1981 and 1996 can be categorized as a millennial (Dimock, 2018). Relatively, according to Moore (2012), "millennial has been found to embrace a stronger concern and interaction with social media and social media influencers in comparison to other generations". Thus, this study conducted a quantitative research in order to achieve the research objectives. Convenience sampling technique is used to choose the representative of millennial in Kota Kinabalu, Sabah. A pilot test has been conducted to ensure the content validity of the research instruments, where 35 respondents have been selected conveniently to answer the questionnaire. All responses from the respondents are analyzed using simple statistic such frequency anlaysis, Reliability test, normality test and Chi-square test. Observation has been taken to ensure any errors or feedback from respondents will be noted so that revision and improvement to the questionnaire can be made. Variables of source credibility and intention towards pro-environment measured using a 5-point likert scale. Exhibit in table 1 is a frequency of respondents' profile. Respondent of this study encompass 54% of female and 46% of male. The largest age group of the sample was those who in the age of 29-39 which represent 71%. On the education background, predominantly basic degree which represent 59%, 29% master's degree, 11% Diploma holder, and the lowest 3% represent both PHD and SPM respectively.

Table 1: Demographic Profile

| Demographic Variable | Categories | Frequency | Percentage |
|---|---|---|---|
| Age | 18-28 | 10 | 29% |
| | 29-39 | 25 | 71% |
| | Total | 35 | 100% |
| Gender | Female | 19 | 54% |
| | Male | 16 | 46% |
| | Total | 35 | 100% |
| Race | Malay | 6 | 17% |
| | Chinese | 2 | 6% |
| | Bumiputera Sabah | 27 | 77% |
| | Total | 35 | 100% |
| Education Background | SPM | 1 | 3% |
| | Diploma | 4 | 11% |
| | Bachelor's degree | 19 | 54% |
| | Master's degree | 10 | 29% |
| | PhD | 1 | 3% |
| | Total | 35 | 100% |

Notes: the data is collected based on the pilot study.

**Measures**

The first section in the questionnaire comprises the demographic profile. The next section represents the variables for this study. All latent variables were measured based on previously validated measurements. For this study, credibility that consists of trustworthiness (α=0.706) and expertise (α=0.793) dimension of endorser attributes are measured by adapting from Ohanian (1990). The 5 likert scale was measured at state level of respondent's agreement or disagreement (5=strongly agree) (4= agree) (3= neither disagree nor agree) (2 =Disagree) (1=strongly disagree). Highest value designates the greater support.

Table 2 indicates the validated measurement for the estimation procedure used to measure the variable for this study.

Table 2: Estimation Procedure

| Category | Variable | Dimension | Source | Item |
|---|---|---|---|---|
| Dependent Variable (DV) | Pro-environment Intention | - | Lim et al., 2018<br>Ohanian, 1990 | 4 |
| Independent Variable (IV) | Source Credibility | Expertise | Lim et al., 2018<br>Ohanian, 1990 | 3 |
| | | Trustworthiness | Lim et al., 2018<br>Ohanian, 1990 | 4 |

**Findings**

Table 3 shows the Inter-Item Correlation. This explains trustworthiness has strong relationship with pro-environment intention compare to expertise. The coefficient of correlation range between variable showed 55.6 percent to 79.6 percent. This indicates that, the correlation among the independent variable is relatively high and might detected with the presence of a multicollinearity problem.

Table 3: Inter-Item Correlation

| | Expertise | Trustworthiness | Pro-environment Intention |
|---|---|---|---|
| Expertise | 1.000 | .796 | .556 |
| Trustworthiness | .796 | 1.000 | .684 |
| Pro-environment Intention | .556 | .684 | .1000 |

As mentioned in the methodology, as the requirement to conduct a statistical analysis, the parametric test required to fulfill the assumption of normality. Based on the normality test using shapiro-wilk (*W*) for both dimension *p*-value is at the significant result where p < .001***. This indicates the null hypothesis on the normality test was rejected and revealed that a pilot data failed to meet the normality assumption. Therefore, the non- parametric test was conducted to test the relationship.

Table 4 above shows a chi-square test for independence. From the result above, P-Value p < .001 (***) for both independent variable (expertise & trustworthiness) points out there is a significant association between the dependent variable (Pro-environment intention) and independent variable (expertise & trustworthiness).

Table 4: Chi-Square χ2& P-Value

| | Expertise | Trustworthiness |
|---|---|---|
| Pro-environment Intention | | |
| Chi square | 0.000*** | 0.000*** |
| P-value | (0.000) *** | (0.000) *** |

Note: The value in the parentheses are p-value indicate significant at 99% (***), 95% (**) and 90% (*).

The new insight of this paper has been discussed. Underlying the Tri-Partite model in this study, it was found that source credibility consists of two dimensions (trustworthiness and expertiseness) are predictor to pro-environment intention that imply positive relationship. Therefore, the results from the analysis are consistent with the objective of the study. This result supported Till and Busler (2000)'s study, trustworthiness and expertise have positive on the attitude and intention. However, there was contradicting finding reported against in Lim et al., (2018), that source credibility (trustworthiness and expertise) of social media influencer found to be not significant towards the attitude and intention.

Nevertheless, it is too early to generalize because this finding is based on pilot study. Therefore, further research is required to be conducted.

**Limitation and recommendation for future research**

This research still needs a room for improvement. This study can be extended by incorporating the effective advertising as the mediating variable in relation between sources credibility and pro-environment. This relationship could be more effective by putting a good strategy on an effective adverstising on any environment activities. Other than that, according to the normality test, shapiro-wilk (*W*) for both dimension, *p*-value is at the significant result where p < .001***. Hence the closer *W* to one, the more normal the sample is. This indicates the data set is not normal. Therefore, this will suggest for the further research to test data using the Smart PLS with broaden sample population to enhance and advance the generalization of the outcome. Smart PLS is better suited for proposition development by exploring the relationship between variables (Urbach & Alhemann, 2010). In addition, PLS is the most prominent method attributed to non-normal data and small sample size, (Hair et al., 2014).

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# The relationship between service quality and customer satisfaction among millennials in the hospitality industry: Technology adoption propensity (TAP) as moderating factor

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**Keywords**
Hospitality Industry, Customer Satisfaction, Service Quality, Millennials, Technology Adoption Propensity (TAP)

**Abstract**

*With the ever fast development of technology, the Millennials tend to fully utilizing the technology for everything, from booking, check-in hotels, paying bills, and comparing and looking up places to eat and shop. In order to remain competitive in the hospitality industry, hotels need to revisit their service quality as a whole. So far, limited studies have been done to look into how the millennials perceive service quality specifically in hotels. As the characteristic of millennials are heavily influenced by the current trend of use of technology, thus, it is noteworthy to examine their perception in service quality and service satisfaction provided by the hospitality industry. Hence, this paper aims to determine the relationship between service quality and customer satisfaction in hotel industry among the millennials. In addition, this paper also hopes to determine the role of technology adoption propensity as a moderator towards the relationship between service quality and customer satisfaction among millennials in the hospitality industry.*

## 1.0 Introduction

Malaysia is a country that is blessed with beautiful landscapes of untouched natural wonders like Cameron Highlands, Mount Kinabalu, Langkawi, Niah Cave, Tungku Abdul Rahman Marine Park etc, according to Malaysian Investment Development Authority [MIDA] (2018), Malaysia has "a breadth of beautiful landscapes, a depth of cultural experiences, and the world-renowned Malaysia Truly Asia slogan, it's no wonder that the tourism industry in Malaysia has effectively stimulated the nation's economy for the past decade". MIDA (2018) stated that Malaysian tourism sector is one of the twelve National Key Economic Areas (NKEAs), thereby been identified as one of the key contributors to the Malaysian economy. Malaysia has proven itself as a prominent player when it is one of the top ten tourism destination (MIDA, 2018).

In the ever competitive and challenging business world today, especially in the hospitality industry, the trends and lifestyle of the millennials (those born between 1981 to 1996), (Pew Research Center, 2018) affected the way hospitality business is conducted. The millennials generation tends to have the high tendency of using technology for their day to day routine for example pay bills on line, check-in hotels online, looking for venues for dining, on-line shopping and many more, this is due to the fast pace of technological development and advancement which millennials have an attraction to fully utilize it (LinkedIn, 2017).

Parasuraman and Colby (2014), mentioned that there is tension caused between the positive aspect which is the increased value and the negative aspect which is having to learn and develop trust when adapting the new ways of conducting business, as service providers, employees and customers must face the technological revolution. Before the advancement and sophistication of technological application many companies and their managers have been busy with the conversion of the bricks-and mortar distribution system into electronic system with self-service interfaces. Parasuraman and Colby (2014) note that "going forward, as technology revolutionizes services, managers must cope with more complex challenges associated with delivering innovative service experiences, while ensuring that customers are receptive to those experiences, and potential adverse effects on employee are minimal".

Hence, as generation change hotel business have to make the necessary changes to remain competitive in the stiff competition of the hospitality industry and its service quality. However, the

insufficient research done to investigate how the millennials perceive service quality of the service industry (Md Salleh et al, 2010). As the characteristic of millennials are heavily influenced by the current trend of use of technology and IT savvy (Bannon, Ford & Meltzer, 2011). Therefore, their perception in service quality and service satisfaction provided by the hospitality industry are unknown.

According to Parasuraman and Colby (2014) they mentioned that "*Technology-triggered transformation in services is likely to accelerate in the future because current technologies are increasing rapidly in speed, capacity, connectivity, functionality, and ease of use, while potentially ground-breaking innovations are still nascent*".

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Hence, as generation change hotel business have to make the necessary changes to remain competitive in the stiff competition of the hospitality industry and its service quality. However, the insufficient research done to investigate how the millennials perceive service quality of the service industry (Md Salleh et al, 2010). As the characteristic of millennials are heavily influenced by the current trend of use of technology and IT savvy (Bannon, Ford & Meltzer, 2011). Therefore, their perception in service quality and service satisfaction provided by the hospitality industry are unknown.

Sabah is one of the state in Malaysia that is the second gateway into Malaysia catering both local and international visitors, Sabah Visitors by nationality 2015, 2016, 2017 & 2018, (STB, 2019) and Kota Kinabalu International Airport being the second busiest airport in Malaysia (Worldatlas, 2018), the statistical figures show a steady positive consistency of international and domestic visitors to Sabah, it is an definitely a hub and opportunity for the retail, wholesale, hotel & restaurant (Food & Beverage) industry to take advantage of this attraction thus improve revenue and in order to contribute to Malaysia's GDP (Gross Domestic Product). Table 2.1 and Figure 2.1 shows the total domestic and International visitors for the year 2015, 2016, 2017 and 2018.

Table 2.1: Sabah Visitors Arrival for the year 2015, 2016, 2017 and 2018 (adapted from Sabah Tourism Board, 2019)

| YEAR | MALAYSIAN | INTERNATIONAL | TOTAL |
|---|---|---|---|
| 2015 | 2,197,800 | 978,426 | 3,176,226 |
| 2016 | 2,299,132 | 1,128,776 | 3,427,908 |
| 2017 | 2,449,556 | 1,235,178 | 3,684,734 |
| 2018 | 2,517,846 | 1,361,567 | 3,879,413 |

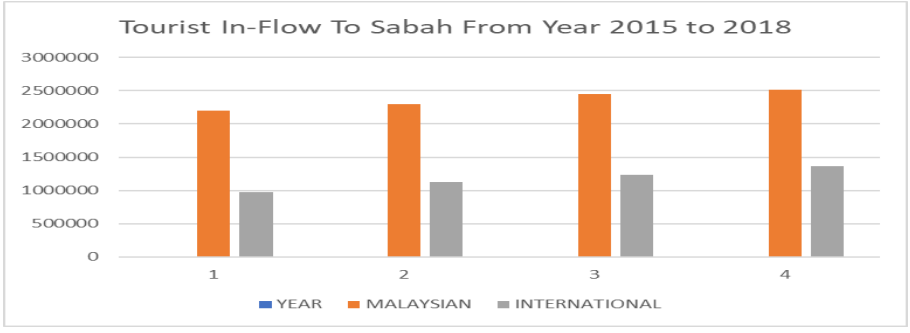


Figure 2.1: Sabah visitor arrival for the year 2015, 2016, 2017 and 2018 (adapted from Sabah Tourism, 2019)

In spite the uncertainty of the world's economy and the current exchange rate of Malaysian Ringgit which is traded at RM 4.0725 against the US Dollar (USD) (Bank Negara Malaysia, 2019). The state of Sabah tourism industry indicates a 7.9% increase from 2015 to 2016 and shows steady increase of 5.3% from the year 2017 to 2018 (refer to table 2.1 and figure 2.1).

Out of the travellers studied in 2018, the demographic profile of the international visitors in the fourth quarter of 2018, consists 57% were aged between 21 to 40 years old which falls under the category of millennials (STB, 2019).

**2.0 Literature Review**

According to authors such as Crick and Spencer (2011), Barrow, Powers and Reynolds, (2012), Wood (2013), has mentioned that the hospitality industry business cannot do without the essential structural components. Being polite and well-wishing meetings, greeting and appealing to guests by name, customers' need foresights and their correspondence, care of guests, polite behaviour with their customers, tolerance with respect to the guests, involving guests in various activities, and polite farewell are emphasized as the crucial elements.

Bagdan (2013), has mentioned that "the hospitality industry is the service industry" and it encompasses accommodation, catering sectors which includes travel agencies services as well. Barrows et al., (2012) and Bagdan (2013), and majority of authors have divided hospitality industry as number one the accommodation section and number two the food and beverage section.

According to Bagdan (2013), the vital role in the hospitality industry played by the customer, this is because the success of the business depends on satisfying the customers' needs. Caruntu, and Ditoiu, 2014 has mentioned that hospitality service providers must look for new ways to meet customers need and customers satisfaction to be fulfilled. In addition, Langviniene & Daunoravicute (2015) also highlighted the importance to ensure that customers' needs are met with high quality and high level of service in consistency as service is deemed intangible.

Langviniene & Daunoravicute (2015) and Litos, Politis, Grigoroudis, & Moustakis (2011) suggests that product innovation (i.e. service innovation, product innovation, administration innovation) is one of the influencing factors to consider which contribute to the success of hospitality business model.

**2.1 Millennials**

According to Techtarget Network [TN], (2018), they defined the millennials as generation Y, or the Net Generation and they are the demographic cohort that directly follows Generation X. The term Millennials is usually considered to apply to individuals who reached adulthood around the turn of the 21st century. The exact definition will vary from one source to another. According to TN (2018), they stated that "Howe and Strauss define the Millennial cohort as consisting of individuals born between 1982 and 2004".

According to English Oxford Living Dictionaries, millennial (noun) is defined as "people reaching young adulthood in the early 21st century (English Oxford Living Dictionaries [EOLD] on-line, 2018).

According to business dictionary online (2018), millennials are referred to as "the generation that follows Generation X, with birth years ranging from the early 1980s to the early 1990s. Many parents of this generation were Baby Boomers, thus making it the largest generation since the boomers. This generation is more likely to lean liberal in their political ideology, less likely to practice religion than previous generations, and grew up in the age of technology and therefore are very versed in technology. Also known as Generation Y".

Therefore, as there are no one definite definition for millennial and through the literature it varies from one author to another. Hence, in this study the millennials will refer to those born between 1980 to 2000.

**2.2 Characteristic of Millennials**

According to TN (2018) mentioned that "millennials grew up in an electronics-filled and increasingly online and socially-networked world. They are the generation that has received the most marketing attention. As the most ethnically diverse generation, Millennials tend to be tolerant of difference. Having been raised under the mantra follow your dreams and being told they were special; they tend to be confident". While largely a positive trait, the Millennial generation's confidence has been argued to spill over into the realms of entitlement and narcissism (TN, 2018).

The millennial generation who are born between 1980 and 2000 (Affolder, 2017) are characterized by Strauss and Howe (1991) as being protected, by both their parents and society, and because they are driven to improve the world around them, by their virtue. This generation is "possessed of rational minds, a positive attitude, and selfless team virtue" (Strauss & Howe, 1991, p. 342) (Sarah Keeling, 2003).

Social and economic contexts that are unique from previous generations, where exposed to the millennials (Levenson, 2010), such as the expansion of the digital technology and the media (Lancaster and Stillman, 2002). Prior research characterizes them as being individualistic, technology savvy, mature, sophisticated, and well educated (Syrett and Lammiman, 2003) (Calvo-Porral, Pesqueira-Sanchez & Medín, 2018).

According to Affolder (2017), mentioned that "among many millennials, the demand for greater transparency has coupled with a high level of comfort in the speed and potential to demand change in the digital world". This will indeed, grow as society reorganizes and media technology eventually replaces the face-to-face communication (Affolder, 2017).

Besides higher rates of materialism and narcissism, millennials have high self-esteem, unrealistic expectation and impatient. (Twenge, 2010); they are group oriented, but with a strong sense of identity (Gupta, Brantley, & Jackson, 2010). Similarly, previous studies describe them as being highly responsible, independent, and consumption oriented (Thompson and Gregory, 2012). In terms of their consumption behaviour, previous studies found that the millennial generation has a strong desire of products and services that match their lifestyle and personality, which serves them as a form of self-expression (Gupta et al, 2010; Calvo-Porral, et al, 2018).

**2.3 Millennials and Technology**

According to Rosdi (2017) stated that "technology has changed the business rule by providing information on all services available virtually all over the world, which means that the potential client can be from any resident of the world. Technology also expands marketing opportunities". Example of these technologies are telephone and walkie-talkie, wireless communication systems that enable voices, text, and data communication among employees, managers, departments, and guests are now being adapted by hotels and restaurants (Rosdi, 2017).

According to Astroza, Garikapati, Bhat, Pendyala, Lavieri and Dias, 2017 note that "smartphones, GPS navigation devices, Bluetooth devices, tablets, phablets and other mobile wireless devices are being used by people of all walks of life around the world". In Astroza et al (2017) reported that statistics suggest that more than 90% of all adults in the United States have a cellular telephone, with 70% of these individuals owning smartphones (Poushter, 2016; Astroza et al, 2017).

According to Astroza, Garikapati, Bhat, Pendyala, Lavieri and Dias, (2017), even in emerging economies of the world, such as Chile, China, Lebabon, and Malaysia, the smartphone ownership rate is at more than 50% of the adult population. It also noteworthy that most children, even as young as 4 years old, own and regularly use smartphones (Kabali, Irigoyen, Nunez-Davis, Budacki, Mohanty, Leister and Jr Bonner, 2015)

The millennials behaviour is influenced using technology readily available to them and that they are born into a world full of digital technology (Calvo-Porral et al, 2017). Therefore, they have great technological expertise and a great ability to easily access vast amounts of information (Wolburg and Pokrywcznski, 2001; Calvo-Porral, et al, 2018).

The existence of the internet has a dramatic effect on the way how we communicate. It has broken down barriers, which traditionally prevented billions of citizens from collaborating and participating in public life. This mega-trend means that previously disempowered members of society can connect with others and effectively push for change (Affolder, 2017).

An estimated 3.5 billion people now have access to the internet. By 2020, 9.2 billion people will have mobile devices. According to Ericsson (2014) reported that "Smart phones, of which there are currently 2.6 billion subscriptions globally, are predicted to rise to 6.1 billion by 2020" (Affolder, 2017; Ericsson, 2014).

The vast variety of media such as using the social blogs and social platforms attracts the millennials generation (Hershatter and Epstein, 2010), and depend more on their peers' opinions when making purchase decisions (Valentine and Powers, 2013). Likewise, millennials spend much of their time in virtual spaces, where they do not only enjoy relationships in the social network, but also share their knowledge and communicate and interact with each other (Prensky, 2001; Calvo-Porral, et al, 2018).

According to TN (2018) note that "millennials grew up with computers, the Internet and the graphical user interface (GUI). This familiarity makes them adept at understanding interfaces and visual languages. They tend to adjust readily to new programs, operating systems (OS) and devices and to perform computer-based tasks more quickly than older generations". Millennials might be the generation that can execute multitasking skills due to the current use of technology and availability of it (TN, 2018).

According to United Nation A-UK (2018) as noted by Janish, "as the first generation of digital natives, millennials are empowered by technology. Social media is the number one activity on the web, and, for young people, it is the top source of news, the biggest influence on voting behaviour and the reason that millennials are more likely to give to global, as opposed to local, causes."

UNA-UK (2018) added that the ALS Ice Bucket Challenge is a great example of technological empowerment. Campaigners were recorded pouring icy water over themselves before posting the video on social media and nominating someone else for the challenge. The campaign went viral, raised over $100 million and engaged leaders from all sectors and regions, from Bill Gates to Lei Jun.

**2.4 Service Quality**

Many studies clearly support the theory that service quality, as perceived by consumers, is derived from a comparison of their expectations of the service they will receive with their perceptions of the service they did receive (Cadotte and Turgeon, 1988; Martin, 1986; McCleaty and Weaver, 1982; Parasuraman et al., 1986). Service quality, then, is the direction and degree of difference between expectations and perceptions; that is, the better perceptions are than expectations, the higher the level of perceived service quality; the worse perceptions are than expectations, the lower the level of perceived service quality (Knutson, Stevens, Wullaert and Patton, 1990).

According to Mei, Dean and White, (1999), in the hospitality industry, other attributes such as imprecise standards and fluctuating demand have been identified. Service quality has been linked to the success of hospitality businesses (Kotler, 2002) (Gamor, Amissah, Adutwum, and Boakye, 2014).

Services are intangible (Bateson 1977, Berry 1980, Lovelock 1981, Shostak 1977) because they are performances rather than objects, precise manufacturing specifications concerning uniform quality can rarely be set (Parasuraman, Valarie A. Zeithaml, & Leonard L. Berry, 1985). Parasuraman et al, later refined their proposed to five dimensions: tangibles, reliability, responsiveness, assurance and empathy.

The development of the measurement of service quality is referred to as "SERVQUAL". There were scholars that have modified, adapted, or completely revised the models proposed by Parasuraman et al. (1985) based on service attributes, delivery, performance and sector, improving the gaps and limitations of the original models (Seth, Deshmukh and Vrat, 2005). Cronin and Taylor (1992) developed a performance only measurement model of service quality called "SERVPERF" by illustrating that service quality is a form of consumer attitude, and the performance only measure of service quality is a better means of measuring service quality (Wattanakamolchai, Singal & Murrmann, 2013). Nevertheless, SERVQUAL remains the most commonly used models for service quality in the service industry today.

SERVQUAL have been widely utilized both in the academic and the industry by the practicing managers throughout the world with multiple studies which questioned conceptual and operational from which the formation of the base of the model (Wong, Dean and White, 1999; Babakus and Boller, 1992; Carman, 1990; Teas, 1994). When evaluating customer's experience in the hospitality industry service quality is an important component in its evaluation (Knutson, Beck, Kim and Cha, 2010).

**2.5 Customer Satisfaction**

Based on past research some have found that according to industry experts for hospitality players to be focusing on the future growth, are the ones that who put customer experience first, meeting the demanding customer service and quality expectation (Keith and Simmers, 2013; Litchford, 2007). According to Choi and Chu, 2001, hotels that can retain, maintain, satisfy and attract customers are inclined to survive. The chance of customers to return to the hotel depends on the level of customer's satisfaction which is influenced by the customer's perception on how they value such services (Keith and Simmers, 2013; Choi and Chu, 2001; Sim, Mak and Jonas, 2006). Customer satisfaction is the essential key to have the competitive advantage in the market which contributes to business growth (Kuo, Cheng, Cheng and Lin, 2015; Finn, 2012). With the growth of the service industry, the customer satisfaction is valued (O'Niel and Palmer, 2003).

According to Barnes, Beauchamp and Webster, 2010, that there has been a numerous literature that put emphasis of the importance of meeting customers expectation to ascertain customer satisfaction in any service-oriented setting (Parasuraman, Zeithaml and Berry, 1985). Barnes et al, 2010 noted that "firm must go beyond merely satisfying customers if customer loyalty is to be achieved".

In view of customer satisfaction, it has many past authors has agreed that it will greatly contribute to the positive increase of return on investment, increase in market share and also contribute to the profitability of a firm (Hackl and Westlund, 2000; Barsky and Labagh, 1992; LeBlanc, 1992; Stevens, Knutson and Patton, 1995; Legoherel, 1998; Fornell, 1992; Halstead and Page, 1992). Nadiri and Hussain, 2005 noted that for hotels to remain competitive they must meet and exceed their customer's expectations. This is to ensure that hotel's products and services are noticeable among competitors (Nadiri and Hussain, 2005).

**2.6 Technology Adoption Propensity (TAP)**

It was noted by Parasuraman (2000) that customer's increased in the level of difficulty in comprehending and coping with the sophistication of technology products and services are indeed both going in line together in terms of its innovation. Marciel, Ferreira and Rocha, (2013) noted that from the perspective of business viewpoint and research on customer behaviour, it is relevant to understand the factors that leads to consumers action to adopt new technologies.

Some studies have investigated the assessing the attributes like ease of use, reliability, speed of delivery, security and control with regards to the quality id e-service and self-service technologies (Dabholkar 1996; Elliott, Meng, and Hall 2012; Zeithaml, Parasuraman, and Malhotra 2002). In the context of technology enabled service (TES), in general researchers agreed that cognitive evaluation of service quality pave way to emotional response (Wang, Kam and Sparks, 2016).

TAP is to gauge or measure how consumer's propensities to adopt new technology by utilizing the multiple-item scale (Ratchford and Barnhart, 2012). From the development of the measurements by the authors and researchers the TAP show that a consumer's tendency to use new technologies, which can be measured by the 14-item index that combines assessments of consumers' positive and negative attitudes towards technology (Ratchford and Barnhart, 2012).

The adoption process is considered as "*the process through which an individual passes from gaining initial knowledge of an innovation, to forming an attitude toward the innovation, to making a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision"* (Cavusgil, 2007), in order to increase the effectiveness of sales processes firms should take into account the technology adoption processes (Garcia and Payan, 2016).

**3.0 Expected Outcome**

Based on the above literature review the following conceptual framework is proposed (refer to figure 1.1 conceptual framework) for the relationship of service quality and customer satisfaction with technology adoption propensity (TAP) as a moderating factor.

Conceptual Framework

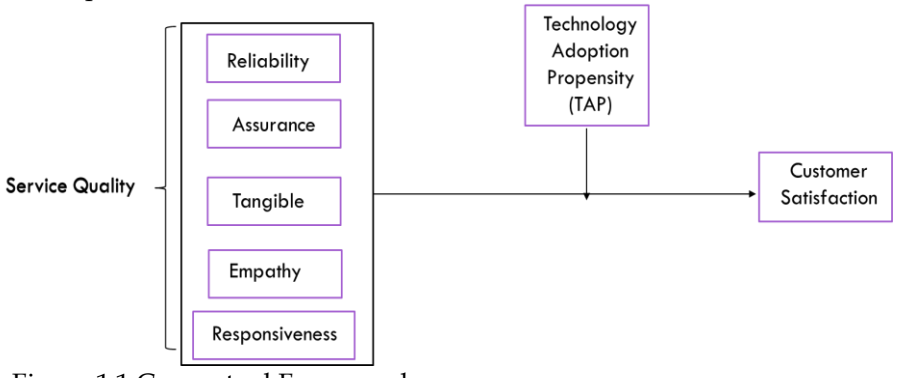


Figure 1.1 Conceptual Framework

The figure 1.1 shows the conceptual framework of the proposed study whereby it is adapted from the service quality model by Parasuraman, Zeithaml & Berry, (1988) defined service quality as "*the ability*

*of the organization to meet or exceed customer expectations*". The independent variable is the service quality which has five dimensions; reliability, assurance, tangible, empathy and responsiveness. The dependant variable is the customer satisfaction. Whereby the moderating factor is the technology adoption propensity (TAP).

From the derived framework hypothesized that there is a positive relationship between service quality and customer satisfaction and technology adoption propensity strengthen positive relationship between service quality and customer satisfaction.

**4.0 Conclusion & Discussion**

The influence of millennials are significantly important as they are the generation that dictates the trend of business, "*They have grown up with technology, and are technology so much that half of them would rather give up their sense of smell than a critical device*."(Gibson and Sodeman, 2014). They are the next generation that will be equipped with tools and move forward for the betterment of the future in terms of economy, geopolitical and environmental crisis (Hershatter and Epstein, 2010).

To gauge the technology adoption propensity (TAP) is important inorder for hospitality practitioner and managers to know the changes in trend of the market especially millennials that are travel through Sabah and millennials consist of 57% of the travellers from January to December 2018 adapted from Sabah Tourism Board [STB] (2018). Hence, the emphasis of TAP is through the framework proposed. This may provide hospitality managers with information to consider adopting technology meeting the costumers needs and expectation so to remain competitive and relevant in the market.

Therefore, a future study must be done to determine the framework and the influence of TAP proposed this paper and it must be imperially tested using quantitative method and use of PLS-SEM (Hopkins, Georgia and College, 2008; Wong, 2013).

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# The LGBTQAI+ community is fascinated about luxury brands: Exploring drivers of luxury consumption in South Africa

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**Keywords**
luxury consumption, LGBTQAI+ consumers, materialism, brand consciousness

**Abstract**

*LGBTQAI+ consumers are avid of luxury brands. Research shows that their luxury brands consumptions is higher than heterosexual consumers and they have different attitudes and behaviours from heterosexual consumers, towards luxury brands. Despite luxury consumption exemplifying an important component of modern LGBTQAI+ culture, and LGBTQAI+ consumers representing a growing and profitable niche market, limited research has focused on understanding the drivers of luxury consumption among these consumers. Therefore, this study investigates the underlying motivations for luxury consumption among South African LGBTQIA+ consumers. A web-based self-completion questionnaire was used to collect data. A total of 157 questionnaires were collected. Using Structural Equation Modelling analysis, the results indicated that materialism, perceived quality and brand consciousness positively and significantly influence luxury consumption among LGBTQIA+ consumers. In addition, the results also revealed a negative relationship between exclusivity and luxury consumptions. The findings of this study will assist luxury brands and marketers to better understand the LGBTQAI+ consumers. Luxury brands need to adjust their plans to accommodate the LGBTQAI+ market and ensure that their marketing efforts are inclusive of this valuable market segment.*

# The significance of GUNA personality and its implication for marketers - findings from empirical study of generation Z in India

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**Keywords**
Advertisement, Perception, Guna, Personality, Self-Congruity, Consumer-Behavior

**Abstract**

*India will become the youngest country by 2020 with nearly 64 per cent in the working age. Shaped by its 440 million millennial and 390 million Gen Z population, (Goldman Sachs Report, 2016). Indian youth, especially the urban middle class would rewrite the consumption story with sustained growth in purchasing power and changed consumption patterns. Generation Z in India are intense users of smart phones, and social media. The Goldman Sachs report, 2016 also revealed that India's Generation Z is likely to usher in the next era of consumerism in India.*

*The survival and growth and success of any organizations in globalized era, will be influenced by its customer centric approach. The successful Organization has the ability to recognize, the true personality of consumer and implementing their strategies so as to satisfy their present and latent demands.*

*The paper makes a case for an alternative perspective of study of Consumer Behaviour based on TriGuna Concept of Personality, or Vedic Personality which has its root in Ancient Indian Text. Triguna Personality considers physiological and psychological factors, inherent energies, temperament, food habits and gives a holistic view of personality. Study of this would give clues to the Marketer for organizing marketing communication, which would lead to success in the marketplace. The paper is based on empirical findings of Generation Next with respect to their Guna Personality, through an online survey, using questionnaire based on Mysore Triguna Scale. The paper decodes the various personalities of Generation Z in India, using the Guna theory using statistical technique of Karl Pearson Correlation, and relates popular advertisement campaign of 2017-18 with Guna Personality of Generation Z. The findings would be crucial for marketer specially to cater to the aspirational self of Generation Z.*

## 1. The Introduction

Consumer Behaviour is a Western Concept and has its roots in Psychology. Psychology as a discipline as a branch is learning developed by Western World. However, Mind as an abstract concept has been studied, in Ancient India. It was studied under the purview of Indian Medical Science, called Ayurveda, which dates to 5000 years back and has roots in Vedic times. The essence of Ayurveda or the Medical Science of Ancient India was the study of body, mind and soul holistically. This insight about the physiology and psychology of human being was derived from various Indian philosophies like Vedanta, Samkhya, Patanjali's Astang Yoga.

Personality is studied and understood with reference to two systems in Indian traditions, according to Shilpa S and Murthy (2011). They further state, that, Personality was studied in Ancient India, as a part of Indian Medical Science called Ayurveda was developed from Atharvaveda, which stressed on the five primordial life forces and its influence on the biology of the person. Ill Health was ascribed to the imbalance between the Tridoshas – Vata, Pitta and Kapha (VPK) and their psychological correlates, Trigunas Namely Sattva, Rajas and Tamas (SRT). Thus, Personality according to the Ayurveda has two aspects – one was biological and the other was psychological. (Shilpa and Murthy,2011).

According to Murthy et al;(2007), Human beings have all the six namely the Tri Doshas – Vaat, Pitta and Kapha (VPK) and Trigunas – Sattva, Rajas and Tamas (SRT). Their interplay and the combination and dominations create health or ill health. Depending on the circumstances, the dominance of the *gunas* keep changing, due to its dynamic nature, a person experiences bout of anger, happiness, fear and sadness. The study of the *gunas*, their movement in people, and how they affect our daily life and behavior leads to

classification of different personalities according to the Ancient Indian Text. This has led the authours (Shilpa and Murthy, 2011a) to develop the Mysore Triguna Scale which is validated and accepted for assessing Guna Personality.

For the purpose of primary data collection online questionnaire was made adapting the above-mentioned Mysore Triguna Scale, along with three popular advertisements and was answered by 53 Post Graduate Management Students of University of Mumbai, the convenience sampling technique was used for data collection. The study also examined the correlation between the Guna Personality and the Persona depicted in the three popular advertisements, of 2017-18. The findings suggest that respondents, belonging to Generation Z from Mumbai, India, exhibit either Satvik or Rajasvik Personality. This study also indicated about the marketing communication for different Guna Personalities and highlighted the significance of aspirational personality, self-concept and self-congruity which would result in purchases in the marketplace.

**2. Literature Review**

Consumer behaviour is not limited to the physical purchase of products or subscribing to a service. It covers a wide range of activities from the problem awareness stage through post-purchase behavior ideas, or experiences to satisfy their needs and desires. (Onu et al;2014). Consumer Behaviour is a careful examination of people's wants, their influencers, their demographics and personality as well as their thought processes which leads to buying one product instead of another and the study of their pattern of buying behavior. What a consumer purchases, when and how he or she purchases are influenced by their personality. The products consumer purchase or the services they subscribe, reflect their personality. Personality is a set of distinguishing human psychological traits that lead to relatively consistent and enduring responses to environmental stimuli (Mullin, 2010).

According to the Western Psychologist, there are various types of Personalities:

The Psychodynamic Theory
The Psychoanalytic Theory
Neo Freudian Theory
Trait Theory
Behavioural Theory
Humanistic Theory
Socio- Learning Theory

**The psychodynamic theory** is a theory in psychology founded on the idea that human personality is based on the interaction of instinctual drives and unconscious forces within the individual. Sigmund Freud developed theory which had named childhood experiences and instincts with concepts like Id, Ego and SuperEgo. (Udo-Imeh, et al 2015). The id operates on the pleasure principles; it contains the libido which demands immediate gratification of instinctual and biological desires such as sex and aggression regardless of the consequences (Schiffman & Kanuk, 2010). The superego is the moral and ethical dimension of the human psychic. The superego influences the individual with the moral principles and restricts the free play of id. The Conscious Ego is the balancing factor between the Id, and Superego, and weighs both the cost and benefits of an action, before deciding to act upon. (Udo-Imeh, et al; 2015.)

**The Neo-Freudian** consented to Freud, tripartite structure of personality; Alfred Adler developed the school of individual psychology. Adler's believed that individual's strives to put in efforts and overcome feeling of inferiority by striving for superiority (Schiffman & Kanuk, 2010) He theorized that when people are encouraged and appreciated, they respond positively and if they are discouraged, individual acts in an negative way, by challenging, withdrawing, or giving up. Harry Sullivan researched on Freudian theory and believed that, personality can only be understood by observing people's behavior in interpersonal situation. (Udo-Imeh, et al; 2015.)

**Trait Theory** suggests that personality is made up of a set of quantitative measurable characteristics, called traits. Traits are inclinations, individual preferences and are relatively stable. The main distinction between psychodynamic and Neo-Freudian Theories and Trait theory is that, the former was qualitative in nature while the latter is quantitative in nature. Allport created a cluster of 200 related words, which he believed were the "building block" of personality. Cattell (1945) used factor analysis to reduce Allport's list to 16 personality traits. Cattell (1945) was more concerned with using traits as a conceptual tool for

predicting human behavior rather than just understanding it. Others who worked in this area were Eysenck (1947) with three traits like introversion/extroversion etc. This further lead to the development of the 'Big Five' personality framework which consists of agreeableness, extraversion, conscientiousness, openness to experience and neuroticism (Udo-Imeh, et al; 2015).

**Behavioural theory** contends that an individual's personality is the outcome of the interaction between individual factors and environment influences and is linked to learning. This theory believes that, Personality is learned through either classical or operant conditioning and shaped by reinforcement in the form of rewards and punishment. Notable behaviourists include John Watson and Frederick Skinner. Watson believed that personality evolves through learning and believed in classical conditioning. Whereas Skinner believed in Operant Conditioning. They both believed that personality was the human behaviour that can be observed, recorded and measured. (Udo-Imeh, et al; 2015).

**Humanistic theories:** This theory is based on a holistic perspective of personality and life and stresses on creativity, freewill, and human potentials. This theory was put forth by two eminent psychologists, Abraham Maslow and Carl Rogers. Rogers' theory of self-concept suggests that every individual is made up of a tripartite of self – real self, perceived self and ideal self – and these are related. Individuals inherently drive for growth of self-concept which can lead to self-actualization. Maslow's paradigm consisted of a pyramid of need arranged hierarchically from the lower needs to the higher needs (Udo-Imeh, et al; 2015).

**Social learning theory** is an extension and a modification of the behavioural theory. Two major contributors to this school were Albert Bandura and Julian Rotter. Bandura's "social learning theory", suggests that, people learn social behavior primarily through observation rather than through direct experience and as such personality is influenced by social learning. Rotter introduced the concept of 'locus of control' which were basically internal which depended on our action's v/s the actions of uncontrollable variables of the external environment called external locus of control. (Udo-Imeh, et al; 2015).

**Guna Theory of Personality**. This is also called as Vedic Personality, which is an ancient Indian perspective of Personality. According to Ayurveda or Indian medical science, the human body is composed of Doshas, Dhatus and Malas. Further, the *Doshas* are further classified as Vata, Pitta and Kapha. Doshas are natural energies originating in the human body and mind. They govern all physical and mental processes. These doshas were the physical manifestation of the five primordial elements or Panch Mahabhuta according to Ayurveda. Doshas namely Vata is composed of space and air, while pitta is related to the fire and water element and lastly kapha is related to earth and water. Like these biological and physiological body types, there is a corresponding psychological element which is called Triguna. (Shilpa and Murthy,2011a). Triguna is comprised of Sattva, Rajas and Tamas. Vedic Psychology had given an Individual's personality profile which was a combination of Tridoshas as well as Triguna. The Authours of the Mysore Triguna Scale (Shilpa S and Murthy,2011) have developed 16 different types of classical personalities, which are validated, based on the characteristics defined in the ancient Indian texts. They have developed a rigorously validated, personality tool for assessing personality, which can be majorly classified as Satvik, Rajasvikand, Tamasik. (Shilpa and Murthy,2011a). The authours state further that, each dosha gives certain characteristic qualities to the person, while guna would give us insights into his /her dominant traits, beliefs and disposition. Thus, combining both the Tridoshas and Triguna we get a holistic view of personality. The concept of triguna originated in Bhagavad Gita. According to this, Satva trait is dominated by quest for knowledge, compassion and justice. While Rajas is characterized by quest for power, passion, and self-centeredness. Tamas trait is differentiated by dullness, laziness, cruelty. If deliberated from this perspective, Guna Personality has many implications for the Marketers which are discussed in the Discussion Section.

**3. Research Methodology**

For the research under the study, research design adopted, focused on quantitative research study by means of using statistical analysis tool of Karl Pearson Correlation Coefficient, as well as Mode to determine the following:

1. Guna Personality of the respondents – namely students of Post Graduate Management Studies of University of Mumbai, belonging to Generation Z. An online questionnaire survey was administered, which was based on Mysore Triguna Scale (Shilpa & Murthy, 2012). This scale was modified to form an online questionnaire where the students had to answer questions

relating to their Guna and view three popular advertisements and write whether they are relevant or otherwise.

2. Self-Congruity between real Guna Personality (studied above) and Persona described in advertisement and its perception. As part of the survey, the respondents viewed three popular advertisements of 2017-18 in India classified and concurring to three GUNA personality namely Satvik, Rajasvik and Tamasik. Further from the questions posed, the study explored the Guna Personality of the respondent and further examined if there was any correlation between Guna Personality and Persona in the Advertisement.

**Hypotheses of the Study**: The following hypothetical assumptions have been postulated for validations in the course of this study: These set of Hypothesis are for the three Advertisement which were viewed by the respondents, while answering the online questionnaire.

I)$P1H_0$= There is a Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Satvik.
$P1H_a$ = There is No Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Satvik.

II) $P2H_0$= There is a Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Rajasvik
$P2H_a$ = There is No Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Rajasvik

III) $P3H_0$= There is a Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Tamasik
$P3H_a$ = There is No Relationship between the Personality of the Respondent and the Advertisement where the product and persona are Tamasik

**4. Data Analysis and Findings:**

1. Guna Personality of the Respondents based on the Online Survey and Questionnaire adapted from Mysore Triguna Scale.

Based on the Mode Calculation, 33 of the respondents were Satvic Personality, (63% approximately) and 2 (4% approximately) are Tamasic Personality and 18 (34%) are Rasjasvik Personality. Thus, there is a prominence of Satvik Personality among the Post-Graduation Students of Management of University of Mumbai. This also highlights the fact that they all are driven by their quest for knowledge and learning which an important attribute of Satvik Person is.

2. Relationship between Guna Personality and Advertisement Persona

$P1H_0$= There is a Relationship between the Guna Personality of the Respondent and the Advertisement where the product/ persona is Satvik.

$P1H_a$ = There is No Relationship between the Guna Personality of the Respondent and the Advertisement where the product/ persona is Satvik.

Correlation Output

| | | PER | P1 |
|---|---|---|---|
| PER | Pearson Correlation | 1 | .191 |
| | Sig. (2-tailed) | | .172 |
| | N | 53 | 53 |
| P1 | Pearson Correlation | .191 | 1 |
| | Sig. (2-tailed) | .172 | |
| | N | 53 | 53 |

Table 1. Correlation Table Output from SPSS Version 19.

The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. In this case, the calculated P= 0.172, in the above-mentioned table, is greater than 0.05 and

hence there is no correlation between the two variables – namely Personality of the Respondents and the Persona in the Advertisement Campaign. From the above-mentioned statistical table, the study rejects, the null hypothesis, and conclude that there is no relationship between the Personality of the Respondent and the Advertisement where the persona is Satvik

$P2H_0$= There is a Relationship between the Guna Personality of the Respondent and the Advertisement where the persona depicted is Rajasvik

$P2H_a$ = There is No Relationship between the Guna Personality of the Respondent and the Advertisement where the persona depicted is Rajasvik.

Correlation Output

| | | PER | P2 |
|---|---|---|---|
| PER | Pearson Correlation | 1 | -.006 |
| | Sig. (2-tailed) | | .965 |
| | N | 53 | 53 |
| P2 | Pearson Correlation | -.006 | 1 |
| | Sig. (2-tailed) | .965 | |
| | N | 53 | 53 |

Table 2. Correlation Table Output from SPSS Version 19.

The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. In this case, the calculated P= 0.965, in the above-mentioned table is greater than 0.05 and hence there is no correlation between the two variables – namely Personality of the Respondents and the Persona in the Advertisement Campaign are linearly related. From the above-mentioned statistical table, the study rejects, the null hypothesis, and concludes that there is a no relationship between the Personality of the Respondent and the Advertisement where the persona is Rajasvik.

$P3H_0$= There is a Relationship between the Guna Personality of the Respondent and the Advertisement where the persona depicted is Tamasik

$P3H_a$ = There is No Relationship between the Guna Personality of the Respondent and the Advertisement where the persona depicted is Tamasik

Correlation Output

| | | PER | P3 |
|---|---|---|---|
| PER | Pearson Correlation | 1 | -.330* |
| | Sig. (2-tailed) | | .016 |
| | N | 53 | 53 |
| P3 | Pearson Correlation | -.330* | 1 |
| | Sig. (2-tailed) | .016 | |
| | N | 53 | 53 |

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Correlation Table Output from SPSS Version19.

The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. In this case, the calculated P= 0.016, in the above-mentioned table, is less than 0.05 and hence the correlation is significant and the two variables – namely Personality of the Respondents and the Persona in the Advertisement Campaign are related. From the above-mentioned statistical table, the study accepts, the null hypothesis, that there is a Relationship between the Personality of the Respondent and the Advertisement where the product and persona is Tamasik. As the p value is negative value, the implication is that, even though the respondents are either satvik or rajasvik, they concur to the tamasik personality depicted in the advertisement campaign. This can be their aspirational personality.

**5. Discussions and Conclusion**

Studies have proved that consumers buy those products which are compatible with their self-concept and self-congruity (Sirgy, 1982). Further, when the product/service are in sync with the self-image then there is satisfaction about the purchase intention. (Sirgy,1982). The research paper identified the TriGuna Personality of Respondents which was predominately Satvik and Rajasvik. According to the Guna Theory of Personality, when the Satva Guna is dominant, there is an intrinsic aspiration for knowledge, for higher meaning of life and spirituality. Such Consumers can be targeted for new learning, higher education, meditation and holistic living workshops. Since their major characteristic is rationality, the marketing communication must make an appeal to their rationality and higher being. They prefer all kinds of organic and pure foods, clean environment. As regards the Rajasvik Personality, their main characteristic is their love for power and position. Such Consumers can be targeted for lifestyle products and services, including all branded goods and services. Since they are led by passion and activity, the marketing communication addressed to them must stress on doing or action. Tamasic Personality's distinctive feature is their laziness; they are the best target for ready to eat foods, convenience services. They love non vegetarian and spicy foods. are very hard working. The typical profile of a Tamasic Person is someone who works beyond the wee hours. The Tamasic Person is led by their moods/ temperament and thus an emotional appeal works as regards the marketing communication.

Further when the study probed into the correlation between Guna personality and the relationship between Guna Personality and Persona depicted in the three Popular Advertisement of the year 2017-18. According to the study there is no correlation between, Guna Personality and the Persona of the Advertisement Campaign, for the first two advertisements. However, there was a correlation between the Guna Personality and Persona portrayed in the third Advertisement which resonated with the Tamasic Personality. This leads us to the conclusion that, this may be the aspirational persona of the respondent and thus must be examined further.

**6. Limitation and Direction for Future Research**

The current study is limited as generalization of the result is difficult as data is collected from only Post Graduate Students. The sample size could have been stratifying and the questionnaire could have been the original Mysore Triguna Scale and time was also a limitation. An in-depth study, applying Robson (1989) Self- Concept Questionnaire along with Mysore Triguna Scale, with a larger stratified sample.

**7.Scope of the Research**

This research paper explored the concept of Guna Personality and examined its significance for study of buying behavior of Generation Z of India and the correlation between their Guna Personality and their aspirational self. It has given an alternative view of Personality as an influencer for buying behavior and also mentioned about the importance of aspirational self for buying behavior. Millennials in India are digitally connected, brand conscious, with a westernized lifestyle and consumption patterns and are exhibit buying behavior which concur to their aspirational self.

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# The effect of perceived interactivity on marketing communication outcomes of corporate websites

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**Keywords**
Corporate websites, marketing communications, mediated moderation model, perceived interactivity

**Abstract**

*Interactivity has been identified as a crucial element in the digital media; nevertheless, the complex relationship between interactivity and marketing communication outcomes has yielded inconsistent findings. The purpose of this research is to study the underlying mechanisms between interactivity and marketing communication outcomes of corporate websites.*

*This study develops a comprehensive conceptual model that empirically investigates the mediating role of the perceived interactivity in the impact of actual interactivity on marketing communication outcomes of corporate websites; moreover, it tests the moderating role of individual consumer differences on perceived interactivity.*

*To test the model the researcher employed a two-website treatment (highly interactive/low interactive) within-subject design, and a total of 450 participants from greater Cairo of different age groups and educational levels, specializations, and occupations were asked to browse these two websites. After browsing each website participants were requested to fill in an online questionnaire that measured their perceived interactivity, different attitudinal and behavioral measures towards the two websites. This research adopted a conclusive descriptive cross-sectional survey research design which allowed the collection of quantitative data through structured questionnaires. Data collected was analysed using structural equation modeling and multi-group analysis.*

*Findings indicated that perceived interactivity mediates the impact of actual interactivity on attitude towards the website, attitude towards the brand, purchase intention, and co-creation advertising; additionally, it reveals that age, educational level, years of using the Web, years of using the computer and academic major play significant moderating roles between actual and perceived interactivity. Thus, the empirical evidence supports the mediated moderation model. Moreover, this study provides useful insights for advertisers and marketing communication managers on how to effectively develop interactive strategies to reach different target audiences; furthermore, it provides evaluative criteria and guidelines on the updated interactive features that could be integrated into corporate websites.*

## 1 Introduction

With the enormous expansion of the World Wide Web, marketers and advertisers are heavily using this platform to promote their products and are increasingly integrating their corporate websites into their marketing communications mix (Fahmy & Ghoneim, 2016, Song & Zinkhan, 2008; van Noort, Voorveld, & van Reijmersdal, 2012; Zollet, 2014).

Since the unique characteristic of the web that distinguishes it from other communication vehicles is inherited in its interactive nature (Coyle & Thorson, 2001; Liu & Shrum, 2009; McMillan & Hwang, 2002; Voorveld, Neijens, & Smit, 2011), the effective use of the corporate websites as marketing communication channels involves harnessing the power of its inherent interactivity (Fahmy & Ghoneim, 2016). Nevertheless, the potential of the web as a marketing communication medium has not been completely exploited; the justification for this was that advertisers and marketers did not completely apprehend the concept of interactivity and its effect on the marketing communication outcomes (Johnson, Bruner, & Kumar, 2006; Wu, 2006).

In order to contribute towards further understanding of interactivity and its impact on different marketing communication outcomes of corporate websites, this study will examine the relationship

between the interactive features and the marketing communication outcomes of a corporate website by proposing a comprehensive model that empirically examines the mediating role of perceived interactivity in affecting actual interactivity's impact on different marketing communication outcomes. Furthermore, it will examine the role of the individual consumer differences between users in moderating the effect of actual interactivity on perceived interactivity.

## 2. Literature Review

### 2.1 Conceptualizing Interactivity

The researcher's extant review of the interactivity literature unfolds the dichotomy of the interactivity concept; where scholars have categorized them on the basis of the feature-based approach and the user-based approach (Lee, Lee, Kim, & Stout, 2004; Liu & Shrum, 2002; McMillan, 2000, 2002; Wu, 1999). Several communication scholars asserted that the first step in understanding the effects of interactivity is to explore the interactivity concept from both the feature-based and the user-based perspectives (McMillan, 2002). Thus, the researcher will first review the interactivity literature from the marketer's perspective and then the consumer's perspective.

#### 2.1.1 Interactivity from the Marketer's Perspective

A marketer's perspective tends to view interactivity as a characteristic, feature, capability or property inherent in a medium, or as an interaction system that enables an interaction between two parties (Wu, 2006, p.88). Accordingly, actual interactivity could be defined in terms of the media features or its inherent capabilities that enables the creation of interactive content or/and messages, or potential interaction in general (Wu, 2005).

#### 2.1.2 Interactivity from the Consumer's Perspective

Scholars who define interactivity from the consumer's perspective are likely to view it as "a psychological state experienced by a consumer during an interaction, message responsiveness perceived by a consumer, or an individual trait" (Wu, 2006, p.89). In that scheme, Lee et al. (2004) found that it is the user's subjective perception of the website that distinguishes a web site from another; it is not the mere presence of features.

Many interactivity scholars have stressed the importance of studying the relationship between the actual interactivity and the perceived interactivity of corporate web sites (Lee et al., 2004; Liu & Shrum, 2002; McMillan, 2002; Song & Zinkhan, 2008). However, little empirical research has examined this relationship (Song & Bucy, 2008; Song & Zinkhan, 2008; Wu, 2005).

### 2.2 Marketing Communication Outcomes

The extant review of the interactivity literature reveals that the interactivity's impact on the marketing communication outcomes has yielded inconclusive results. In that context, some communications scholars argued that in order to gain a clear understanding of the media effects of interactivity, the interrelationship between these two independent constructs must be recognized (Bucy & Tao, 2007; Wu, 2005); and their independent influence on the outcome measures should be examined (Bucy & Tao, 2007). Accordingly, the researchers will investigate the mediating role of perceived interactivity in the effect of actual interactivity on the attitude towards the website, attitude towards the brand, purchase intention, and co-creation advertising.

#### 2.2.1 Attitude towards the website

The studies which examined the relationship between actual interactivity and the attitude towards the website yielded inconsistent findings (Boushra, 2008; Coyle & Thorson, 2001; Sundar 2000). On the other hand, the findings of the studies that examined the relationship between the perceived interactivity and the attitude towards the website found that perceived interactivity has a positive effect towards the attitude towards the website (Ahn, Hong, & Pedersen, 2014;; Hwang & McMillan, 2002; Jee & Lee, 2002; Song & Zinkhan, 2008; Wu, 2000). Accordingly, Wu (2005) asserted using an integrative approach while designing a study on interactivity. In that scheme, Song and Bucy (2008) empirically tested a mediation model. Thus, the following hypotheses are developed: H1a: Perceived interactivity mediates the impact of the actual interactivity on the attitude towards the corporate website.

**2.2.2 Attitude towards the Brand**

Whereas several empirical studies indicated that the both feature-based interactivity and perception-based interactivity of a website had a significant positive influence on the attitude towards the brand (Boushra, 2008; Changal, 2005; Macias, 2003; Schlosser, 2003), however, Wu's (2000) empirical research that examined the effect of both actual interactivity and perceived interactivity on advertising effectiveness measures found that only perceived interactivity positively influenced the attitude towards the brand. Accordingly, the following hypothesis is developed: H1b: Perceived interactivity mediates the impact of the actual interactivity on the attitude towards the brand.

**2.2.3 Purchase intention**

Several studies indicated that perceived interactivity had a significant direct positive influence on purchase intention (Chniti & Bouslama, 2015; Wu, Hu, & Wu, 2010) while other studies found that perceived interactivity indirectly influenced purchase intention via attitude towards the website (Changal, 2005; Karson & Fisher, 2005). Nevertheless, Bucy and Tao (2007) contended that perceived interactivity is a mediator of the media effects. Accordingly, the following hypothesis is developed: H1c: Perceived interactivity mediates the impact of the actual interactivity on the purchase intention.

**2.2.4 Co-creation Advertising**

Prahalad and Ramaswamy (2000) noted that consumers are stepping out of their well-defined roles to become co-creators of value as well as being consumers of value. Extending this perspective to the new media such as websites; perceived interactivity plays a critical role in the co-creation value of consumers during usage (Kirk & Swain, 2013). The internet gives the consumers the opportunity to interact and co-create brand value rather than to passively consume these brands (Chernatony & Christodoulides, 2004) via user-generated brand content (Christodoulides, Jevons, & Bonhomme, 2012).

Although some researchers have attempted to study the perceived interactivity and the co-creation value of consumers during usage, however the relationship between the perceived interactivity of websites and co-creation advertising remains an under-researched topic. Accordingly, the following hypotheses are developed:

H1d: Perceived interactivity mediates the impact of actual interactivity on co-creation advertising.

**2.3 Individual Consumer Differences as Moderators**

Different researchers called for focusing on individual characteristics while examining the interactivity effects (Tremayne, 2005; Zeithaml, Parasuraman, & Malhotra, 2002). However, Song and Bucy (2008) argued that the role of individual consumer differences should not only be examined for how such differences that affect the marketing communication outcomes of interactive websites but for their moderating effect on the relationship between actual interactivity and perceived interactivity. Accordingly, this study will explore the moderating effect of individual consumer differences on the relationship between actual and perceived interactivity.

**2.3.1 Internet Self-efficacy**

Internet self-efficacy (ISE) is defined as a "belief in one's capabilities to organize and execute courses of internet actions required to produce given attainments" (Eastin and LaRose, 2006, p.1),

Song and Bucy (2008) explored the moderating influence of ISE on the relationship between actual and perceived interactivity, where they found that ISE significantly moderates the relationship between actual interactivity and perceived interactivity. They argued that experienced users enjoy surfing websites with highly interactive features, whereas novice users are likely to feel more comfortable while surfing websites with low interactivity.Accordingly, it can be hypothesized that: H2a: The relationship between actual interactivity and perceived interactivity is moderated by internet self-efficacy.

**Age**

Guo, Dobson, & Petrina (2008) examined the effect of age on an individual's competency of Information and Communication Technology (ICT), and findings indicated that there is no significant statistical relationship between age effects and (ICT) competency. On the other hand, the findings of the study of (Kirk et al., 2012) showed that younger consumers were more satisfied with the interactive digital information products, while older consumers were more satisfied with the static digital information products. To reconcile these inconclusive findings, the following hypothesis is developed: H2b: The relationship between actual interactivity and perceived interactivity is moderated by age.

**Gender**

Meng (2008) examined the impact of the gender gaps on the perceived importance of websites' interactivity and the results revealed that females exhibited more positive perceptions of the interactive features of the websites than males. However, McMahan, Hovland, & McMillan (2009) found that males change or customize content on the website while females don't change or customize content. Since the relationship between gender and interactive websites is far from conclusive, hence, the following hypothesis is developed: H2c: The relationship between actual interactivity and perceived interactivity is moderated by gender.

**Web Experience**

Liu and Shrum (2009) who proposed a dual-process model of interactivity effects; while taking involvement into consideration found that highly interactive website elicited more positive website and brand attitudes for experienced internet users than the less interactive websites, while the low interactive websites generated more positive website and brand attitudes for inexperienced internet users than the highly interactive websites. On the other hand, McMahan et al. (2009) and Kirk et al. (2012) contended that savvy internet users (e.g. young consumers) have very high interactivity expectations of websites; consequently, they will negatively respond to a website that does not meet their anticipated level of interactivity. Since the findings seem to be confusing, accordingly the following hypothesis is developed:

H2d: The relationship between actual interactivity and perceived interactivity is moderated by Web experience.

**Computer Experience, Years of Using Computer, Years of Using Web**

Considering that McMillan (2000) has emphasized the importance of testing the influence of the years of using the web and the years of using the computer, and since most of the studies on web search have differentiated experienced users from novice users based on their web use, computer use, and searching experience on the search success (Aula & Nordhausen, 2006); accordingly the researcher will examine their moderating role, accordingly and the following hypotheses are developed:

H2e: The relationship between actual interactivity and perceived interactivity is moderated by computer experience.

H2f: The relationship between actual interactivity and perceived interactivity is moderated by years of using the Web.

H2g: The relationship between actual interactivity and perceived interactivity is moderated by years of using the computer.

**Educational Level**

Several studies investigated the effect of the educational levels of web users on the web users' attitudes and behaviors, where Susskind (2004) indicated that users with higher education levels exhibited lower desire for interpersonal interaction when shopping online. However, Boushra (2008) found that educational levels have no effect on the web users' attitudes and behaviors towards websites. Since findings are inconclusive, accordingly the following hypothesis is developed: H4h: The relationship between actual interactivity and perceived interactivity is moderated by the educational level.

**Academic Major**

Previous studies showed significant differences in internet usage patterns and consumers' perceptions of digital products among respondents of different academic majors (Loan, 2011; Wu & Chen, 2012), where Loan (2011) who was comparing the internet usage frequency and making use of the internet among college students in various disciplines found that that computer science students made use of the internet the most, and they were the most frequent internet users followed by the Business students, while those from Social Sciences and Humanity reported the least among students with respect to making use of internet and usage frequency. The results of these studies suggest that the academic major might play a moderating role in influencing the relationship between the actual and perceived interactivity of websites. Hence, the following hypothesis is developed:

H2i: The relationship between actual interactivity and perceived interactivity is moderated by the educational level.

Accordingly, the proposed conceptual model is developed as shown in figure 1.

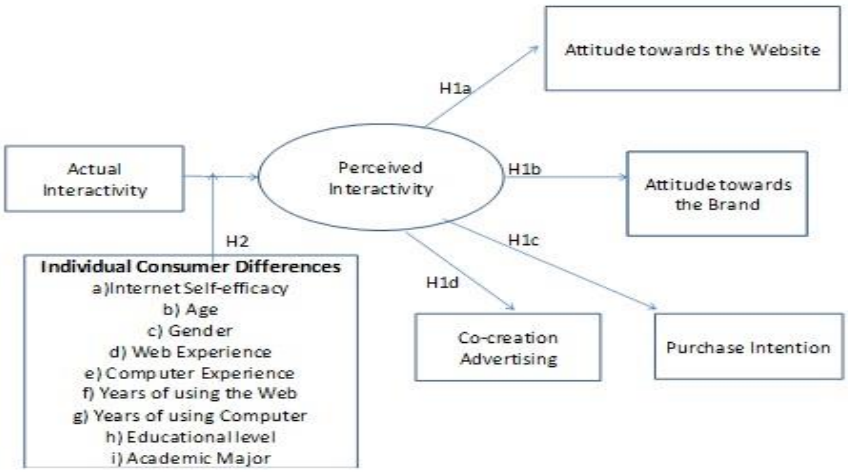


Figure 1: Proposed Conceptual Model

## 3. Research Methodology

### 3.1 Experimental Design, Sample and Stimulus Materials

To test the model, an experiment was conducted in natural settings inside greater Cairo. The data were obtained from a convenience sample of 419 respondents. To test the effect of individual consumer differences the sample comprised students and staff members from different faculties in several universities inside greater Cairo, as well as employees from different departments in many firms that operate inside greater Cairo.

The current research employed a two-website treatment (highly interactive/low interactive) within-subject experimental design to test the model. Therefore, a sample size of (838) responses was used in the analysis for the two websites. An expert panel was formed of digital media experts from different well-established advertising/media agencies in Cairo and Dubai, chose the two stimulus websites. The two automotive websites that were chosen were Kia Egypt website (Kia.com.eg) that represented the highly interactive website and Nissan Egypt website (Nissan.com.eg) that represented the low interactive website.

### 3.2 Data Collection Procedure and Research Setting

The online questionnaires were distributed via email, whereas participants filled them in real-life surfing environments with varying connectivity speeds. Participants were instructed first to browse the two automotive websites before filling in an online questionnaire that measured their online experience.

### 3.3 Statistical Procedure

3.3.1 Mediation Test Using Structural Equation Model

To test the mediation model (H1a, H1b, H1c, and H1d) a structural equation modeling using AMOS 23 was conducted.

| Paths for Suggested Mediation Model | Stand. B | Total Effect | Direct Effect | Indirect Effect |
|---|---|---|---|---|
| Perceived Interactivity<---Actual | -.28** | -.28 | -.28 | -- |
| Attitude towards Website<---Actual | -.07** | -.31 | -.07 | -.23 |
| Attitude towards Website <---Perceived | .82** | .82 | .82 | -- |
| Attitude towards Brand<---Actual | -.07** | -.28 | -.07 | -.210 |
| Attitude towards Brand<---Perceived | .73** | .73 | .73 | -- |
| Purchase Intention<---Actual Interactivity | -.04* | -.26 | -.04 | -.221 |
| Purchase Intention<---Perceived Interactivity | .77** | .77 | .77 | -- |
| Co-creation Advertising<---Actual | .009 | -.19 | .009 | -.202 |
| Co-creation Advertising<---Perceived | .71** | .71 | .71 | -- |
| | Y1 | Y2 | Y3 | Y4 |
| Squared Multiple Correlations $r^2$ | .823 | .782 | .727 | .701 |

** Coefficient is significant at p-value < 0.01.

*Coefficient is significant at p-value < 0.05.

Table 1: Path Analysis Results for the Suggested Mediation Model

As shown in table 1, the suggested mediated model demonstrated a good fit for the sample data; as P-value <.05 for all estimated standard coefficients, and all the coefficients of ($R^2$) were greater than 70% which is acceptable for the social science researches. The results show that there were significant direct effects of actual interactivity on perceived interactivity (P-Value < 0.01), attitude towards the website (P-Value < 0.01), attitude towards the brand (P-Value < 0.01), and purchase intention (P-Value < 0.05), but actual interactivity had no effect on co-creation advertising. However, perceived interactivity had significant direct effects on the attitude towards the website, attitude towards the brand, purchase intention, and, co-creation advertising.

Furthermore, it is easily observed that all the indirect effects of the actual interactivity on all marketing communication outcomes are strictly greater than its direct effects (in its absolute value), which implies that the actual interactivity affects these outcome variables through another variable; especially the co-creation advertising, due to the divergence between the indirect and direct effects.

According to such findings, perceived interactivity was found to partially mediate the relationship between the actual interactivity and the attitude towards the website, the attitude towards the brand, and the purchase intention, however, it fully mediates the relationship between the actual interactivity and the co-creation advertising; thus H1a, H1b, H1c, and H1d are supported.

**3.3.2 Moderation Test**

In this section the following hypotheses were tested using Multiple Group Analysis:

H2: The relationship between actual interactivity and perceived interactivity is moderated by the following individual consumer differences:

Internet Self-efficacy, b) Age, c) Gender, d) Web Experience, e) Computer Experience, f) Years of using the Web, g) Years of using Computer, e) Educational Level, i) Academic Major.

| Paths | | | Stand. B | Pairwise Parameter Comparisons |
|---|---|---|---|---|
| PI<---AI | Internet Self-efficacy | Low | .651** | -.381 |
| | | High | .71** | |
| | Age | Low | .826** | 3.126** |
| | | High | .327* | |
| | Gender | Male | .706** | .982 |
| | | Female | .604** | |
| | Web Experience | Low | .628** | -.609 |
| | | High | .727** | |
| | Computer Experience | Low | .659** | -.081 |
| | | High | .688** | |
| | Level of Education | Low | 1.509** | 5.92** |
| | | High | .504** | |
| | Years of using the Web | Low | .846** | 1.89* |
| | | High | .248** | |
| | Years of using the computer | Low | 1.128** | 2.08** |
| | | High | .65** | |
| | Academic Major | Non-scientific | .413** | -4.07** |
| | | Scientific | 1.077** | |

**Significant at the 0.01 level.

*Significant at the 0.05 level.

Table 2: Pairwise Comparisons for the Individual Consumer differences that moderate the relationship between the Actual and Perceived Interactivity

Median splits were conducted for all moderating variables [except for the gender variable which is already binary and the academic major variable which was grouped into scientific (Business/Economics/Political Science, Mass Communication, Arts) and non-scientific (Engineering, Computer Science, Medicine/Dentistry/ Pharmacy)]. A multiple-group analysis was performed for the model by comparing the two sub-samples based on the respective moderating variables, and testing for

differences between the two groups was achieved by performing pairwise comparison across levels of variables using the critical ratios for differences performed via AMOS.

According to table 2, the empirical results indicated a significant effect of the actual interactivity on the perceived interactivity for the two groups of all the individual consumer differences of the respondents. However, the strength of these relationships was influenced by the varying degrees of respondents' efficiency in internalizing the different levels of actual interactivity, which were tested by multiple-group analysis technique.

As per the Pairwise Parameter Comparisons, significant group differences were only found for the effect of age, educational level, years of using the Web, years of using the computer, and the academic major. Thus, the hypotheses H2b, H2f, H2g, H2h, and H2i were supported, while H2a, H2c, H2d, and H2e were not supported.

**4. Findings/Results**

Further to the mediated moderation model proposed by Bucy and Tao (2007) and later tested by Song and Bucy (2008); this study analyses interactivity by exploring the role of perceived interactivity in mediating the impact of actual interactivity on different key marketing communication outcomes, and by scrutinizing the moderating role of various key individual consumer differences.

The result of the mediating impact of perceived interactivity on the attitude towards the website of the current study was in line with the previous studies (Song & Bucy, 2008; Wu, 2005) where perceived interactivity was found to partially mediate the relationship between the actual interactivity and the attitude towards the website. Moreover, findings of this study indicated that perceived interactivity partially mediated the relationship between the actual interactivity and the attitude towards the brand, and the purchase intention, nevertheless, it fully mediated the relationship between the actual interactivity and the co-creation advertising. Thus, the whole mediated model was supported.

The current study attempted to further investigate the explanatory power of the individual consumer differences in generating different levels of consumers' perceived interactivity for the same interactive interface, where the results indicated that age, educational level, years of using the Web, years of using the computer and academic major moderated the relationship between actual interactivity and perceived interactivity, while internet self-efficacy, gender, Web experience and computer experience did not moderate the relationship between actual interactivity and perceived interactivity.

In accordance with the findings of the current study, the mediated moderation model was supported. The model posits that individual consumer differences (e.g. age, educational level, years of using the Web, years of using the computer and academic major) moderate the influence of actual interactivity on perceived interactivity, and that perceived interactivity mediates the influence of actual interactivity on key marketing communication outcomes: purchase intention, attitude towards the brand, attitude towards the website, and co-creation advertising.

**5. Discussions and Conclusions**

We can conclude from the findings of the current study that the younger age-groups (16-25 and 26-35 years categories) who have been using the computer and Web for less number of years than their older counter parts have experienced a higher feeling of perceived interactivity for the highly interactive website (Kia) than the users of the older age groups (36-55 and over 55 years categories) who have been using the computer and Web for more number of years; likewise they experienced a lower sense of perceived interactivity for the low interactive website (Nissan) than their older counter parts. These findings are in line with the findings of the previous studies, where Kirk et al. (2012) found that the younger "digital native" consumers were more satisfied by the interactive digital products while the older "digital immigrants" consumers were more satisfied by the static digital products.

Also, students who have not graduated yet have experienced a higher feeling of perceived interactivity for the highly interactive website than the college or post graduate holders, likewise they have experienced a lower sense of perceived interactivity for the low interactive website than college or post graduate holders. These findings are in line with the findings of the study of Susskind (2004). Furthermore, respondents from scientific academic majors have experienced a higher feeling of perceived

interactivity for the highly interactive website than the users of the non-scientific majors. These findings were in line with the findings of the study of Loan (2011).

Although findings of Song and Bucy (2008) indicated that the internet self-efficacy significantly moderates the relationship between actual and perceived interactivity; however interestingly, the current study found no moderating effect for the internet self-efficacy. Possible explanations for this might be due to the drastic improvement in the internet skills in the past few years, or it might be linked to the cultural differences between participants in the two studies and to how individuals tend to evaluate their own internet capabilities in these two different cultural contexts.

Thus, findings of this research provide useful insights for advertisers and marketing communication managers on how to effectively develop interactive strategies to reach different target audiences, for example findings suggest designing a corporate website with high challenging levels of actual interactivity when targeting the students or young consumers (16 – 35 years), users from scientific majors, and undergraduate students, while suggest designing a low interactive corporate website when targeting older age consumers (36 years and above), college degree holders and post graduate holders, and users from non-scientific academic majors.

Nevertheless, in the light of the ever-changing interactive technologies, this study provides evaluative criteria and guidelines on the updated interactive features that could be integrated into corporate websites, and hence facilitate the operationalization of the actual interactivity nowadays. Moreover, the researcher developed a new version of the co-creation scale specified for advertising; the so-called "co-creation advertising", where advertisers and scholarly research could use for measuring advertising purposes of co-creation.

Furthermore, this research makes a significant contribution to the emerging interactivity literature by proposing a comprehensive conceptual model that proposes a combination of the theoretical linkages with new interactive marketing communication outcomes (e.g. co-creation advertising); thus the proposed model serves as a critical point for studying the underlying mechanisms between the actual interactivity and the marketing communication outcomes. Furthermore, this study pioneered in empirically testing the mediated moderation model in the Egyptian context, where the empirical evidence indicated that the model holds well across diverse population of Egyptian consumers.

**6. Limitations and Direction for Future Research**

The restricting effect that the limitations of this study, namely using a convenience sample and a one-product category as a stimulus material may seem to possess has turned out to positively benefit the research. Concerning the one-product category to which the stimulus was limited, experts reached a consensus that the nature of the selected product category enables the inclusion of numerous interactive elements (e.g. customization feature, social network features, a 360º interactive view of the interior/exterior of the vehicle, etc..).

However, further research may test the moderating role of other individual consumer differences than those tested in the current study (e.g. demographic variables like consumer's occupation and language proficiency, or motivational traits like need for cognition, computer frustration, or need for novelty and stimulation). Moreover, since the results of the effect of the moderating variable "internet self-efficacy" of the current study differed from the results of Song and Bucy's (2008) study; which could be attributed to the cultural differences between these two studies, thus it is recommended to test the proposed model in other cultural contexts. Additionally, further studies may want to explore the role of perceived interactivity in mediating the impact of actual interactivity on other marketing communication outcomes (e.g. brand awareness, brand recall, brand trust, brand image, brand loyalty, online patronage, intention to repurchase, website revisit). It is also recommended that future research would replicate this study with other product categories to test whether the model holds well across products of different nature. Nevertheless, future studies may test the mediated moderation model in other social media contexts, such as companies' Facebook business pages to test whether the same results will hold.

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# The effects of shopping orientations towards customers' online purchase intention

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**Keywords**
Shopping Orientations, Online Purchase Intention, Impulse Purchase Orientation, Quality Orientation, Brand Orientation, SmartPLS, PLS-SEM, Malaysia.

**Abstract**

*The advancement of the World Wide Web has resulted in the creation of a new form of retail transactions electronic retailing (e-tailing) or online shopping. The number of internet users has been steadily increasing all over the world, including developing countries. As the number of websites continues to expand and consumers increase their use of the Internet, companies must find ways to convert visitors to buyers and boost return visits to their sites. Hence, this study examines the effects of impulse purchase intention on customers' online purchase intention among undergraduate students of public universities in Malaysia. The survey approach utilizes Google Forms as a real-time formative feedback tool to collect students' feedback since it is a very simple, systematic, and easy to implement approach. The online questionnaire using Google Forms with a cap of 200 respondents were distributed. In total, several 138 completed responses were subsequently collected. The data were then analysed using the PLS-SEM algorithm. The findings show that impulse purchase intention and quality orientation possess explanatory and predictive capacity to predict customers' online purchase intention.*

## Introduction

The number of internet users has been continuously increasing all over the world, including developing countries. According to Malaysian Communications and Multimedia Commission (MCMC, 2017), there are about 25.08 million Internet users in Malaysia which accounts for 79 percent of the total Malaysian population. Among the e-commerce, online shopping is a potential and growing industry in almost every nation includes Malaysia. With these capabilities, the internet has the potential to create a fundamental shift in how people communicate (Ross et al., 2009).

There is an inconclusive finding in past studies regarding the effects of shopping orientations toward customers' online purchase intention. For example, some studies found that element of trust had stronger direct effect on online shopping intention (Delafrooz, 2011), while initial trust is not significantly influence online shopping intention (Jin & Osman, 2014). Moreover, Kimery and McCard (2002) defined trust as customers' willingness to accept weakness in an online transaction based on their positive expectations regarding future online store behavior. Egger (2006) argued that enough trust needs to exist when placing an order online and when the customer submit his or her financial information and other personal data in undertaking financial transactions. Furthermore, the inconclusive findings regarding the effects of shopping orientations toward customers' online purchase intention maybe explained by previous research has found that individuals tend to believe that, in comparison with others, they are less likely to experience negative events, and more likely to experience positive events. This tendency is known as '*optimistic bias*', or 'unrealistic *optimism*' (Weinstein, 1980).

There are limited studies in Malaysia on Ethnicity and Culture differences. Since consumer behaviour is cultural-specific, it is unclear whether the reported findings of the consumer online purchase intention in the western countries (which exhibit low uncertainty avoidance in the Hofstede cultural typology), can be directly applied in a cross-cultural context such as in Malaysia Malaysia (which exhibit high uncertainty avoidance in the Hofstede cultural typology (Kwek, 2010). It is important to point out

that, many researchers claimed that, there has been an expansion of educational services in Malaysia, while consequently university students have become one of the important consumer market segments (Sabri et al, 2008). Therefore, due to the students' purchasing power in the market, web retailers and marketers to completely understand the attitude and intention of this group of untapped consumer market of university students.

However, Kiang et al. (2011) investigated that, even though the statistics showed growing online sales, there are still many online customers who use the data gathered online, making purchase offline. This can be proved by the large abandon rates of purchasing carts. Paul Talbot (2018) investigated that marketing strategy can be stray from business strategy. There have been hundreds of studies surrounding cart abandonment statistics. The average cart abandonment rate for 2017 was 78.65 percent. In other words, over 3/4 of shoppers choose to leave the site without completing a purchase (Serrano, 2018). Consequently, a significant gap is created in this research. Therefore, this study will examine the impact of shopping orientations to the customer online purchase intention in the context of web-shopping environment in Malaysia. In addition, this study also aims to identify which shopping orientation has the most significant impact on customer online purchase intention.

## Literature Review

### 2.1 Customer Online Purchase Intention

Customer online purchase intention was one of the intensive research areas in the extant literature. Customer online purchase intention in the web-shopping environment will determine the strength of a consumer's intention to carry out a specified purchasing behaviour via the Internet (Salisbury, Pearson, Pearson & Miller, 2001). Furthermore, the theory of reasoned action suggested that consumer behaviour can be predicted from intentions that correspond directly in terms of action, target and context to that consumer behaviour (Ajzen & Fishbein, 1980). According to Day (1969), the intentional measures can be more effective than behavioural measures to capture customer's mind as customer may make purchases due to constraints instead of real preference when purchase is considered.

Purchase intention can be classified as one of the components of consumer cognitive behaviour on how an individual intends to buy a specific brand. Laroche, Kim and Zhou (1996) assert that variables such as consideration in buying a brand and expectation to buy a brand can be used to measure consumer purchase intention. Based on the argument of Pavlou (2003), online purchase intention is the situation when a customer is willing and intends to become involved in online transaction. Online transactions can be considered as an activity in which the process of information retrieval, information transfer, and product purchase are taken place (Pavlou, 2003). The information retrieval and exchange steps are regarded as intentions to use a web site; however, product purchase is more applicable to an intention to handle a website (Pavlou, 2003). Therefore, it is crucial to evaluate the concept of online purchase intention in this study. In order to trigger customer online purchase intention, web retailers must explore the impact of shopping orientations on the customer online purchase intention.

### 2.2 Impulse Purchase Orientation

Piron (1991) defines impulse purchase as an unplanned action that result from a specific stimulus. Rook (1987) argues that impulse purchase takes place whenever customers experience a sudden urge to purchase something immediately, lack substantive additional evaluation, and act based on the urge. Several researchers have concluded that customers do not view impulse purchase as wrong; rather, customers retrospectively convey a favourable evaluation of their behaviour (Dittmar, Beattie, & Friese, 1996; Hausman, 2000; Rook, 1987). Therefore, Ko (1993) reports that impulse purchase behaviour is a reasonable unplanned behaviour when it is related to objective evaluation and emotional preferences in shopping. Wolman (1973) frames impulsiveness as a psychological trait that result in response to a stimulus. Weinberg and Gottwald (1982) state that impulse purchase is generally emanated from purchase scenarios that feature higher emotional activation, less cognitive control, and largely reactive behaviour. Impulse purchasers also tend to be more emotional than non-purchasers. Consequently, some researchers have treated impulse purchase as an individual difference variable with the anticipation that it is likely to affect decision making across situations (Beatty & Ferrell, 1998; Rook & Fisher, 1995). Given the ongoing development of the digital economy and the shopping convenience being delivered through digitalized exchanges, one might reason that more impulse individuals may be more prone to online shopping.

Donthu and Garcia (1999) assert that online shoppers were more likely to be impulse oriented. The study from Zhang, Prybutok and Strutton (2007) conclude that impulse purchase is positively related to the customer online purchase intention.

### 2.3 Quality Orientation

Quality is regarded as a key strategic component of competitive advantage and therefore the enhancement of product or service quality has been a matter of main concern to firms (Daniel, Reitsperger, & Gregson, 1995; Foster & Sjoblom, 1996). Foster et al. (1996) defined Quality as a strategic component of competitive advantage. Therefore, to boost the quality of product or service is a matter of concern to the firms. For manufacturing firm Crosby (1979) defined quality as conformance to specifications. It refers to the extent to which a product meets certain design standards. Garvin (1984) described that differences in the quantity of some ingredient or attribute possessed by the product are considered to reflect differences in quality. Whereas in the user-based definition, quality is the extent to which a product or service meets or exceeds customers' expectations. Bellenger et al. (1980) explained that recreational shoppers consider various factors while choosing the store such as quality, variety of products and pleasant store ambience. In the context of web-shopping environment.

### 2.4 Brand Orientation

A brand is defined as a name or symbol, trademark and package design that uniquely identifies the products or services of a retailer and differentiates them from those of its competitors (Aaker, 1991). Brown, Pope and Voges (2001) define shopping orientations as related to general predisposition toward the acts of shopping. In the cyber marketplace, a corporate brand identity is a cognitive anchor and a point of recognition where customers perceive a great deal of uncertainty (Rajshekhar, Radulovich, Pendleton & Scherer, 2005). For many online retailers, the brand name is the company name. In the e-commerce environment, trusted corporate and brand names are used by customers as substitutes for product information when they intent to make online purchase (Ward & Lee, 2000). Several studies have found that brand loyalty exhibits strong impact on purchase intention in the traditional offline retailing world (Hawes & Lumpkin, 1984; Sproles & Kendall, 1986). A strong brand name not only attracts new customers, but also has the lock-in ability to make customers feel comfortable with their purchase decisions. A study carried out by Jayawardhena, Wright and Dennis (2007) conclude that brand orientation is positively related to the customer online purchase intention.

### 2.5 Framework and Hypotheses Development

The prior literature review conducted earlier offers the basis for the development of the research framework of the study and its hypotheses. This study hypothesized impulse purchase orientation, quality orientation, and brand orientation to have positive relationships with customers' online purchase intention. Therefore, the research framework is shown as in Figure 1, followed by the three hypotheses of the study.

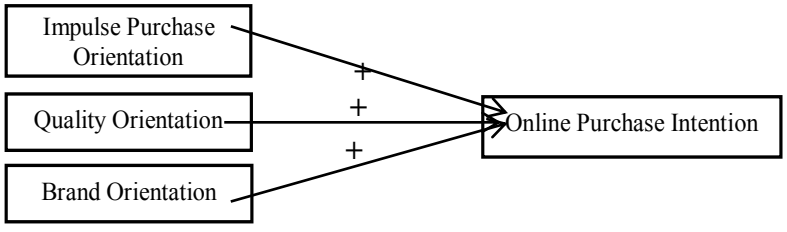


Figure 2: Theoretical framework

$H_1$: Impulse purchase orientation positively influence customers' online purchase intention.
$H_2$: Quality orientation positively influence customers' online purchase intention.
$H_3$: Brand orientation positively influence customers' online purchase intention.

### Data and Methodology

We espoused a quantitative approach in conducting the study. The samples for this study were Malaysian university students aged between 21-25. To ensure that the sample characteristics

corresponded to the nature of the study, a non-probability purposive sampling technique was adopted to ensure the collected data were indeed from valid sources. A 5-point Likert scale anchored by "strongly disagree" (1) to "strongly agree" (5) was used as the measurement for the independent and dependent variables. Sample size estimation was determined using G*power 3.0 analysis (Faul et al., 2007). By using G-Power Analysis software, with the effect size of f square 0.15, α error pro 0.05, power Gf 0.95 with 3 tested predictors, therefore 119 respondents are the minimum sampling for this study. A Google Form is shared via email and all the collected responses are organized in a Google Spreadsheet stored in Google Drive. To collect data, the students were selected randomly, and the online version of the instrument was sent to 200 Malaysian university students. In total, several 138 completed surveys were collected (response rate = 69%). Figure 1 depicted the research framework that contained statements of five variables investigated. The variables were examined using multiple items (Hayduk & Littvay 2012) and the data was then analysed using SmartPLS 3.0 (Ringle et al., 2015) to assess the hypotheses.

## 4.0 Research Results and Discussion

With a total of 138 respondents made up of undergraduate students of public universities in Malaysia, majority of the respondents were male (56.2%) and the remaining were female (43.8%). More than 56.8 percent of the respondents were between 19-21 years old. In addition, majority of the respondents (43%) were Sabahan followed by respondents from Peninsular Malaysia and the Sarawakians that made up 32.5 percent and 24.5 percent respectively. In the following Table I, the respondents' demographic and profile information has been summarized and presented.

Table I-Respondents' Profile

| Variable | | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 78 | 56.2 |
| | Female | 60 | 43.8 |
| Age | 19-21 | 78 | 56.8 |
| | 22-24 | 45 | 32.5 |
| | 25-27 | 15 | 10.7 |
| Place of Origin | Peninsular Malaysia | 45 | 32.5 |
| | Sabah | 59 | 43.0 |
| | Sarawak | 34 | 24.5 |
| Ethnicity | Malay | 21.3 | 15.4 |
| | Chinese | 18.4 | 13.3 |
| | Indian | 5.2 | 3.8 |
| | Sabah Natives | 53.0 | 38.4 |
| | Sarawak Natives | 33.8 | 24.5 |
| | Other | 6.3 | 4.6 |

## 4.1 Measurement Model Assessment

Table II displays the findings of construct reliability (CR) and convergent validity testing. The results confirm that the constructs (or variables under investigation) to have high internal consistency reliability (Roldán & Sánchez-Franco, 2012) and enough average variance extracted (AVE) to validate the convergent validity (Hair et al., 2017).

The outer loadings of the items, as the measures of the relationship between the items and the latent constructs, were evaluated on the grounds of the guidelines provided by Hair, Hult, et al. (2014). Through this procedure, no item was deleted from their respective constructs. Then, Cronbach's alpha and composite reliability as the measures for estimating internal consistency reliability (Hair, Black, Babin, & Anderson, 2010), and convergent validity as an extent of positive correlations among the items of a construct (Hair, Hult, et al., 2014; Hair, Ringle, & Sarstedt, 2011), were estimated.

The results displayed in the following Table II shed light on the fact that all the relevant requirements had been fulfilled since the reliability values were above 0.7 and there was no Average Variance Extracted (AVE) value smaller than 0.5.

Table II: Measurement Model Assessment

| Construct | Item | Loadings | CA | CR | AVE | CV (Ave > 0.5) |
|---|---|---|---|---|---|---|
| BO | BO-1 | 0.887 | 0.916 | 0.941 | 0.798 | Yes |
| | BO-2 | 0.925 | | | | |
| | BO-3 | 0.903 | | | | |
| | BO-4 | 0.857 | | | | |
| IPO | IPO-1 | 0.818 | 0.753 | 0.847 | 0.590 | Yes |
| | IPO-2 | 0.816 | | | | |
| | IPO-3 | 0.891 | | | | |
| | IPO-4 | 0.483 | | | | |
| OPI | OPI-1 | 0.828 | 0.918 | 0.933 | 0.637 | Yes |
| | OPI-2 | 0.871 | | | | |
| | OPI-3 | 0.784 | | | | |
| | OPI-4 | 0.795 | | | | |
| | OPI-5 | 0.769 | | | | |
| | OPI-6 | 0.757 | | | | |
| | OPI-7 | 0.785 | | | | |
| | OPI-8 | 0.792 | | | | |
| QO | QO-1 | 0.866 | 0.836 | 0.902 | 0.753 | Yes |
| | QO-2 | 0.891 | | | | |
| | QO-3 | 0.846 | | | | |

**No item was deleted as loading Composite Reliability > .708 (Hair et al., 2010, & Hair et al., 2014)*

Table III displayed HTMT criterion to evaluate discriminant validity (Ringle, et al., 2015) of the latent variables based on $HTMT_{0.85}$ and $HTMT_{0.90}$ criterion. The result specifies that the discriminant validity is well-established at $HTMT_{0.85}$ (Diamantopoulos & Siguaw, 2006). The findings indicated that it is appropriate to proceed with structural model assessment to test the hypotheses of the study as there is no issue of multi-collinearity between items loaded on different constructs in the outer model.

Table III: Htmt Criterion

Table III: HTMT Criterion

| | BO | IPO | OPI | QO |
|---|---|---|---|---|
| BO | - | | | |
| IPO | 0.827 | - | | |
| OPI | 0.620 | 0.812 | - | |
| QO | 0.820 | 0.820 | 0.723 | - |

*Criteria: Discriminant validity is established at HTMT0.85/HTMT0.90*

### 4.2 Structural Model Assessment

Collinearity and path coefficients

As suggested by Hair, Hult et al. (2014), the existence of high correlations among the exogenous constructs in the model which is referred to as collinearity was assessed through checking the VIF values. This procedure revealed that all the values were smaller than 0.5, implying that collinearity could not be a problem for the initial model under study. Hence, the model was evaluated for the significance of the path coefficients as the hypothesized relationships among the constructs (Hair, Hult, et al., 2014; Hair, Ringle et al., 2011).

To access the hypotheses, bootstrapping routine with 5000 samples was run (Hair et al., 2017). Table IV demonstrates the assessment of the path co-efficient, which is represented by Beta values for each path relationship. The results show two hypotheses were indeed supported namely impulse purchase orientation and quality orientation. The brand orientation however did not influence customers' online purchase intention.

**Model's predictive accuracy and relevance**

The values of $R^2$, which is a measure of the model's predictive accuracy, its adjusted version, and $Q^2$, as the main output of blindfolding module in SmartPLS 3.0 which represents the model's predictive relevance (Hair, Hult, et al., 2014), have been displayed in the following Table IV for all of the endogenous constructs in the model.

Table IV also displays the quality of the model. On the hypotheses which are tested to have significant relationships, both impulse purchase orientation and quality orientation are found to have

carried substantial and moderate effect sizes. The predictive relevance values for all three dependent variables are larger than 0, indicating that the independent variables can predict the customers' online purchasing intention as anticipated by $Q^2$ using blindfolding procedure (Hair et al. 2017).

Table Iv-Path Coefficients and Model Quality Assessment

Table IV: Path Coefficients and Model Quality Assessment

| Direct Effect | Beta | S.E. | t-value | p-value | 5.00% | 95.00% | Decision | $f^2$ | $R^2$ | VIF | $Q^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H1: IPO -> OPI | 0.487 | 0.075 | 6.526 | 0.000 | 0.345 | 0.633 | Supported | 0.282 | 0.548 | 1.860 | 0.317 |
| H2: QO -> OPI | 0.389 | 0.114 | 3.400 | 0.001 | 0.175 | 0.624 | Supported | 0.113 | | 2.966 | |
| H3: BO -> OPI | -0.063 | 0.107 | 0.587 | 0.558 | -0.270 | 0.134 | Not Supported | 0.003 | | 3.252 | |

*Path Coefficient 0.01, 0.05 (Hair et al. 2017)*

*Lateral Collinearity: VIF 3.3 or higher (Diamantopoulos & Sigouw 2006)*

*R2 ≥ 0.26 consider Substantial (Cohen, 1989)*

*F2 ≥ 0.26 consider Substantial (Cohen, 1989)*

*Q2 > 0.00 consider large (Hair, 2017)*

### 4.3 Regression Analysis

The result of the multiple regression analysis was presented in Table IV. The p value of the impulse purchase orientation (p = 0.000) is less than the alpha value of 0.05. Therefore, the research concludes that an impulse purchase orientation is positively related to the customer online purchase intention. Hypothesis 1 is supported. This finding supports the existing literature which states that the shopping orientations in term of impulse purchase will positively affect the online purchase intention (Zhang, et. al., 2007).

The p value for the quality orientation (p = 0.001) is also less than the alpha value of 0.05. Therefore, it can be suggested that quality orientation is positively related to the customer online purchase intention. Hypothesis 2 is therefore supported. This finding supports the existing literature that quality orientation will positively influence the customer online purchase intention (Gehrt, et. al., 2007).

Finally, the result from the research also postulated that the brand orientation is negatively related to the customer online purchase intention, as the alpha value is more than 0.05 (p value = 0.558). Hypothesis 3 therefore not supported. Thus, brand orientation is not significant to influence the customer online purchase intention. This finding does not support the existing literature that brand orientation will positively be related to the customer online purchase intention (Jayawardhera, et. al., 2007).

## 5.0 Conclusion

### 5.1 Implications of the Research

The research findings have brought managerial implications to the various stakeholders. In terms of managerial implication, the research findings do provide some insights and feedbacks for the e-retailers to formulate and implement various business strategies to increase the customer online purchase intention. The research finding discovered that the antecedents of the customer online purchase intention could be applied in both low uncertainty avoidance countries and high uncertainty avoidance countries (especially in Malaysia), particularly among Millennials who also get called Generation Y. Malaysian millennials comprise 29% of the current population 32.45 million. To increase the customer impulse purchase, online retailers can provide e-mail updates on product development or offer special discounts for a limited time to the potential online customers. There are many ways to structure the offers and, the websites that will entice customers to make impulse purchases. Offering conditional free shipping and running sales are two effective motivators of online impulse buying. For targeting quality-orientated customers, online retailers can provide full online version of product quality information and product search information through the website to them. Customer satisfaction is dependent on the product or service quality. Moreover, customer satisfaction increases customer loyalty; therefore, the retailers' profit will increase ultimately. Online retailers may offer loyalty programmes or club memberships for those online customers who exhibit strong brand orientation. Obviously, online retailers need to know how to influence and to create a positive brand perception. Keep the brand genuine and coherent. Be consistent and persistent.

### 5.2 Limitations of the Research

Although the research findings provide some new insights to researchers, these findings should be viewed considering some limitations. The study in this research is focusing on those respondents who

have some experiences in engaging online purchase intention. Therefore, the study does not cover those potential customers who do not have experienced in online transaction but have the intention to engage in online purchase activities. By incorporating the potential online customers in the study, this will enhance the generalisability of the subsequent research. In addition, the study does not explore the impact of gender differences in moderating the relationship between shopping orientations and customer online purchase intention. The finding from Jayawardhena et al. (2007) discovered that gender has a significant influence on online purchase intention. By incorporating the gender construct in studying the relationship between shopping orientations, and customer online purchase intention may able to enrich the extant literature. Lastly, this study focuses only on 5 constructs as independent variables. Future research might add any other constructs or possible moderator-mediator variables to a research study. Nevertheless, the addition of mediating and moderating variables to any research program reflects the maturation of scientific research to addressing the specifics of how and for whom interventions achieve their effects.

### 5.3 Recommendations for Further Research

Due to the limitations of this research, three recommendations are suggested for further research for the purpose of enhancing the study of the customer online purchase intention. i). It is proposed to evaluate the impacts of shopping orientations on the customer online purchase intention among the potential customers who have strong intention to engage in online purchasing activities. ii). Besides, it is recommended to evaluate the relationship between shopping orientations and customer online purchase intention based on race, ethnicity and culture differences, gender differences as well as the role of gender in mediating and moderating the relationship between shopping orientations and customer online purchase intention. iii). Lastly, it is suggested to utilize probability sampling technique to evaluate customer online purchase intention in the future research. Probability sampling give the best chance to create a sample that is truly representative of the population.

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# Sell-ON: Learning by doing pedagogy at VESIM Business School

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**Keywords**
Experiential, Learning, Pedagogy, Teaching.

**Abstract**

*The Director at VESIM Business School closed his laptop and looked at the members of the Dean's Council. He had just read out the bad news and something had to be done about it. The year was 2014 and the student's campus placement in corporates was looking grim. This was the fifth company who had visited the campus and had given an adverse comment about the soft skills of the students during the placement interviews. The question was how to inculcate those skills in the students during program that will enhance their employability. The knowledge imparted by distinguished faculties in the classroom had to be supplemented with something else to be transformed into skills required for business. The Dean's Council came up with a recommendation to begin a series of on-field programs that will act as a simulation of workplace. One program specific to develop business and soft skills called "Sell-On" was proposed for all the students. In this program, they perform a business task in the real world and enhance their learning by doing. A list of Experiential Programs at VESIM Business School is attached in Annexure A.*

## Introduction

Vivekanand Education Society's Institute of Management Studies and Research (VESIM Business School) was instituted on 31st March 1994. It runs two programs in Management Education i.e. master's in management studies (MMS) and Post Graduate Diploma in Management (PGDM). Currently the student intake is 180 students in MMS and 120 in PGDM. Since its inception, VESIM has been at the forefront of business studies, developing business leaders who strive to make a positive impact on companies they work with, people they meet, and the society they serve. This allows the institute to help more deserving students, who are aiming for fulfilling lives and glorious corporate careers.

"Tell me and I forget, teach me and I may remember, involve me and I learn." — Benjamin Franklin

Acquiring knowledge through experience rather than classroom teaching is the crux of Experience Based Learning method. It connects Learning outcomes with real life problem situation for the students so that they can find their own unique solutions. This method builds holistic skills instead of focusing on a single component. The students also need to be conscious of the social environment in which the business is carried on.

To achieve this end, VESIM Business School has introduced, "Sell-On", a mandatory activity for students that introduces them to real life situations and makes them better prepared for their corporate journey.

The result is a highly successful model of program delivery which is gaining widespread support amongst all the stakeholders.

## Background

Traditional teaching methods are meant to handover knowledge or skills to the learner ignoring the overall development of the learner. It incorrectly assumes what are the needs of the learner.

"Experiential learning stimulates original thinking and develops a wide range of thinking strategies and perceptual skills which are not called forth by books or lectures". (Williams, 1986). "In Experiential Learning, students benefit from discoveries and experiments by learning through observation and interaction, while at the same time they explore the real world". (Dedouli, 2001). David Kolb

proposed the cyclical model of experiential learning, wherein, he states that learning begins from concrete experience to reflective observation, then to abstract conceptualization to active experimentation. (Kolb, 1984).

In modern times, learning in the classroom is no longer enough. Knowing the way to solve issues, operating collaboratively and thinking innovatively are vital skills of the twenty first century. "Therefore, Experience Based Learning is generally accepted as an effective method for teaching processes, such as problem solving and decision making" (Thomas, 2000). "Besides, experts should help in developing character's emotional, social elements apart from cognitive" (Katz & Chard, 2000). "Other positive outcomes by using Project Based Learning are the reduction of student's anxiety" (Boaler, 2002), and "the enhancement of student's learning quality compared with conventional teaching methods" (Thomas, 2000).

Management education involves acquiring skills that are useful to counter the short and long-term challenges of business and ensuring that the business performs to its maximum potential. These skills were acquired in the past using traditional classroom methodology, wherein the teacher would 'teach' using teaching aids and sharing his/her experiences. This method has been successful for hundreds of years for conventional subjects, but, for a skill driven program like an MBA, the teaching must be taken out to the real life for enhancing the employability of the student. In a B-School, where students are taught using 'chalk & talk' they would 'learn' the subjects and pass with flying colors but would not get selected for good jobs in premium corporates. Even if they would get selected, they would need extensive training on-the-job. On closer examination, it was found that the students had enough knowledge on 'What' are the theories and models behind the subject but were unable to perform the 'How' part of it.

In addition, there were other drawbacks of pure classroom teaching. The teaching is focused on the ability of the teacher rather than the ability of the learner. It was assumed that a highly qualified teacher would automatically transfer knowledge to a class of sixty students irrespective of their individual absorbing capacity. To be fair to the class, the teacher would focus on the 'lowest common denominator' thus disengaging the brighter ones. Traditional Classroom teaching also makes the learners dependent on the teacher, who ends up in spoon-feeding them without bringing out their creativity and strengths. Sometimes, there is a teacher bias in the classroom towards the bright students and the left-out students give up on the learning itself.

"Assuming that all students cannot learn in the same way, it is important for educators to develop and implement alternative teaching methods" (Muthukrisma et al., 1993). According to Aggelakos, the solution lies in Experience Based Learning where "learning isn't limited in terms of knowledge and information, but rather with their teacher's help, it provides students with the opportunity to transform themselves during the learning process" (Aggelakos, 2007).

**The Concept**

The Concept of Sell-On is 'Do and Learn' where students gain skills by performing in live setting. The learning goals are set well in advance and the activity is designed to achieve the desired goals. The Selling activity is specifically chosen since selling per se involves use of extensive interpersonal skills, hence they can hone it for their corporate journey. It is also the basic function of economy and the fundamental reason that corporates exist. Students joining a B-School need to be exposed to sales as a function so that they learn things that will help them for rest of their lives.

The Learning Objectives being that the students should be able to identify and explain customer needs and wants, be able to apply various selling techniques, explain and describe the management principles learnt, demonstrate public speaking skills, identify and suggest role of Social responsibility in business and practice and evaluate team building skills.

**Pre-event Planning**

VESIM Business School has a strong association with many NGO's (Non-Governmental Organization) who work towards upliftment of such disadvantaged people like mentally or physically challenged, women from extremely poor financial background etc. These groups of people work for the NGO's to produce hand crafted products which the NGO sells at a reasonable profit to its limited set of customers. This is where VESIM Business School comes in and works towards a winning formula for all concerned. Students order products well in advance based on the estimated target per team. The products

are packed for a group comprising of eight to ten students each. Pricing is fixed in consultation with the NGO to ensure fair returns to them. A faculty mentor is appointed for each group of students. The role of the faculty mentor is to interact with the students on a regular basis, keep them motivated to increase sales and sort out any issues that arise during the event. The School does not keep any margin for itself. The total revenue collected, including the profits earned is passed on to the concerned NGO.

**Student Training and Motivation**

On day one, a 'Selling Skills' session is scheduled for the students which is conducted by an industry expert and motivator. The effort is to bring out a can-do spirit amongst the students. This is followed by a session from the NGO who explains to the students about the 'Product' and the effort that has gone into making it. Students are sensitized about the condition of those who have made the products.

The group who has achieved maximum sales is declared as the winner and certificates and prizes are awarded to them. The groups are then asked to prepare a report and a PowerPoint presentation of their experience which they present in the presence of the NGO, faculty members, Deans and Director.

**Implementation**

Students are divided into groups of ten on a random basis and they are designated as 'Sales Manager' for the duration of the activity. A group leader is chosen for each group, who receives the package, interacts with the faculty mentor, handles cash and returns unsold inventory. The Group Leader is designated as 'Area Sales Manager' and one faculty mentor is selected for each group who is designated 'Regional Sales Manager'. Each faculty mentor then briefs the student group allotted to them. They explain the objective of the exercise, the way the event is to be conducted and general guidelines on communication, dress code, pricing etc. The students are then let out on the field. During the event, students report daily sales to the group leader and the group leader in turn reports to the Faculty Mentor. The Group leader deposits daily cash and orders further inventory if required from the Faculty Mentor. Faculty Mentor makes it a point to accompany the students on a few visits.

At the end of the event, cash and inventory are tallied and money is handed over to the respective NGO. The students are then asked to give a feedback on their learnings from the event on a ten-point scale on the following parameters –

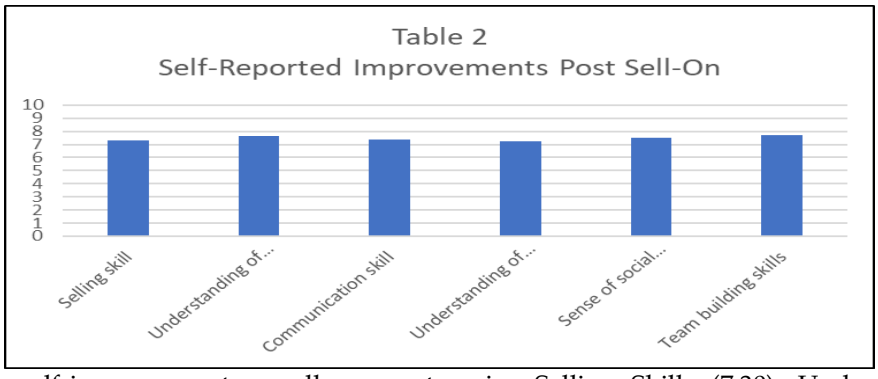
Selling Techniques learnt
Understanding the customer needs
Communication Skills learnt
Understanding Management Principle.
Awareness of societal issues
Working in Teams.
Outcomes

Table 1

| Year | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|
| Date of the activity | 11th to 14th August | 13th to 15th August | 17th to 20th August | 17th to 23rd August |
| Number of students | 176 | 112 | 240 | 300 |
| Sold goods worth GBP | 1051 | 1618 | 2444 | 8333 |
| Sale in GBP per Student | 5.97 | 14.45 | 10.18 | 27.78 |
| Supporting NGO | GODS | GODS | Udyamita, Envirovigil | Udyamita Seva Sahyog |

In four years since inception, the Sell-On program has increased in quantity and quality. The number of students has gradually increased from 176 to 300. The amount of goods sold has taken a quantum jump from GBP 1051 in the year 2014 to GBP 8333 in the year 2018. (See Table 1). Part of the reason for increase is the increase in the number of students participating in the program, but the bigger reason is increase in sale per student which went up from GBP 5.97 to GBP 27.78.

At the end of the Program, students were asked to give their feedback on the improvement they found in themselves on a scale of 1 to 10 on the parameters set in the objectives. The overall improvement felt by the students has been very satisfactory (See Table 2)




The average self-improvement on all parameters i.e. Selling Skills (7.30), Understanding the Customer (7.62), Communication Skills (7.36), Understanding the Principles of Management (7.25) Social Responsibility (7.48) and Team Building Skills (7.70) has been above seven.

The biggest gain for VESIM Business School has been on the placement front. The Sell-On Program in conjunction with other experiential learning pedagogy has helped students get placed and that too at a higher salary package. (See Table 3).

Table 3

% Placements as well as avg. Annual salary last four years

| Batch | 2013-2015 | 2014-2016 | 2015-2017 | 2016-2018 |
|---|---|---|---|---|
| % PLACEMENTS | 74.41 | 78.945 | 79.125 | 94.785 |
| AVG. Salary offered as CTC in GBP | 3522 | 4022 | 4489 | 6056 |

Students placed in the industry directly from the campus has gone up from 74% in 2014 to 94% in the year 2018. The salary package offered by the corporates to the graduating MBA's has climbed by more than 40%.

**Discussions and Conclusions**

The Director and the Dean's Council have expressed satisfaction at the progress that students have shown at placement interviews since past four years. Sell-On has proved to be a very effective pedagogy for VESIM Business School students to learn basic skills required of them in the corporate world. It uses experiential learning where students acquire skills by dealing in real life situations. It not only enhances their employability skills but also their ability to face failures and sensitization of societal issues. It has proved to be a very successful model and can be replicated at other B-schools too.

Sell-On creates a sense of accomplishment in a student and he/she feels involved in the learning process. It takes meticulous planning, disciplined implementation and thorough analysis of the outcomes through tremendous efforts of Heads of Departments and associated faculties to achieve this success.

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Annexure A
Experiential Programs at VESIM Business School

| Sr. No | Program | Description | Duration in days | Learning Objectives |
|---|---|---|---|---|
| 1 | Parichay | Outbound Management Games Program | 2 | Apply ingenious ideas to solve a given problem. Practice and evaluate team building skills.<br>Exhibit effective communication skills through written reports and public speaking through oral de-briefing.<br>Explain and describe the management principles learnt. |
| 2 | Sell-On | On-Field Sales | 6 | Students should be able to:<br>Identify and explain customer needs and wants<br>Apply various selling techniques<br>Apply various selling techniques<br>Apply various selling techniques<br>Demonstrate public speaking skills<br>Identify and suggest role of Social responsibility in business<br>Practice and evaluate team building skills |
| 3 | Yuva for Seva | Community Program | 21 | The Student should be able to:<br>Analyze the real problems facing the community.<br>Assess the interventions required by the community.<br>Formulate solutions for the community. |
| 4 | Summer Internship Program | Industry Exposure | 90 | Student should be able to:<br>Apply classroom learning to work-place<br>Demonstrate disciplined work culture<br>Complete Projects in a time bound manner<br>Create a network within the organization |
| 5 | Management Internship Program | Industry Research | 120 | Students should be able to:<br>Apply classroom learning to identify industry problems<br>Apply research methods to solve industry problems<br>Write a report on the research conducted. |
| 6 | Domain based Projects | On-Field task completion average @1 day per subject | 25 | Student should be able to:<br>Apply domain knowledge to complete the given task<br>Complete Projects in a time bound manner.<br>Present the findings to the class. |
| 7 | Strategy Business Game | Computer based Simulation | 2 | Student should be able to:<br>Apply domain knowledge in a competitive environment. |
| 8 | Insanity | Sports Participation | 3 | Students should be able to:<br>Exhibit leadership skills<br>Use their strengths to the maximum<br>Demonstrate team qualities. |
| 9 | Leadership Activities | Event Participation @1 day per student per year | 2 | Students should be able to:<br>Exhibit leadership skills<br>Demonstrate team qualities. |
| 10 | Employability Skills | Mock Group Discussion & Personal Interviews | 2 | Students should be able to:<br>Demonstrate the right approach to Group discussion and Personal Interviews. |

# Perceived classroom engagement and perceived classroom learning: Ethics class case study

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**Key words**
Active learning, engagement, ethics, student learning

**Abstract**

*Active learning and flipped classrooms continue to trend upwards in higher education. Experts disagree on whether this trend has improved student learning. A known benefit of the flipped classroom is moving beyond identifying and explaining a concept to application, analysis, and evaluation of the topic. Yet, there is debate between students and among academic experts on the effectiveness of the flipped classroom to enhance classroom learning. This study will focus on the perceived engagement and perceived learning of a variety of activities in a Professional Ethics class. The purpose of this study is to ascertain the perception of which activities are most engaging and which contribute the most effectively to learning. Students completed an online survey on a four-point scale to identify their perceived engagement and perceived learning. Results of the study indicate that perceived learning increased with increased engagement, though the correlation was weak. The information from this study facilitates designing a class with high engagement and effective learning. Note: classroom engagement should not be confused with student engagement. This paper only focuses on the student's perception of engagement in specific classroom activities.*

## Introduction

Teaching and learning are important concepts in higher education. Faculty members are interested in understanding how to maximize their effectiveness during the face-to-face time in the classroom. This is also important for corporate training. A variety of learning methods have been identified, were used, categorized and analyzed for effectiveness.

The first learning objective of this study was to investigate students' perception of classroom engagement as it related to classroom learning. The second learning objective was to discover what type of activities students found most engaging. The third learning objective was to determine what kind of activities students found were most conducive to learning. The final learning objective was to use the information gathered to adjust improve teaching and learning in future classes.

Based on discussions with other faculty members, a general perception of classroom engagement is not that difficult. However, discerning learning from classroom activities is more difficult. Even direct assessments only provide information about what students know, not necessarily what they learned. One useful method for understanding what engages students and what helps them learn is to ask. Anonymous feedback from students helps an instructor understand not only what students find engaging, but also what students perceive as useful learning activities.

## Literature review

Not surprisingly, experts do not agree on one concise goal for higher education. Some of the identified targets are "to provide a better life" (Nyangweso, 2017), "advance learning" (Kiener, Green, & Ahuna, 2014), and "for students to learn to apply the knowledge and skills they acquire to the realm of everyday life" (Dajani, 2013). Although it is not necessary to agree on a goal or set of goals for higher education, it is essential to set goals to be able to measure success. One standard measure used by institutes of higher learning is meeting learning outcomes (De Vlieger, Jacob, & Stange, 2017). By setting appropriate learning outcomes and helping students reach these outcomes, students should achieve advanced learning, build a better life, and can apply their knowledge to their personal and professional lives. Determining methods and techniques for instructors to help more students master learning outcomes is essential to continuous improvement and higher quality in higher education.

Student engagement is one of the better predictors of personal development and mastering of learning outcomes (Carini, Kuh, & Klein, 2006). Prince (2004) analyzed research on student engagement

and stated student engagement and positive learning outcomes were nearly a consensus. Active learning, defined as classroom activities using collaborative learning, contributes to classroom engagement (Prince, 2004). Intentional and appropriate use of educational technology in the classroom has positive correlations with engagement (Chen, Lambert, & Guidry, 2010). Continued research into improvements in classroom engagement techniques is essential to enhance methods to help more students master learning outcomes.

Active learning and flipped classrooms continue to trend upwards in higher education (Allen, Withey, Lawton, & Aquino, 2016). Flipped classrooms intend to use class time to use higher levels of Bloom's Taxonomy (create, evaluate, analyze, and apply) as the lower levels (understand and remember) are expected to be addressed by students prior to class time by reading the textbook, watching videos, and completing assignments such as online quizzes, journaling, and guided questions. Active learning uses interactive techniques and methods designed to increase student attention, participation, and engagement (Hora & Ferrare, 2014). Multiple higher education studies have identified high student achievement by using active and interactive teaching methods (Lane & Harris, 2015, Wieman & Gilbert, 2014).

Unfortunately, changing from a lecture-based traditional classroom to a flipped classroom model does not always increase student learning (Hunt, Trent, Jackson, Marquis, Barrett-Williams, Gurvitch, & Metzler, 2016). Instead, focusing on what engages students is better information and leads to better information for meeting learning outcomes (Allen et al., 2016). Understanding the students' perception of what leads to improved classroom engagement and classroom learning is essential for faculty to consider when designing how best to manage and use classroom time.

**Research Methodology**

To run this exercise, first, select a course to use as the framework. Although it may not be necessary, contact the organization's Institutional Research Board (IRB) to receive permission to conduct research. During the first week of class, students decided whether they were willing to participate in the study. Students who were willing to participate signed and returned an informed consent that explained the purpose and goals of the study. Based on the course's learning outcomes, identify, create, and compile a variety of activities (Appendix A). Conduct these activities during class. After each event, ask students to use their mobile technology (Smartphones, tablets, or laptops) with the survey site "Poll Everywhere" to anonymously share their perceptions of the activity related to engagement and learning. The specific questions and possible responses were identical for each event (Appendix B). The survey tool had the functionality to export data into a spreadsheet format.

After each activity, download the results into a spreadsheet and name the sheet to associate it with the activity. Store the spreadsheet for analysis. At the end of the course, compare each event to the other events based on the students' perception of their engagement and learning. Rank activities from highest to lowest for engagement and education.

Over 40 students participated in the study from two classes. The course used for this study was a Professional Ethics class. The class met twice a week for 15 weeks, each class lasting 80 minutes. Students consisted of 15% first-year students, 54% second-year students, 27% third-year students, and 4% fourth-year students. All students were in College of Business degree plans. Students provided feedback on 17 activities. Of the 17, 6 were surveyed in both classes while 11 were only surveyed in 1 of the two classes. The intention was always to survey both classes, but some surveys did not occur because of running out of time at the end of a course. In other instances, the instructor did not remember to conduct the study.

**Results**

The formula for calculating weighted scores allocated zero points for little to no, one point for basic, two points for good, and three points for excellent. The overall ranking order for engagement and learning is in Appendix C. Appendix D shows the best fit line from the data that shows on average, perceived learning increased as perceived engagement increases.

Some interesting and surprising findings occurred when analyzing the data. The highest perceived engaging activity, the (13) Multidiscipline Mingle, was one of the lowest in perceived learning. The activity was unique, not often done at my institution, and the students enjoyed interacting with students from other classes. However, the students did not link their teaching ethics to students in a different class as a sign of improved learning.

Students watched three videos. For each video, the higher the perceived engagement, the higher the perceived learning. The (07) Cookie Conspiracy is an activity that students talk about with the instructor in semesters after completing the ethics class. It is unusual and memorable. The activity had low perceived engagement and learning. Two (14 and 11) actions requiring role play resulted in significant differences in perceived engagement but were both high in perceived learning. Not surprisingly, the (02) Course Content Lecture was near the lowest in perceived engagement; however, it was in the top five of perceived learning.

**Discussion and conclusion**

The first learning objective of this study was to investigate students' perception of classroom engagement as it related to classroom learning. On average, as perceived engagement increased, perceived knowledge also increased. However, the link is weaker than expected.

The second learning objective was to discover what type of activities students found most engaging. The top four activities in perceived engagement were group activities. These four activities also required students to move around the room. When showing videos, it is important to have videos that keep the students' attention and are interesting and on topic.

The third learning objective was to discover what type of activities students found were most conducive to learning. As already stated, the activities with higher perceived engagement were generally those with higher perceived knowledge. An exception to this association was the lecture, which had higher perceived learning, but low perceived engagement.

The final learning objective was to use the information gathered to adjust improve teaching and learning in future classes. To enhance teaching and learning, more intentional and appropriate lecturing should be considered. The lecturing should be kept brief, 10 minutes or less, and focus on how to apply and create, instead of regurgitating information from the textbook. Although a positive association between engagement and learning was expected, finding more engaging activities tied directly to the learning outcomes of the course continues to be a focus for class preparation.

A lesson learned from this exercise was the importance of explaining and debriefing each activity. When facilitating each activity, the debriefing focused on teaching students the desired learning from the activity. In the flipped classroom, finding active learning activities can sometimes unintentionally become more important than meeting learning outcomes. This exercise helped balance the focus on engagement and learning.

**Limitations and direction for future study**

A limitation of the study might be the bond that forms between faculty and students. As the semester progresses, relationships are built between instructor and students and there could be a halo or horn effect; that is, students might have selected a response based on the overall feeling for the class and the instructor rather than carefully consider the differences between each activity.

Another limitation of the study would be sample size. This study was done for one semester and two classes of approximately 25 students. There were some significant differences in results from the same activity in the different classes.

A final identified limitation was the results were aggregated. Rather than look at each student and the relationship between perceived engagement and perceived learning, this was consolidated be class.

Future studies could use more instructors using the same activities. It would help to increase the number of classes and participants. A final recommendation would be to keep track of the relationship of perceived engagement and perceived learning by individual participant rather than by class.

**APPENDIX A**
**ACTIVITY LIST**

A short description of each activity. An asterisk (*) appears on the activities in which research using a search engine is likely to provide multiple links for activity details.

Alligator River Case*: A short scenario in which five individuals interact such that all five individuals make questionable ethical decisions. Students are asked to rate the character's behaviors anonymously. The first name listed is most unethical, second name listed is the second most unethical, and so on. All five characters are listed with a name for number 1, number two, number three, number four, and number five. After all students are finished, there is a discussion as to why students chose the

character as most unethical. Activity objectives are for students to understand that based on background, experiences, and ethical understanding that there will be a variety of rankings and that compelling arguments exist for different characters to be identified as most unethical.

Course Content Lecture: A 10 to 15-minute lecture without interactive discussion. Activity objective is to cover course content without using an active learning technique.

Veil of Ignorance*: Four economic policies are presented. Each economic policy has two options. Students are asked to select from the two options in two rounds. In the first round, they are assigned a role with family, occupation, and wealth information. In the second round, they are not assigned a role. Activity objective is to demonstrate that it is often natural to select between options based on how the decision will affect one personally rather than how the decision will change society.

Diamond 9 Ethical Activity*: Nine ethical business positions (for example not testing on animals, donating money to charity, etc.) are printed on diamond shapes. Students are asked to construct a large diamond using all nine smaller diamonds with the diamond that is most important to them personally on the top and the position least important on the bottom. Activity objective is for students to examine motives for position rankings and understand there are benefits and costs associated with an ethical stance in business.

Personal Experience of Unethical Activity: Split students into groups of four. Have them discuss any unethical behaviors they have witnessed in the workplace. After they have talked for five minutes, instruct them to choose a situation that they feel will be debated regarding whether the behavior is ethical or unethical. Write down the scenario. After each team has completed documenting the case, have teams trade scenarios with other teams. Once traded, teams are to discuss the situation and discuss which behaviors (if any) were unethical. Activity objective is for students to understand that they have been involved in or witnessed ethical decisions and that discerning if behaviors are unethical can be difficult.

Creating Ethical Cultures in Business (TedTalk Video) *: After viewing the video, ask students to share personal revelations related to course content. Activity objective is for students to apply course concepts to personal experiences based on information from the video.

Cookie Conspiracy: Recruit three to four students to partner on this activity. Bring in a container of cookies and give to one of the students. This student will bring the cookies into class and set them on the table/desk in front of him or her. Once class starts, have the student leave the room leaving the cookies behind (student forgot textbook or needs to take a phone call). Have one of the students (or the instructor) open the container, grab a cookie and take a bite, and then ask who else would like a cookie. Immediately the other recruited students agree to take, and eat, a cookie. Cookies are then given to any student who agrees to take a cookie. The student who left the room now returns, pretends to be angry (or disappointed) because these cookies were for a project in the student's next class. After some awkward silence, the instructor debriefs and explains that this was a setup but asks why no one objected. A discussion to emphasize that courage is needed to stand up and stop the unethical behavior; it is not enough to not participate. Activity objective to understand that personal action is often required to prevent and discourage unethical behavior.

Vail Resorts Crisis Management (NJVID Video) *: This video describes an eco-terrorist attack at Vail Resorts, the ethical issues leading up to the attack, crisis management planning, and the organization's response. Activity objective is to understand the importance of crisis management planning and how social and ethical audits are needed to anticipate possible risks.

Harassment Case Study: In class case study to walk through the following five steps: problem, people (stakeholders), ethical principles, moral philosophies, and plan (solutions/recommendations). Activity objective is to follow a process to make informed recommendations.

Ashley Madison Case: Discuss businesses with goods or services that many perceive as unethical, though legal. Who is more at fault, the company or the customers? Activity objective is to understand the similarities and differences between legal, illegal, ethical, and unethical.

Powerbase Role Play: Split students into five to seven groups. Assign or have them randomly pick from reward, coercive, legitimate, referent, expert, informational, and connection. Give them time to create a skit in which the power base is used unethically. After each team presents, have the class identify the powerbase used and if the example used was unethical. Activity objective is to understand that power can be abused, and care should be taken when using power in the workplace.

Industry Analysis: Split students into groups. Have groups select from the following industries: Advertising & Marketing, Construction, Financial Services, Energy, Human Resources, Consumer Products & Services, Logistics & Transportation, Business Products & Services, IT Services, and Health. Using technology, have students search for scandals or ethical issues unique to the industry (for example, healthcare privacy – minors and parents). Activity objective is to identify unique ethical issues to provide a broader understanding of ethics in the workplace.

Multidiscipline Mingle: Partner with another class. Combine classes. Create groups with students from each class. For example, combine an ethics class with a communications class. Provide case studies and have groups provide solutions. Each group will present their solutions. The communications class will make recommendations on how to effectively communicate the solutions and the ethics class will make recommendations on concepts to support proposals. Activity objective is for students to be experts in their course content and teach to other students.

Country Culture Role Play*: Split students into groups. Assign or let students select a foreign country. Using Hofstede's cultural dimensions, role play a workplace scenario in which a manager uses a home country behavior that may make a foreign worker uncomfortable (for example, public praise for a worker from a culture where individual recognition is not used). Activity objective is to consider the ethical implication of understanding the role of culture in international business situations.

Michael Sandel's Justice Video Series*: Interactive use of segments of this video series. Stop the video and interact with students and then compare class discussion with the responses from Sandel's class. Activity objective is for students to understand that the concepts being discussed are also being presented at other universities. A secondary objective is for students to gain confidence by having similar thoughts and insights to students from one of the top Universities in the United States.

Ethical Challenge – What Would You Do? Anonymous interactive survey tool is used for students to select from multiple actions to perform from short cases. After picking, students discuss the reasons for their selection. Activity objective is for students to see the variety of responses, to understand how people view ethical situations differently, and to attempt to persuade others to change answers.

Multidiscipline Simulation: The simulation used was provided as instructor materials by the textbook publisher. A basic scenario with ethical issues is shared with all students. Separate information is provided to groups of students by job title, for example, the Vice President of Sales and Marketing, General Counsel, Vice President of Finance, Vice President of Human Resources, and so on. Students are broken into groups by job title and asked to make recommendations based on the information they have and assumptions they make. Each group shares their recommendations. Next, groups are formed with one person from each job title and information is shared and the groups are asked to make a recommendation. Activity objective is to understand the importance of sharing information with other departments when making ethical decisions. A secondary objective is to understand the importance of assumptions in decision making and that assumptions need to be validated when possible.

**APPENDIX B**
**POLL EVERYWHERE QUESTIONS**

On a 4-point scale, how engaged were you in the activity?
Little to no engagement
Basic engagement
Good engagement
Excellent engagement

On a 4-point scale, how much did you learn from the activity?
Little to no learning
Basic learning
Good learning
Excellent learning

**APPENDIX C**
**ACTIVITIES RANKED**

Weighted ranking – 0 points for little to no, 1 point for basic, 2 points for good, 3 points for excellent.

ENGAGEMENT RANKINGS

| | Engaged | | | | | Weighted Engagement |
|---|---|---|---|---|---|---|
| 13. Multidiscipline Mingle | 11 | 4 | 3 | 0 | | 2.44 |
| 01. Alligator River | 18 | 27 | 3 | 1 | | 2.20 |
| 14. Country Culture Role Play | 9 | 5 | 1 | 1 | | 2.19 |
| 03. Veil of Ignorance | 15 | 21 | 3 | 1 | | 2.18 |
| 04. Diamond 9 Ethical Activity | 5 | 11 | 2 | 0 | | 2.17 |
| 15. Michael Sandel's Video (Justice Series) | 7 | 12 | 4 | 0 | | 2.13 |
| 09. Harassment Case Study | 16 | 22 | 4 | 3 | | 1.93 |
| 05. Personal Experience | 9 | 24 | 8 | 1 | | 1.90 |
| 16. Ethical Challenge | 4 | 11 | 6 | 0 | | 1.90 |
| 08. Vail Resorts Crisis Management Video | 2 | 8 | 5 | 0 | | 1.80 |
| 17. Multidiscipline Simulation | 7 | 6 | 3 | 2 | | 1.67 |
| 10. Ashley Madison Case | 3 | 10 | 5 | 1 | | 1.63 |
| 12. Industry Analysis | 3 | 10 | 6 | 1 | | 1.60 |
| 02. Course Content Lecture | 7 | 16 | 12 | 2 | | 1.59 |
| 06. Creating Ethical Culture Video | 8 | 20 | 12 | 4 | | 1.45 |
| 11. Powerbase Role Play | 6 | 15 | 11 | 5 | | 1.19 |
| 07. Cookie Conspiracy | 8 | 4 | 2 | 5 | | 1.00 |
| | 138 | 226 | 90 | 27 | | 1.82 |

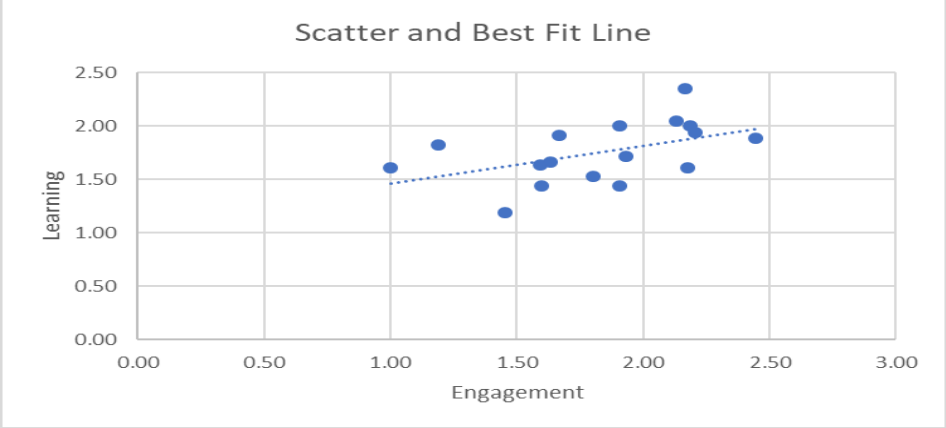
LEARNING RANKINGS

| | Learning | | | | | Weighted Learning |
|---|---|---|---|---|---|---|
| 14. Country Culture Role Play | 4 | 6 | 8 | 1 | | 2.35 |
| 03. Veil of Ignorance | 4 | 8 | 4 | 0 | | 2.05 |
| 02. Course Content Lecture | 9 | 25 | 7 | 0 | | 2.00 |
| 04. Diamond 9 Ethical Activity | 10 | 19 | 10 | 0 | | 2.00 |
| 17. Multidiscipline Simulation | 3 | 10 | 5 | 3 | | 1.94 |
| 01. Alligator River | 12 | 3 | 1 | 1 | | 1.92 |
| 05. Personal Experience | 6 | 8 | 2 | 1 | | 1.89 |
| 07. Cookie Conspiracy | 8 | 28 | 8 | 1 | | 1.83 |
| 09. Harassment Case Study | 10 | 20 | 6 | 3 | | 1.72 |
| 08. Vail Resorts Crisis Management Video | 6 | 11 | 5 | 1 | | 1.67 |
| 16. Ethical Challenge | 4 | 7 | 3 | 2 | | 1.64 |
| 15. Michael Sandel's Video (Justice Series) | 8 | 16 | 18 | 3 | | 1.61 |
| 11. Powerbase Role Play | 3 | 12 | 6 | 1 | | 1.61 |
| 10. Ashley Madison Case | 2 | 6 | 7 | 0 | | 1.53 |
| 06. Creating Ethical Culture Video | 9 | 30 | 8 | 1 | | 1.44 |
| 13. Multidiscipline Mingle | 6 | 18 | 10 | 2 | | 1.44 |
| 12. Industry Analysis | 4 | 11 | 16 | 0 | | 1.19 |
| | 108 | 238 | 124 | 20 | | 1.76 |

| | Engaged Excel | Good | Basic | None | | Learning Excel | Good | Basic | None | | Weighted Engagement | Weighted Learning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01. Alligator River | 18 | 27 | 3 | 1 | | 9 | 30 | 8 | 1 | | 2.20 | 1.92 |
| 02. Course Content Lecture | 7 | 16 | 12 | 2 | | 10 | 19 | 10 | 0 | | 1.59 | 2.00 |
| 03. Veil of Ignorance | 15 | 21 | 3 | 1 | | 9 | 25 | 7 | 0 | | 2.18 | 2.05 |
| 04. Diamond 9 Ethical Activity | 5 | 11 | 2 | 0 | | 4 | 8 | 4 | 0 | | 2.17 | 2.00 |
| 05. Personal Experience | 9 | 24 | 8 | 1 | | 8 | 28 | 8 | 1 | | 1.90 | 1.89 |
| 06. Creating Ethical Culture Video | 8 | 20 | 12 | 4 | | 8 | 16 | 18 | 3 | | 1.45 | 1.44 |
| 07. Cookie Conspiracy | 8 | 4 | 2 | 5 | | 6 | 11 | 5 | 1 | | 1.00 | 1.83 |
| 08. Vail Resorts Crisis Management Video | 2 | 8 | 5 | 0 | | 2 | 6 | 7 | 0 | | 1.80 | 1.67 |
| 09. Harassment Case Study | 16 | 22 | 4 | 3 | | 10 | 20 | 6 | 3 | | 1.93 | 1.72 |
| 10. Ashley Madison Case | 3 | 10 | 5 | 1 | | 4 | 6 | 8 | 1 | | 1.63 | 1.53 |
| 11. Powerbase Role Play | 6 | 15 | 11 | 5 | | 6 | 18 | 10 | 2 | | 1.19 | 1.61 |
| 12. Industry Analysis | 3 | 10 | 6 | 1 | | 3 | 10 | 5 | 3 | | 1.60 | 1.19 |
| 13. Multidiscipline Mingle | 11 | 4 | 3 | 0 | | 4 | 7 | 3 | 2 | | 2.44 | 1.44 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14. Country Culture Role Play | 9 | 5 | 1 | 1 | | 12 | 3 | 1 | 1 | 2.19 | 2.35 |
| 15. Michael Sandel's Video (Justice Series) | 7 | 12 | 4 | 0 | | 4 | 11 | 16 | 0 | 2.13 | 1.61 |
| 16. Ethical Challenge | 4 | 11 | 6 | 0 | | 3 | 12 | 6 | 1 | 1.90 | 1.64 |
| 17. Multidiscipline Simulation | 7 | 6 | 3 | 2 | | 6 | 8 | 2 | 1 | 1.67 | 1.94 |
| | 138 | 226 | 90 | 27 | | 108 | 238 | 124 | 20 | 1.82 | 1.76 |

APPENDIX D
SCATTER GRAPH AND BEST FIT LINE

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# Impact of supply chain performance on profitability in pharmaceutical industry

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**Keywords**
Inventory Management, Logistics, Supply Chain Management, Supply Chain Performance measure

**Abstract**

*Purpose – Value creation in pharmaceutical value chain is complex as it must cover suppliers, manufacturers, wholesalers, distributors, retailers, health services providers and medical practitioners across different segments of the market. This demands a robust supply chain that can integrate all these links for cost efficiency and profitability. This paper examines the supply chain performance of Pharmaceutical Industry and quantifies the impact of supply chain performance on overall profitability of the firms as measured by profit after tax to sales ratio (PATSR)*

*Design/methodology - A conceptual model is developed integrating SCOR KPIs and other supply chain financial metrics available in the literature. This conceptual model is then converted into a statistical model using OLS to establish the relationship between supply chain performance and profitability. Hypotheses are formulated and tested to understand whether the identified performance variables have any significant impact on profitability.*

*Results/Findings –Pharmaceutical industry has suffered from supply chain inefficiency (SCI) and poor productivity of supply chain fixed assets (SCFA), causing poor profitability. The supply chain costs incurred by the firms in the form of inventory and distribution costs resulted in SCI. The investment in SCFA could not bring in the desired returns affecting profitability. The analysis reveals the importance of supply chain efficiency as a maximum contributing factor for profitability and the need of an integrated supply chain strategy to bring back growth in PATSR.*

*Practical Implications and Conclusion - This paper contributes towards building a predictive model among supply chain performance and profitability which can be used as an effective decision-making tool in supply chain. The suggested strategic model focusing the core supply chain on inventory and distribution management would result in both improvement of operational efficiency and balancing of required liquidity through the chain.*

# The relationship between leadership, relationship capital and intention to stay

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**Keywords**
Malaysian Armed Forces (MAF), leadership, relationship capital and intention to stay

**Abstract**

*The main objective this study is to investigate the relationship between leadership, relationship capital and intention to stay among Malaysian Armed Forces (MAF) and attempt to examine how the relationship capital may be enhanced to improve employee retention problem. Employee retention always plays a vital role for all organization's success, especially for military organization which human cost occupies the largest portion. With the specific experience and skills, professional staff of military organization have a lot of opportunities to change their working place. Their leaving will bring about unrecoverable costs on orientation and training as well as incur cost for new staff. Furthermore, the morale of remaining staff will be also affected. The research applies quantitative method and survey by questionnaires will be distributed among Malaysian Armed Forces (MAF). The collected data will be analysed using SPSS version 25.0. The expected results and findings of this study suggestion that the leadership has a significant (positive) relationship with intention to stay.*

## Introduction

We are now in the world without borders. According to Shahid (2018), no matter what industry it is essential to comprehend what the employees think and sense about the organization and the working culture. An organization effort to recognize the reasons for employee retention can serve to keep turnover down. When organizational leaders naturally respect employees as more than mere work resources, employees reach a high level of performance and will continue with the organization longer.

The organization's success and prosper cannot be realized without support and contribution from its employees. From modern human resource perspective, human capital is the most valuable assets for the organizations (Mello, 2011). Employee is a person who has agreed to provide service for employer in exchange for money (legal dictionary, 2010). That means employees work for the employers to make contribution to the production, sales and service, at the same time employers pay employee in terms of money for their efforts contributed to the organization. Employees and employers to earn salary, and employers need employees to get work done, by such way to make profit for the organization.

Employees leave organizations if they are not satisfied with multiple factors linked to the company. According to Branham (2005), there are seven main reasons why employees leave, which are lack of recognition, low pay, unfulfilling job, inadequate career advancement, poor management practices, untrustworthy leadership, and disordered work cultures.

Employee retention always plays a vital role for all organization's success, especially for Military industry which human cost occupies the largest portion. With the specific experience and skills, professional staff of Military industry have a lot of opportunities to change their working place. According to Phuong (2017), the employee leaving will bring about unrecoverable costs on orientation and training as well as incur cost for new staff. Furthermore, the morale of remaining staff will be also affected. Therefore, it is essential to understand the factors affecting employee's intention to stay.

This study investigates the relationship of leadership and relationship capital to employee's intention to stay. In addition, the mediating effect of relation capital is also to be examined. The study aims to determine elements of employee intent to stay in Military Arm Forces (MAF) with relate in relationship capital (RC) which is consists of communication, commitment and trust. However, this study will emphasize what the direct effect leadership for the employee's intention to stay.

The Indian Military is currently suffering from a serious shortage of officers. Lucrative offers from outside the military as well as job-related factors in the service serve as prime detractors forcing the

servicemen to leave the military prematurely. This shortage of officers affects the military leadership on ground and is therefore a matter of grave concern for the defence of the country (Rakesh Kumar, Satyabhusan Dash & Sharma, 2015).

US military faces a sweeping turnover among upper Commanders (Gordon Lubold & Nancy Youssef, 2018). US Military faces high turnover of top brass. Changes in command affect large number of key posts even as Defence Department Civilian (DDC) leadership is also in flux. The Pentagon, within the coming months is expected to undergo its most dramatic period of turnover at top military leads under the Trump administration during which top civilian leaders aren't serving in permanent capacity. At least five of the seven members of the Joint Chiefs of Staff will be replaced this year, including the chairman, vice chairman and head of Army, Navy and Marine Corps (Nancy Youssef and Gordon Lubold, 2019). The facing retention issues the Corps need to recruit highest number of US Marine in a decade. The Corps has the "youngest population" but "highest turnover", with nearly 60.4 percent of the Corps the rank of Commanding Officer and below. Meaning that, headed to fiscal year 2019 the Corps will need to recruit roughly 38,500 new Marines to adequately man the force (Shawn Snow, 2018).

In the Belgian Armed Forces approximately 30% of the recruits voluntarily withdraw from initial training. Most of these stops take place within the first month, sometimes even after a few days. It seems that this figure is not very different from the voluntary turnover rate of most West European Armed Forces (Bert Schreurs, 2007).

For the Malaysian Armed Forces (MAF) with the same issue faces high turnover of the key personnel, some specific occupations are still critically understaffed. There is an urgent need such as technicians and Air Traffic Controller for Royal Malaysian Airforce, Engineer (Electronic, Mechanical & Electrical), Submariners and PASKAL for Royal Malaysian Navy, and COMMANDO and infantrymen for Royal Malaysian Army.

Two major reason, the military personnel to leave their organization prematurely, which is voluntary turnover such as early retirement, badly work environment, poor leadership, relationship, attractive job from outside etc. The second reason is Service No Longer Required (SNLR) due to drug abuses, criminal cases, high absentees among the soldier etc. All those problems have portrayed a negative image for organization and much contributed the high turnover of Malaysian Military. With strength of 110,000 personnel, the Human Resource Department under MINDEF faced a challenging task in managing its resources. The rank and file are the major segment which contributes to the statistics where almost 60 percent of the total strength came from this group (SNLR). The both issues maybe due to early retirement, badly work environment, poor leadership and relationship among leaders, managers and subordinates.

The leadership, relationship capital and the employee's intention to stay are the keys to determine the organization's success. Many researchers have been conducted to improve the leadership, relationship capital and maximize the intention to stay in various sector such as public sector (Murali Sambasivan, 2013), Trade Union (Jacqueline Koh, 2013), academic sector (Amena Shahid, 2018) and shipping industry (Yao and Huang, 2018). However, in the professional military industry, there has been relatively little research conducted towards the relationship between leadership, relationship capital and intention to stay. Hence, this study is conducted to address this research gap.

The graph below shows the top reasons employees would leave their current company.

Figure 1: *Service Sector by Michael Page (2015)*

**Literature review**

The intention is a psychological antecedent for the actual behaviour (Ajzen and Fishbein, 1980), individuals' intention to stay or quit, perform or not to perform a behavioral act can be the critical determinant of action. Intention to stay is the opposite of turnover intention (Kim, Price, Mueller and

Watson, 1996) are negatively correlated, (Steers and Mowday, 1981). Employee turnover hinders the organisation's work reaching its goals, profit of the organisation and damaging the organisation. Intention to stay is defined as employees' intention to stay in the existing employment relationship with their current employer on a long-term basis (Amena Shahid, 2018). Research on intent to leave focuses highly on the perceptions that effective leadership has an unambiguous effect on employee motivation and morale and therefore should receive adequate consideration (Udechukwu and Mujtaba, 2007). Organisations continuously try to learn how to retain quality employees, build trust and better communication, to develop employee commitment and to improve the leadership among the leaders of organisation. Therefore, the purpose of this study to investigate the perceptions of employees regarding the relationships between leadership, relationship capital (Communication, trust and commitment) and intention to stay and to recommend strategies that may guide to increases in employee intent to stay.

***Intention to Stay (Dependent Variable)***

Cheng, Mauno, and Lee (2014) referring to the definition of "retain" in Marriam Webster Collegiate Dictionary as retention, maintaining unchanged, and avoiding separation and defined "retain" as workers continuously maintain current position or job. According to Lacasse (2015) regarded it as adjusting institutional strategies or rules to have workers stay at the same unit or professional work. Different from turnover intention, retention intention stresses on remaining key human capitals in organisations and promoting organisational members' positive working behaviors (Amena Shahid, 2018). Lee, Shin and Greiner (2015) pointed out retention as expecting to continuously become an organisational member or continuously stay at the original organisation. Norton et al. (2014) defined intention to stay as individual subject work evaluation after getting into the work domain and interacting with the working environment, the identity to continuously involve special organisation goals, and the identity and willingness to continuously stay at the original work position. Inoue and Alfaro-Barrantes (2015) defined intention to stay as being willing to stay at an organisation to continuously work for the organisation. From domestic and international definitions of intention to stay.

Referring to Lin et al. (2016), retention is the positive side of turnover, and the factors in turnover and retention are mutually matched. From above turnover theories, factors in intention to stay are organised as followings;

Internal factor: Job satisfaction, job characteristics, role conflict, benefits, organisational climate, and promotion and development.

External factor: Unemployment rate, employment opportunity, and financial conditions of a company.

Personal factor: Age, seniority, gender, marital status, value, and family responsibility.

On my own perspective, define intention to stay mirrors the employees' level of commitment, trust, and communication to his or her organisation. Leadership style also is defined to remain the employees' continuously intention to stay to his or her organisation.

*Leadership versus Employee Intention to Stay*

Caldwell and Dixon (2010) stated, trust, support, and forgiveness are essential values used by leaders. The individual in leadership roles within an organisation managing employee with respect and dignity can enhance the performance of employees. Leaders and their ability in creating a climate of retention, a culture that delivers to employees in a way that promotes them to stay, will be an organisation's best safeguard against undesired turnover. Employees are more inclined to stay with an organisation when they feel that leaders display care and concern for them, if they are given a role that suits their skills and gets constant positive feedback and recognition (Amena Shahid, 2018). The quality of connection an employee has with his or her managers extends employee stay in an organisation (Ferreira, 2007 cited in Michael, 2008).

Understanding the concept of leadership is vital studying the relationship between leadership style and intent to stay. Organisation require strong leaders to inspire and support their employees. Leaders' skills to inspire, motivate, and satisfy their employees are important drivers of employees' intent to stay with their organisations (Shuck and Herd, 2012). Leaders who are more efficient are expected to engage their employees. Kim and Jogaratnam (2010) studied how individual and organisational determinants influence job satisfaction and employee intent to stay in the hotel and restaurant industry. In their study,

Kim and Jogaratnam used data from a survey of 221 hotel and restaurant employees. Direct leader leadership was one of the independent variables of the study. Direct leadership is a leadership style that concentrates on the achievement of tasks and progress of subordinates (Kim and Jogaratnam, 2010). The results showed that direct leader leadership does not hit job recognition, but it is a strong predictor of employees' intention to stay with the organisation.

Samuel and Chipunza (2013) noted that acquiring skilled employees motivates managers to increase employee retention and ensure employees do not leave the organisation. Employees intent to stay with an organisation if the organisational leaders support their well-being; if employees are aware of the employers' expectations of them; if employees felt confident and assured that they are the right candidate for the job; and if the organisational leaders implement excellent employee recognition programs. Effective retention strategies increased employee motivation and intent to stay with an organisation and led to a decrease in turnover intention.

Long and Thean (2011) study indicated a negative association between transformational leadership and turnover retention, meaning that transformational leadership can develop the intention to stay. Wells and Peachey (2011) adopted transformational leadership and transactional as leadership variables. The results revealed that both transformational and transactional leadership styles are likely to increase intent to stay with organisation. To know the relationship between leadership and retention of nurses. Forest and Kleiner (2011) examined the results of the nursing management styles, which is transactional leadership on nurses' retention and recruitment. The outcomes showed that transactional leadership decreases nurses' moral and increases their turnover retention. Forest and Kleiner suggested transformational leadership and explained that this leadership style is expected to enable nurses and improve their intention to stay. Several studies (Furtado, Batista, and Silva, 2011: Forest and Kleiner, 2011) indicated that leadership style is a positive predictor intention to stay.

H1: Leadership has a positive and direct effect on intention to stay.

*Leadership (Independent Variable)*

What Is Leadership? And Can You Learn to be a Good Leader says "is the art of motivating a group of people to act towards achieving a common goal (Susan Ward, 2019). In business setting, this can mean directing workers and colleagues with strategy to meet company's needs. This leadership definition captures the essentials of being able to inspire others and being prepared to do so. Effective leadership is based upon ideas (whether original or borrowed) but won't happen unless those ideas can be communicated to others in a way that engages them enough to act as the leader wants them to act.

Leadership can be defined as the ability of the management to make sound decisions and inspire others to perform well. It is the process of directing the behaviour of others towards achieving a common goal. In short, leadership is getting things done through others. "Leadership is a behavior that has the ability change the direction of an organization. Leadership needs to choose certain criteria in achieving organizational objectives. They can monitor subordinates to suit criteria selected for development and success purposes in addition can maintain a strong teamwork pattern". (Cartwright and Zender, 1960) and (Halpin, 1960).

Leadership is an important topic that will always attract attention due to its importance in shaping the fortunes of organizations around the world. Leadership is defined as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (Yukl, 2010). This suggests that for effective leadership to take place there must be communication and understanding between the leader and his followers. The definition suggests that leadership is a "two-way process that influences both individual and organizational performance" (Mullins, 2010).

Leadership is the crucial of any organisation. Leaders provide the direction and set the standards. In general, most people do not embrace change. With change comes uncertainty and fear of the unknown. Leadership and the different associated styles have an immense impact on how employees perform and grow, to lead positive organisational outcomes.

Bass and Avolio (1997), a single specific definition of leadership is a very complex task as literature and studies on this topic are varied and there is no definition which is widely and universally accepted.

Some definitions describe leadership as an act of influence, some as a process and yet others have looked at a person's trait qualities.

Leadership in the military perspective, like all leadership, concerns itself with the influence of members so that they willingly strive to ethically achieve assigned missions. Military leaders are one who inspires member commitment throughout the lead-up to, and involvement in, operations. They support members so that they can confront and accept the moral component of operations and encourage members so that they can deal with and suppress the fear of battle. Good military leaders put the needs of the mission and the concerns of the member before their own needs and concerns.

*Transformational Leadership Theory*

The leadership frameworks discussed so far are all useful in different situations, however, in civil organisation, "transformational leadership" is often the most effective style to use. Transformational leaders have integrity and high emotional intelligence. They motivate people with a shared vision of the future, and they communicate well. They're also typically self-aware, authentic, empathetic, and humble.

Transformational leaders inspire their team members because they expect the best from everyone, and they hold themselves accountable for their actions. They set clear goals, and they have good conflict-resolution skills . This leads to high productivity and engagement.

However, this style of leadership is not a "one size fits all" thing; often, you must adapt your approach to fit the situation. In military point of view, this leadership style will be used in different situation especially during peace but not appropriate during crisis. According to Kane and Tremble (2000) and Shamir et al (1998), in peacetime, military performance is associated with cohesion commitment to the organizational values and goals. It requires an effective leadership role to influence, motivate and inspire individuals to achieve the desired outcome. This show similarities approach using transformational leadership between civil and military but not during crisis.

Transformational style of Leadership comprises of the components of idealized influence, inspiration, intellectual stimulation and individualized consideration and has been suggested widely as the optimum style for managing change. Bass, Waldman, Avolio, and Bebb (1987) discovered that leaders scoring higher on Transformational Leadership factors have followers who display greater levels of transformational behaviours. The goal of transformational leadership is to "transform" people and organizations in a literal sense, to change them in mind and heart, enlarge vision, insight, and understanding; clarify purposes; make behaviour congruent with beliefs, principles, or values; and bring about changes that are permanent, self-perpetuating, and momentum building." -Steven Covey (1989).

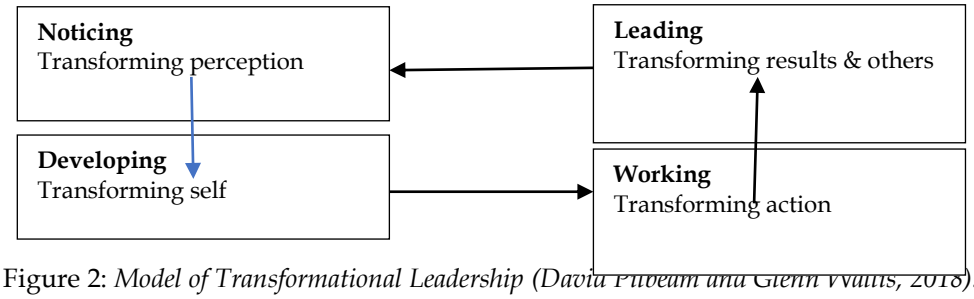


Figure 2: *Model of Transformational Leadership (David Putwain and Glenn Wallis, 2018).*

*Impact of Transformational Leadership*

Motivation change-centred. Anderson and King (1993): Concluded that with respect to the management of transformation processes in organizations, there is a strong need for leaders who are more change-centred. These leaders place value on the development of a clear vision and inspire followers to pursue the vision. In this way they provide a strong motivational force for change in followers. He concluded that besides a participative leadership style, a clear vision or mission is most likely to foster innovation.

Change beyond expectations. Bass (1985): Proposed a broader vision of transformational leadership, which was to motivate followers to produce changes beyond expectations. Specifically, transformational leaders are viewed as who have powers on employees with individual considerations, inspirations, intellectually stimulations, and personal development.

Loyal. Buchanan, 1974: Defines commitment as "loyalty, identification, and involvement with some appropriate object". In an organizational setting, such loyalty involves feelings of attachment, which develops as individuals share values in common with other members of the group.

Conclusion that Transformational Leadership are to be positively and highly significant with employee commitment and co-related to employee motivation. It has a great impact on employee commitment intention to stay to his or her organisation.

*Transactional Leadership*

Transactional leadership is formed and promote compliance by followers through both concept, reward and punishment. Transactional leaders believe that the employee's performance is completely dependent on these two factors. Through rewards and punishments system they can keep followers or employees motivated for short-term. When there is an encouragement, the workers put in their best effort and the bonus is in monetary terms in most of the cases. In case they fail to achieve the set target they are given a negative appraisal. Transactional leaders pay more attention to physical and security requirements of the employees.

Transactional method is effective in crisis and emergency as well as for projects that need to be carried out in a specific way. "Set goals, articulate explicit agreements regarding what the leader expects from organizational members and how they will be rewarded for their efforts and commitment, and provide constructive feedback to keep everybody on task" (Vera & Crossan, 2004). It only focusses on increasing the efficiency of established routines and procedures and are more concerned with following existing rules than with making changes to the structure of the organization.

Transactional leadership is present, approached and adopted in many civil organisations, and it does offer some benefits. For example, it clarifies everyone's roles and responsibilities. This leadership approach seems has drawback in civil organisation. Because transactional leadership judges team members on performance, people who are ambitious or who are motivated by external rewards including compensation often thrive but opposite with other. The downside of this style is that, on its own, it can be chilling and amoral, and it can lead to high staff turnover. It also has serious limitations for knowledge-based or creative work. As a result, team members can often do little to improve their job satisfaction.

*Charismatic Leadership*

Charismatic leadership resembles transformational leadership: both types of leaders inspire and motivate their team members. The difference lies in their intent. Transformational leaders want to transform their teams and organizations, while leaders who rely on charisma often focus on themselves and their own ambitions, and they may not want to change anything.

Ronald Riggio (2004) "essentially very skilled communicators, individuals who are both verbally eloquent, but also able to communicate to followers on a deep, emotional level". Charismatic leaders are often identified in times of crisis and exhibit exceptional devotion to and expertise in their fields. They are often people with a clear vision in business or politics and the ability to engage with a large audience. Charismatic leaders might believe that they can do no wrong, even when others warn them about the path that they're on.

Some example of the World Leader with charismatic leadership such Teddy Roosevelt and John Kennedy, Reagan which recognized as one of the most charismatic American presidents of the 20th century and Winston Leonard Spencer-Churchill was born in 1874. Although he is best known for being the prime minister of England during World War ll, he honed his communication skills as a war correspondent in World War l and crafted legislation for Parliament as a member. He was a powerful orator who used radio speeches to buoy the British people's resilience during Germany's World War II bombing of England.

**Conceptual framework**

This study will emphasize explore in an investigation the relationship between leadership and intention to stay. Thus, this relationship can be hypothesized as:

H1: Leadership has a significant and direct effect on intention to stay.

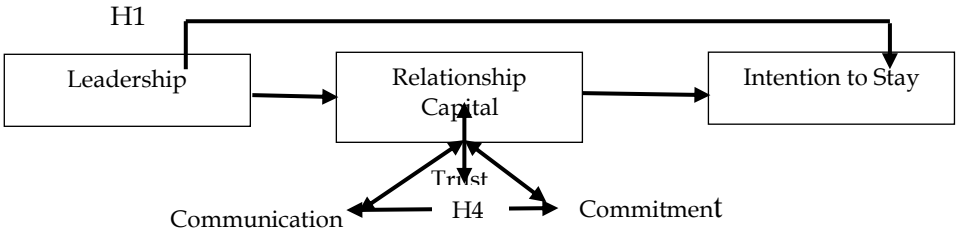


Figure 3: *Conceptual Framework*

**Research methodology**

*Data Collection*

This study the secondary data will be collected from sources such as yearly unit operational report, administrative report and disciplinary report from Malaysian Armed Forces Resources Department at Military Headquarters (MINDEF) located in Kuala Lumpur, Peninsula Malaysia. Apart from that, primary data collection will be through questionnaires.

*Sample Size*

The respondents of this study the leaders and members of military located in Peninsula Malaysia particularly in Perak and Johor. Most of the huge Military Camp or Base are in these states. The respondents also will be targeted Military Camp or Base in Sabah, East Malaysia. Lastly, the more respondents will be targeted in Labuan, Federal Territories Malaysia. Thus, the sample size of this study is 500 as suggested by Krejcie and Morgan's (1970). However, to increase the respondent's rate for this study, 600 questionnaires will be distributed.

*Data Analysis*

This study will be utilised by the means of Statistical Package for Social Science (SPSS) to analyse the relationship between leadership, relationship capital (Communication, Trust and Commitment) and intention to stay. The statistical analysis will include descriptive analysis for summarizing the data collected, ANOVA analysis for measurement of between group's variance, Bivarate Pearson Correlation analysis for hypothesis testing and reliability analysis to test the correlation of items.

**Significant of the study**

*Practical Contribution*

`In Malaysia, it is also a common issue for many organizations to face the of high employee turnover. However, there are not many researchers on the relationship between the factors that influence relationship capital and intention to stay. This study will focus on the multiple regressions between factors that influence relationship capital and intention to stay and attempt to find out as to whether the relationship capital model holds true for Military organization.

*Theoretical Contribution*

Firstly, it can be used as a reference to the human resources management, human capital designing, human capital enrichment and enlargement for Malaysia employers. On other hand, in order to improve the employee's relationship capital and as well as reduces the employee turnover rate, it is important to fulfil communication, trust and commitment (relation capital) for each employee.

**Conclusion and discussion**

This is a conceptual paper as explained in the early in the study, only to emphasize in an investigation the relationship between leadership and intention to stay. Based on previous studies indicated that leadership style is a positive predictor intention to stay. The findings led me to draw conclusion about the relationship between leadership and intention to stay. Leadership may make employees either stay or leave the organization hence it becomes one of factor that influence employee retention. The expected results of this study leadership are positively and direct effect on intention to stay.

This study concluded that there is a significant relationship between leadership and employee intention to stay in Malaysian Armed Forces (MAF). These outcomes are consistent referred to previous study for difference industry such as by Ng'ethe, Namusonge and Iravo (2012); Izidor and Iheriohanma

(2015), Khalid, Pahi and Ahmed (2016); Kelvin (2018). Their findings indicated that there is a significant relationship between leadership and intention to stay.

In reflecting the transformational leadership theory individuals who are offered leadership and managerial role must ensure that they let employees be part and parcel of their leadership process. This means that employees must be allowed to give ideas on how an organisation should achieve organisational goals. This is one of the best ways to win their heart and make them loyal to the company. This goes hand in hand with having an effective communication system that allows two-way flow of information, managers should not only focus on giving information but also, they should seek feedback from their subordinates.

Finally, the results of this study might be applied to increase intention to stay, thus conserving the Malaysian Armed Forces resources in protecting the country sovereignty and can be applied to others organization.

**Recommendations for future study**

Based on the literature and conceptual framework the following recommendations for future study are below;

*Recommendation 1*: Further research should be conducted to test the relationship between leadership and intention to stay.

*Recommendation 2*: Further research should be conducted to test the relationship between relationship capital and intention to stay.

*Recommendation 3*: Further research should be conducted to test if relationship capital mediate the relationship between leadership and intention to stay.

*Recommendation 4*: Further research should be conducted to test the effects of cyclical interrelation among communication, trust and commitment on intention to stay.

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# Factors affecting consumer behavior in rice purchase decisions in city of Makassar

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**Keywords**
Rice, Consumer Behavior, Purchasing Decisions

**Abstract**

*Rice is one of the important commodities for the Indonesian people, because it is a basic necessity for daily consumption and most of the population works in the agricultural sector, especially food crops. So in terms of making rice purchasing decisions by consumers, it is interesting to know the factors that influence the decision. Since people in Indonesia have a social, cultural, psychological and personality diversity, including the consumer community in the city of Makassar. The research objective is to examine the factors that influence consumer behavior in deciding to buy rice. The design of this study is analytic design, carried out based on ex post facto, which is a form of research that analyzes and evaluates factual events that occur in the field. This research was conducted for six months using a survey method. The Research locus is a housewife or the decision maker in a household with a sample of 115 that taken by simple random sampling method. To ascertain the ability of the research indicators, a questionnaire test was conducted with a test of convergent validity and discriminant validity. While the reliability test uses the Cronbach alpha method. Descriptive method and Structural Equation Modeling (SEM) analysis with Smart-PLS software were applied as analytical method on this research . The results of this study show that consumers in Makassar in making decisions to buy rice are influenced by social, cultural and psychological factors neither personality as a behavioral factor that does not affect consumers in making decisions to buy rice in Makassar City.*

# Digital labour platform of management control, and organisational change: French SMEs and VSEs

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**Keywords**
Management control – Innovation – digital labour platforms/the gig economy – Business Model – Digital Transformation – the Digital Economy

**Abstract**

*In the face of organisational digital transformation and changing business models, the question that arises is, "What does this mean for management control?" Although it has not undergone any significant changes over the past few years, it is now apparent that the profession must come to grips with the ever-growing digitisation and automation of accountancy and corporate finance. Already, the term "Uberisation" or "Digital labour Platform "has been regularly bandied about in the auditing and accounting professions. But does this change, which has been buoyed by the prevalence of digital labour platforms, offer an opportunity for management controllership? In other words, in the wake of the outsourcing of chartered accountant services, should we now expect the development of the outsourcing of management control functions? In addressing these issues, we shall begin by defining the different concepts behind management control and Uberisation (especially digital labour platforms) and then we shall consider how these developments might be aligned with the needs of French SMEs or VSEs. The final question that remains is: Should management control begin preparing to reinvent itself, unless it wants to see itself fully "Uberised"?*

# Managerial compared governance: A work in progress study

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**Keywords**
Governance, Board of Administrators, Administrators

**Abstract**

*Purpose: The project "industrial compared governance " in the field of finance will highlight correspondences existing between large companies (we can consider the Euronext companies in Europe and the Standard & Poors' in America) and administrators of these companies.*

*Design: This research task works on a panel of 500 companies (selected on criteria to be determined in a theoretical analysis) and their administrators (selected on criteria to be determined in a theoretical analysis). The administrators are representing a panel of around 6000 people.*

*Methodology: Criteria chosen are the following: personal information, professional information, functions within the Board of Directors, career of administrators, education type of attended University, elective function, main functions.*

*Results and conclusion: to come*

*Modern capitalism is organized like a gigantic limited company (Metz, Hirata, Verma, Zencey, 2017). The economic capacity is held by shareholders (several hundreds of millions) and administrators setting their expectations on profitability and principles of governance.*

## 1. Introduction: definition of the project

Our project "industrial compared governance " in the field of finance seeks to highlight the correspondences existing between

- large companies (we can consider the Euronext companies in Europe and the Standard & Poors' in America)
- Administrators of these companies.

This research task will consider a panel of

- 500 companies (selected on criteria to be determined in a theoretical analysis)
- Administrators (selected on criteria to be determined in a theoretical analysis).

## 2. Literature review: constraints of the gouvernance

According to Thaddeus 2017 the company governance is the responsibility for the Board of Directors. It gives some influence on board members. It also rests on financial information transparency, the effective management risk, the strict ethics rules, the internal audit system, the independent system of control, independent and qualified audits Shimony, Shoham (2018). We better understand the impact of administrators on company management and their influence in the governance application.

The company governance feeds a growing number of researches based on integrity, independence, management (Total, Wyeth, Lafarge, Delhaize group). The project concentrates the field of research on specific characteristics of administrators and their type of management. This work brings a new breath in a rather preserving context.

In other words, the governance implies a large effort of internal and external communication, a strong ethics, a good capacity of financial analysis and a good impartiality. We continue the theoretical analysis, under the angle of administrators.

## 3. Methodology

Four hundred students from the second semester of the Management School Leonard de Vinci (Ecole de Management Leonard de Vinci, EMLV) oversee collecting information

• *about administrators of one company*. Each company are selected

in France: the 40 highest sales companies of this country.

in America 360 of the 500 largest US companies selected in the Fortune 500 listing.

For each company they are required to obtain, from each member of the Board of Administrators, also called Board of Directors, the following information:

• *about Administrators*: company, Director's name, first name, sex, age, nationality,

• *about present functions*: company, functions (founder, chairman of the board, CEO, Board of Trustees President, vice President, managing Director, Executive Committee, Administrator),

Company's status in the Board of Directors (Chairman of the Board, Strategic Committee, Vice President, Board of Trustees, Nomination Committee, Wage Committee, Administrator, observer), number of memberships in other Board of Directors.

• *about initial activities*: Founder, Engineer, Business, Lawyer, Professor, Member of Government, elected in a town, Elected in the county, National Poll.

• *about other companies*, in which Directors are members of the Board of Directors: Chairman of the Board, Strategic Committee, Vice President, Board of Trustees, Nomination Committee, Wage Committee, Administrator, observer and in which companies.

• *about other jobs in the past*: six companies can be selected with jobs such as founder, Manager, Chairman of the board, Directory Chairman, Vice President, Managing Director.

The students have information about these items in the tableau called "Governaid". They must fill the tableau called "Governance board".

**4 Findings and discussion: theoretical analysis**

The governance theoretical analysis points various types of organization, specific qualities of the Board of Directors, measurements of performances, duties of management members, types of relation with the company. We start the analysis by good practices.

*4.1. Good practices within the board of directors*

Metz, Verma, Zencey – (2017) and Drake, (2005) highlight various types of organizations or institutions and stress the importance of safety requirements such as equitable distribution of resources. (Singh, Misra 2019, Alstom, 2019) The Delhaize group tends to define criteria such as limitations of Board of Directors participation number, time devoted to company (Delhaize group 2018; Lafarge Governance 2019).

| Practice | Comments | References |
|---|---|---|
| Equitable distribution of resources | The principle of fair resources allowance interests the shareholders. | Alstom, 2019). |
| Limitation Directions numbers. | The administrators present in a number significant of Boards of Directors defend their positions with difficulty. | Delhaize group, 2018; Lafarge Gouvernance, 2019 |
| Time to devote. | A good management implies an examination of accounts. | Delhaize group, 2018; Lafarge Governance, 2019 |

Table 1: good practices of the Board of directors.

The table n°1 of good practices underlines more justice in allowances distribution, a better expected fidelity from administrators, some time to examine accounts.

These Administrators good practices lead us to examine members of the Boards of Directors qualities.

***4.2. Definition of administrator personal criteria***

The research of Scharding T. (2015) contributes on following criteria: honesty, competence, effectiveness, confidentiality, regulation codes respect. Whereas Issa A. (2017) and Domtar Company (2018) prefer to underline qualities such as diversity of careers, integrity, independence, leadership, good judgement, significant implication, limitation of Board participation number.

Within this framework, it is interesting to note that a pharmaceutical company (Wyeth, 2019) posts criteria of selection close enough: integrity, maturity, independence, experiment, scientific experiment, experiment of management and industry (Wyeth 2019). The points of congruence emphasize great quality personalities as shown on table n°2.

| Qualities | Comment | References |
|---|---|---|
| Honesty, integrity | Expected natural qualities. | Metz 2015,<br>Wyeth company 2018 |
| Competence | Competences help better management. A performance choice is advisable. | Meghani, Tripathi, Mahajan.- 2014 |

| | | |
|---|---|---|
| Effectiveness | Id. | Kolb, Moriarty 2011 |
| Confidentiality | Secrecy protects from competitive attacks. | Metz, Hirata, Verma, Zencey 2017 |
| Respect of the codes of regulation | Regulation standards and shareholders respect are privileged. | Sandberg 2013 |
| Independence | Independence supports an honest decision-making. | Wyeth Company 2019. |
| Maturity | Professional maturity helps to decide honestly. | Wyeth Company 2019 |

Table n°2: personal qualities of the administrators.

Table n°2 shows personal strong qualities of administrators. It illustrates their industrial maturity and independence which enables them to measure an activity, without influence and objectivity. It is advisable, then, to understand expectations, on their missions, as members of the Board of Directors.

***4.3. Definition of administrator's management criteria***

Researches of Corporate Governance Guidelines (2018) measure, on a more productive level, Administrators performances on following criteria:

*4.3.1. the judgement*
*4.3.2. the initiative*
*4.3.3. the receptivity*
*4.3.4 the operational excellence*

| Management criteria | Explanation | References |
|---|---|---|
| Judgement | Control of finances, definition of objectives. | Corporate Governance Guidelines (2018) |
| the initiative | proactivity, capacity to deliver opinions, implication. | Corporate Governance Guidelines (2018) |
| receptivity | capacity to identify management deficiencies, management answers. | Corporate Governance Guidelines (2018) |
| operational excellence | periodic review of information, in order to work and allow discussion. | Corporate Governance Guidelines (2018) |

Table n°3: expected Administrators criteria of management.

This table highlights complementary qualities associating a culture of results, an aptitude to present opinions, a capacity to detect weaknesses and a good communication. Administrators are also managers and must be able to control their company, as follows.

***4.4. Expectations of board of directors***

Members of the Board of directors are invited to manage administrative duties, control and safety rules (Sinnicks 2014, Capital Sequana, 2018) and absence of material relations with their company (Total, 2019). The administrators owe to be independent of their business management. We study, then, Administrators characteristics criteria.

***4.5. Characteristic board of directors' members***

The detailed analysis of Board of Directors members from 8 companies (Mittal Steel, Crédit Agricole, Essilor, STMicroelectronics, Accor, Cape Gemini, Liquid Air, Danone), part of French financial reference CAC 40 raised criteria likely to constitute a good base of work. These selected criteria by a systematic analysis will be adjusted by Delphi method with experts (a number and quality to be determined). They present the following criteria before validation.

*Personal information, professional information, functions within the Board, career of administrators, education, type of University attended, elective function, main functions.*

These criteria are detailed and presented in the methodology part and under a table form in the Appendix 1 entitled "preparatory document" or "governaid".

During the discussions with the experts, we will try to answer to following questions:

4.5.1. utility of administrators known as independent (of the company).

4.5.2. company with only one dual Board of Directors vs. Governance (directory + Board of Trustees).

4.5.3. representatives of the Nation in public or semi-public companies.
4.5.4. paid Administrators (impact on the wage policy).

***4.6. Companies criteria selected for analysis***

The detailed analysis of company criteria selection considers several criteria such as: sales, profit, number of employees, social policy, number of administrators, % of administrators belonging to other Boards of directors, environmental policy, presence in how much country, etc… These criteria to be selected in a theoretical analysis will have to be validated by discussions with 10 administrators of Boards of directors.

5. **Organization**

The annual project plan is the following:
4.1. To supplement our theoretical work highlighting variables interesting by the end of September 2019,
4.2. To retain the possible variables (December 2019)
4.3. To present the assumptions (January 2020)
4.4. To define and seize the data (February 2020)
4.5. To test elements available (May 2020)
4.6. Presentation of results (July 2020).

This research started from a factor analysis led by Pr Abdi of the University of Texas (Dallas) on multivariate statistical analyses (analyzes simple and multiple correspondences, regression analysis, multiple factor analysis).

6. **Directions for future research**

Future researches will spread this analysis to most of Western and Asian Countries. We are look for partnership all over the world to develop a larger point of view. As an objective, we are trying to open researches to partnership in these countries, in order to give some hints to administrators all over the world. Then we shall be able to compare administrators between latin asian and anglo saxon type of administration.

Appendix 1: preparatory document.

Criteria raised for the administrators within the framework of the study on " Industrial compared governance ".

| Items | Company | Column | Indicates the name of the company which was allotted to you. |
|---|---|---|---|
| | Name | C | Name |
| Identification | First name | D | Simplify the first name if needed. |
| | Nationality | | Nationality: it is necessary to look for, it is not always easy… You can operate sometimes by deduction, within sight of the followed studies and of the places of residence. |
| | Sex | E | Attention with the first names which finishes with an "a" are not necessarily from female sex. Identify the person, their type and their name on Google and ask the corresponding image. |
| | Age | F | Not always obvious to find. It is necessary to look for in company's information, you may find this information if you look for seriously. |
| | Nationality | G | Nationality: it is necessary to look for seriously and it is not always easy to find. You can operate sometimes by deduction, within sight of the followed studies and of the places of residence. |
| Company | Several shares | J | Not always obvious to find. It is necessary to look for in the documents of the company. |
| | Since | K | Since how long the person is member of the board of directors, for how many years. Often not indicated. But by deduction, we can succeed. |
| | Company | O | Name of the company constituting the principal activity of the Administrator. |
| | Creator of company | P | The biography may indicate if the individual is a creator of company. If it is not indicated, it is advisable to deduce through its activities if this one has created or not companies. |
| | Chairman of the board… | Q | … or "Président du Conseil d'Administration" (in French). |

| | | | |
|---|---|---|---|
| Functions | Chief Executive Officer (CEO) | R | Or Président Directeur Général (in French). |
| | President of the Directory | S | Or President du Directoire (in French). |
| | Vice-president | T | Vice-president (in French). |
| | Managing Director | U | Or Directeur Général (in French). |
| | Executive committee | V | Or Membre du Comité de Direction (in French). |
| | Adinistrateurs | W | |
| Statute | Chairman of the Board | X | or "Président du Conseil d'Administration" (in French). |
| | Strategic committee | Y | Or membre du Comité Stratégique (in French). |
| | Audi Committee | Z | Or membre du Comité d'Audit (in French). |
| | Vice President | AB | Vice President |
| | Board of trustees | AC | Comité directeur |
| | Committee Nomination | AD | Comité des nominations |
| | Wage Committee | AE | Comité des remunerations |
| | Administrator | AF | Administrateurr |
| | Independent administrator | AG | Administrateur Independant |
| | Observer | AH | Observateur |
| | Administrator other committees (several) | | Number of other Boards of directors in which the member takes part. |
| Formation | University | HAVE | Université |
| | Diploma | WITH | Diplome |
| | Regional classification (Europe Americas Asia Peaceful | AV | Regional classification (Europe Americas Asia Peaceful) to find in the joined list of the 2007 Shangai University ranking. |
| | BA | AW | Licence (3 years) |
| | Master | AX | Master (5 years) |
| | PhD | AY | Doctorat (8 years) |
| | MBA | BA | MBA |
| | Signal University | BB | University of prestige (gathers Harvard Stanford Northwestern Wharton, Polytechnique, ENA, HEC, Essec, Cambridge, Oxford). |
| Activity | Createurs | BC | Founders. |
| | Engineer | Data base | Engineers according to the type of studies |
| | Business | BE | Business according to activities. We can find an engineer in the classification business within sight from revious experience. |
| | Lawyer | BF | Lawyer (can also be in other classifications: business, professor…). |
| | Professor | BG | Professor. |
| | Former member government | BH | Former member of governments. |
| | HF: civil servant (Ambassador) | BI | Senior official (ex: Ambassador) |
| | Mayor | BN | Local councillor (Mayor) |
| | Departmental elected official | BC | Departmental or regional elected official (General, regional county) |
| | National Elected official | LP | National Elected official (Congress or Senator) |
| Statute in another company | Manager | BY | Manager |
| | Chairman of the board another company | BZ | Chairman of the board another company |
| | Chief Executive Officer (CEO) another company | CA | Chief Executive Officer (CEO) another company |
| | President of the different Directory company | CB | President of the Directory |
| | Different vice-president company | DC | Different vice-president company |
| | Different Managing Director company | CD | Managing Director different company |
| | Different Strategic Committee company | EC | Strategic committee another company |
| | To that different Committee company | CF | Committee To that the other company |
| | Different board of | CK | Board of trustees another company |

| | | | |
|---|---|---|---|
| | trustee's company | | |
| | | | |
| | Different Committee nomination company | CL | Committee of the nominations other company |
| | Different Wage Committee company | CM | Committee of remunerations other company |
| | Different administrator company | CN | Different administrator company |
| | Independent administrator another company | DC | Independent administrator another company |
| | To observe | CP | Observer |
| | Company 1 | CS | Company 1 |
| | Company 2 | CT | Company 2 |
| | Company 3 | CU | Company 3 |
| | Company 4 | CV | Company 4 |
| | Company 5<br>Company 6 | CW<br>CX | Company 5<br>Company 6 |
| Past jobs<br><br>Choose largest responsibilities or largest companies. | Company 1 | DN | Company 1 |
| | Manager | C | Manager |
| | Chairman of the board | DP | Chairman of the board |
| | CEO | DG | CEO |
| | President of the Directory | DR. | President of the Directory |
| | Vice President | DS | Vice President |
| | Managing Director | DT | Managing Director |
| | Company 2 | | Company 2 |
| | Manager | FD | Manager |
| | Chairman of the board | DW | Chairman of the board |
| | CEO | DX | CEO |
| | President of the Directory | DY | President of the Directory |
| | Vice President | DZ | Vice President |
| | Managing Director | EA | Managing Director |
| | Company 3 | EB | Company 3 |
| | Manager | EC. | Manager |
| | Chairman of the board | ED | Chairman of the board |
| | CEO | EE | CEO |
| | President of the Directory | EF | President of the Directory |
| | Vice President | EG | Vice President |
| | Managing Director | EH | Managing Director |
| | Company 4 | EJ | Company 3 |
| | Manager | EK | Manager |
| | Chairman of the board | EL | Chairman of the board |
| | CEO | EM | CEO |
| | President of the Directory | IN | President of the Directory |
| | Vice President | EO | Vice President |
| | Managing Director | EP | Managing Director |

| | | | |
|---|---|---|---|
| | Administrateur autre société | CN | Administrateur autre société |
| | Administrateur indépendant autre société | CC | Administrateur indépendant autre société |
| | Observer | CP | Observateur |
| | Société 1 | CS | Société 1 |
| | Société 2 | CT | Société 2 |
| | Société 3 | CU | Société 3 |
| | Société 4 | CV | Société 4 |
| | Société 5<br>Société 6 | CW<br>CX | Société 5<br>Société 6 |

| | | | |
|---|---|---|---|
| Resume<br><br>Choose among responsabilities the most prominent and the largest companies | Société 1 | DN | Société 1 |
| | Gérant | DO | Gérant |
| | Chairman of the board | DP | Chairman of the board |
| | CEO | DG | CEO |
| | President du Directoire | DR | President du Directoire |
| | Vice Président | DS | Vice Président |
| | Managing Director | DT | Managing Director |
| | Société 2 | DU | Société 2 |
| | Gérant | DV | Gérant |
| | Chairman of the board | DW | Chairman of the board |
| | CEO | DX | CEO |
| | President du Directoire | DY | President du Directoire |
| | Vice Président | DZ | Vice Président |
| | Managing Director | EA | Managing Director |
| | Société 3 | EB | Société 3 |
| | Gérant | EC | Gérant |
| | Chairman of the board | ED | Chairman of the board |
| | CEO | EE | CEO |
| | President du Directoire | EF | President du Directoire |
| | Vice Président | EG | Vice Président |
| | Managing Director | EH | Managing Director |
| | Société 4 | EJ | Société 3 |
| | Gérant | EK | Gérant |
| | Chairman of the board | EL | Chairman of the board |
| | CEO | EM | CEO |
| | President du Directoire | EN | President du Directoire |
| | Vice Président | EO | Vice Président |
| | Managing Director | EP | Managing Director |
| | | | |

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# Indian banks reconstruct themselves!

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**Keywords**
Indian Banks, wilful disruption, bank clusters

**Abstract**

*Purpose of the research: Riding on the back of internet reach and mobile spread the Indian banks have been deconstructing and reconstructing their business models with focus on innovations. The paper tries to understand firstly how banks respond to the digital proliferation and secondly what is strategy and direction of banks in coming years.*

*Design/methodology: The research model followed by the paper is qualitative. The researchers approached senior management members of the banks in India and carried out semi-structured interviews. They met both private and public sector bank employees. Totally 16 banks were approached with 25 interviews with technology and business area personnel.*

*Results/findings: The industry has been struggling with keen competition from newer entrants besides fighting the profit pressures resulting from non-performing assets. Based on the data published by the central bank clusters were visualised and then attempt is made to exhibit wilful disruption that the banks have engaged into finally reconstructing themselves revising their revenue streams and the changing cost structures through technological implementations.*

*Practical implications and Conclusions: The consumers are clearly adopting to the online transactions using internet and mobile. The banks are going slow on adding branches, also going more with white label ATMs. The automation in the back office as well front-end customer services seems to be the focus. At the least the private banks are reconstructing themselves with new age automation while some of the public sector banks as well as new age banks such as payment banks are going asset light.*

## Introduction

Two factors spearheaded mobile revolution in India, the increased manufacturing base of mobile phones and the augmented reach of telecom. There are at least 270 mobile and accessories factories currently in India producing all types of phones raging from low price feature phones to high priced big brand items. The manufactures are making more and more smartphones and at lower price points.

The telecom spread has been a story in India. While the telecom businesses are going through churn of acquisitions and mergers over past decade their reach to the nooks and corners of India has been on the rise. Urban India with an estimated population of 455 million already has 295 million using the internet. Rural India, with an estimated population of 918 million as per 2011 census, has 186 million internet users and that number is growing rapidly. With the consolidation happening in the telecom sector of India the reach will be better resulting in the prediction of 1.24 billion subscriber base by 2024.

Therefore, the mobile users' population has grown quickly from 500+ million users in 2013 to 800+ million users in 2019. Cisco expects that that the smartphone users in India will swell to 900+ million by 2022. Riding on the back of mobile and internet penetration the banks in India have been quietly transforming themselves, introducing more and more digital services. The government of India initiatives to make their services digital coupled with incentives offered to users for using digital payments has been transforming landscape quicker than one can imagine.

## Literature Review

The banking sector in India can be categorised the four segments, the public sector banks, the private sector banks, the payment banks and small finance banks, leaving out micro-finance which is still not as regulated as the others. The private sector banks can be further classified as the banks with Indian

origin and the international banks with foreign parent. All these categories demonstrate different levels of consumer orientation and the automation. Generally, the private sector banks have been ahead in performance and have made good progress (Malyadri and Srisisha, 2015). There has been increasing awareness in the banking sector about requirement of innovative approach and restructuring businesses. Indian banks have been making attempt to reorganize themselves focusing on innovation. Yoo *etl* (2012) offer some insight into such organization in the digital world bringing out concepts of combinational innovation and distributed innovation.

There is a lot of work happening currently in the financial world directed towards improving customer experience especially in the internet and mobile applications. Banks continue to collect feedback on their products and services. Such ongoing efforts and improvement need to be supported by structured process geared towards bringing in innovation (Nylen and Holmstrom, 2014). Five areas relating to user and the processes have been proposed with the framework as a tool. Interestingly the digitization has been also proposed as a catalyst for innovation (Bleicher and Stanley, 2016). Such theorization almost sets aside the notion that innovation must be prior to digitization.

In India the bank outreach has increased substantially over 1996-2015 period (Kumar *etl*, 2015). As of March 2018, the total number of ATMs in India was 222,066. This translates into only 17 ATMs per 100,000 people. Although over 24,460 ATMs were added per annum between 2012 and 2016, only 2,429 ATMs have been added since December 2016 as reported by Livemint (2018)

**Research question and methodology**

Having realized that in India there was a big push for financial inclusion we decided to explore actual status of Indian banking industry. Following research questions were put forward:

How do banks respond to the digital proliferation?

What is strategy and direction of banks in coming years?

Considering that both questions were more along the lines of long-term lookout and the direction that banks were to take we decided to follow qualitative approach research model. Under such model researchers approached senior management members of the banks in India and carried out semi-structured interviews. Researchers met both private and public sector bank employees. Totally 16 banks were approached with 25 interviews with technology and business area personnel.

**Research findings**

During the interviews many interesting banking features and the dimensions emerged. It was clear that banks operating in India follow different paths. The foreign banks, private banks and public sectors banks all were at different stages in the way they viewed digital world. Most public sector banks had fewer initiatives on that front compared to private sectors banks who focussed much more on digital push. Here are some of the findings:

Some banks have structured efforts on automation creating Innovation and Digital cells

In most banks Innovation and Digital cells report to different functions. Innovation cells report to business function while Digital may or may or may not report to Technology function, depending on whether Digital is interpreted as technical or business function.

Private sector banks are generally ahead on automation efforts.

Of the public sector banks two of the large public sector banks are leading the digital and automation efforts.

Some of the older public sector banks are making little headway towards automation.

Declared Non-Performing Assets (NPAs) of banks have generally risen over past three years.

Many private banks are making efforts to augment their revenue by introducing more products and services such as insurance.

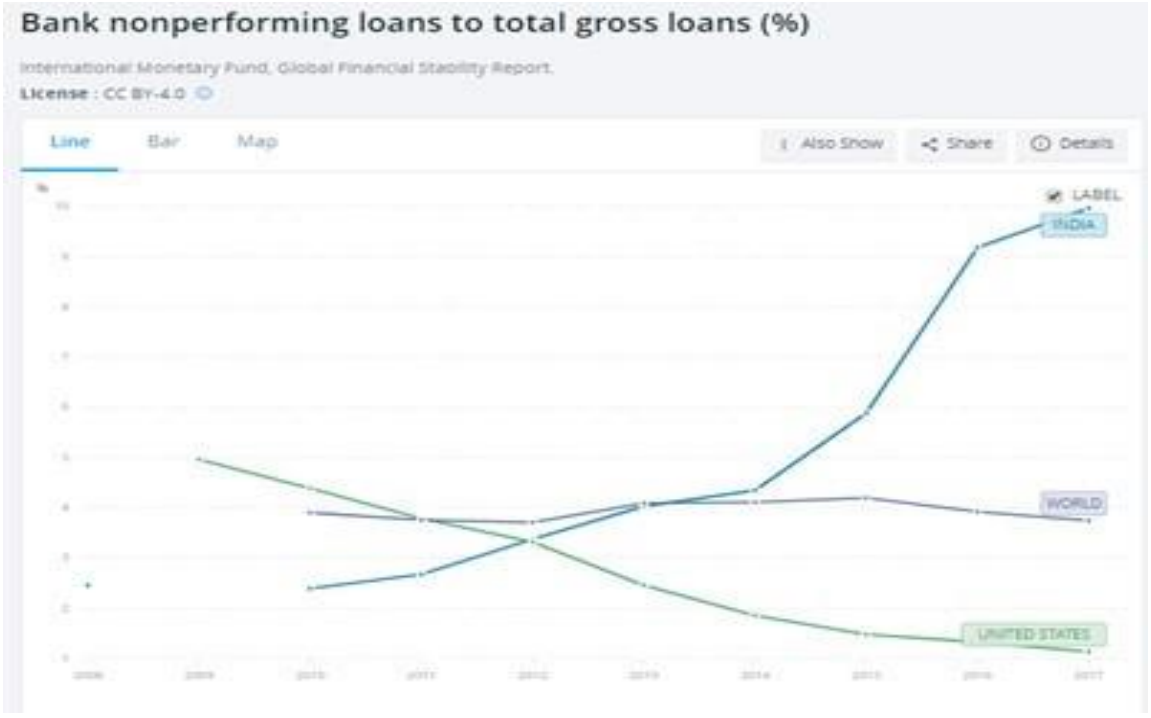
Many banks have pushed hard on newer businesses such as selling electronic toll collection cards called FASTag, this improving revenue stream.

**Discussion**

While going ahead with automation many banks came up with interesting structures, with some creating completely new ways of handing innovation and digital initiatives (Vaidya and Roy, 2018). As a part of such initiative the banks have embarked on newer ways of supporting revenue stream. Many have some sort of e-commerce portals selling products such as insurance and FASTag, at the back end they

have tied up with relevant agencies. ICICI bank has reported to have sold over 1 million FASTag cards having tied up with more than 10000 fleet owners (ICICI, 2018). There has been a major push on debit and credit cards and the transactions that they have been handling. All such efforts help to tide over the NPAs that pull down their bottom line. Here is a picture of NPAs shown in figure 1:

Figure 1: Banks NPAs (Source: International Monetary Fund)




In the current situation there are multiple players in the banking sector in India

Private sector banks

Public sector banks

Small finance banks

Payment banks

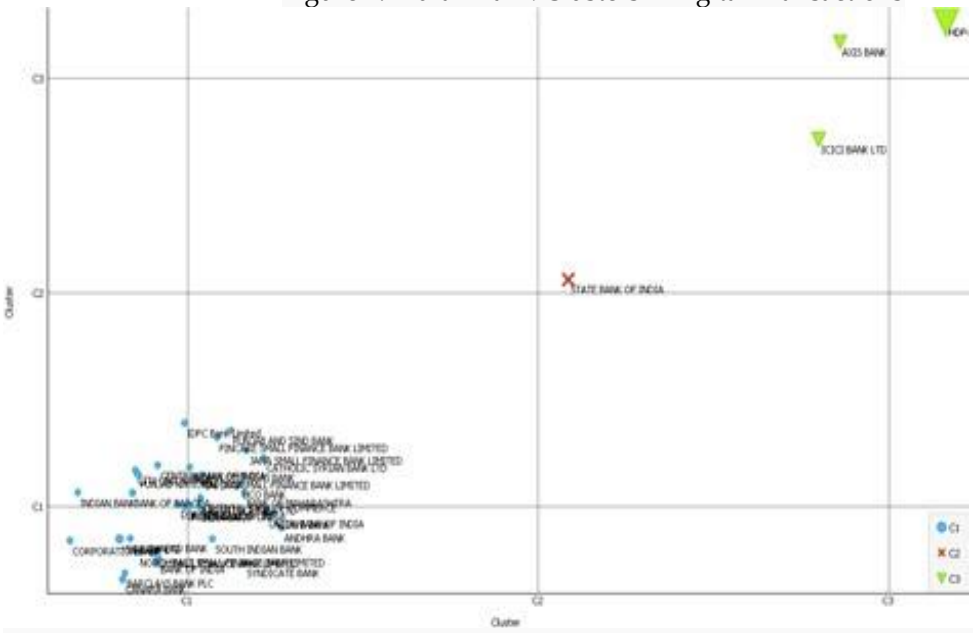
Booming payment industry with entries of Google, Amazon and Facebook besides local companies

Considering such NPA scenario and keen competition in the banking sector in India it is no surprise that the banks are making all efforts to rationalise their cost structures. If we look at reports from other countries, BBC reports that during 2015-2018 period banks have closed 2900 branches. As an instance RBS is reported closing 350 of its own branches, as well as 638 NatWest branches and 35 Ulster Bank branches (BBC, 2018). In US the big banks have been closing branches saying it's unviable to run braches as more and more customers are tuning to digital media (Shevlin, 2019). Not to be left behind Indian public sector banks are expected to close 69 international branches for the same reason (PTI, 2019). It is also clear that customers are using more and more mobile and internet combination for transactions. HDFC Bank has reported from customer-initiated transactions using internet and mobile have gone up to 85% in 2018 compared to 3% in 2008 (HDFC, 2019).

The walk-in customers as well as visits to ATMs have reduced in urban areas on account of digital transactions while the rural area people still work mainly on cash. 50% to 75% of the customers from Asia-Pacific (APAC) markets use online/internet channels at least weekly, and a third use mobile channels (RBI, 2016) also the banks have been developing new branchless technology-based approaches to serve underserved customers. Indian banks are going slow on opening new branches while focusing on digital banking. Growth in (the number of) branches was flat in urban areas (in financial year 2018) after witnessing 10% year-on-year growth in fiscal 2017, while rural areas saw a slight pickup after a decline of 3.5% in fiscal 2017 (Anand, 2019). Using data published by Reserve Bank of India (India's central bank) we

clustered banks based on the digital transactions, using machine learning unsupervised algorithms. The outcome was three clusters as shown in figure 2.

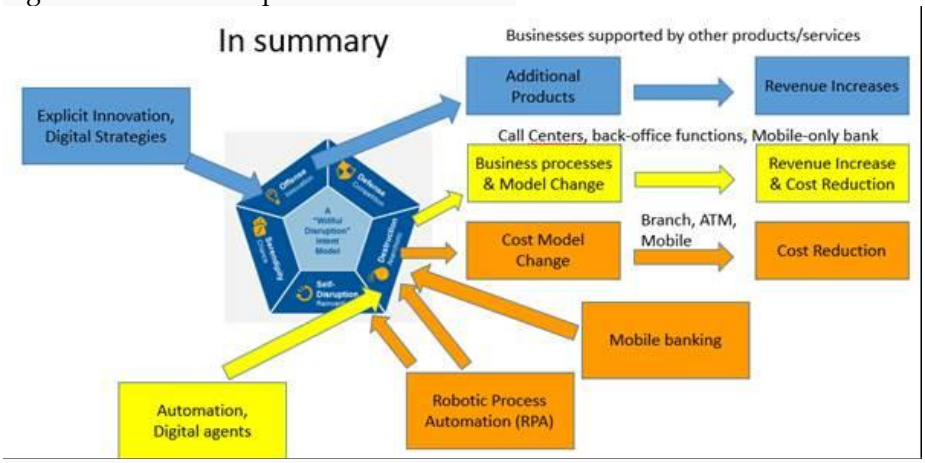
Figure 2: Indian Bank Clusters – Digital Transactions




As discussed earlier three private banks seem to be doing similar in digital transactions, State Bank of India (SBI) appear stand alone on basis of large amount transactions and rest form a common cluster.

Gartner has proposed a 'wilful disruptive' intent model explaining five strategic directions that businesses undertake based on intents (Smith, 2018). Analysing the banks in India using same model produced this picture, shown in figure 3 here:

Figure 3: Wilful Disruption of Indian Banks




The banks, mainly private banks, are on offensive strategy riding on the back of innovations and digital initiatives are working on cost models as well as new revenue streams.

**Conclusion**

The evolving direction and strategy of banking sector resembles deconstruct and reconstruct principles. The consumers are clearly adopting to the online transactions using internet and mobile. The banks are going slow on adding branches, also going more with white label ATMs. The automation in the back office as well front-end customer services seems to be the focus. Robotic process automation at the back end and the conversational chatbots, the digital agents, the front-end robots and the self-service branches seem to be the move forward. At the least, the private banks are reconstructing themselves with

new age automation while some of the public sector banks as well as new age banks such as payment banks are going asset light.

**Limitations and Directions for future research**

The banking in India has been transforming itself at a rapid pace, especially with entry of technology giants in payment space and the Post Bank as payment bank one can expect further changes. The public sector banks have been merging to create stronger entities, further other Non-Banking Financial Companies (NBFCs) are also making forays in banking. One needs to keep an eye by continuously examining the changing scenario over next few years. The research presented here is at a point of time when one anticipates further evolution. To that extent it is limited to current players in banking. Going further it will be prudent to include others also in the research.

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# Examining efficiency of ports operated by public listed companies in Malaysia

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**Keywords**
Port Operation Management, Profit Efficiency, Revenue Efficiency, Cost Efficiency and DEA

**Abstract**

*Port efficiency represents how well port management is in the handling of their resources. So far, issues pertaining to the determining the most appropriate input variables and output variables are relatively inconsistent in the body of knowledge. It is depending on several dynamic characteristics from management and its operations. Thus, the aim of this paper is to fulfil the gap by introducing most appropriate inputs - outputs analysis by using Data Envelopment Analysis (DEA). This study utilised (4) port operating companies which are public listed companies using data stretching for eight-year long period from 2011-2018. The general findings suggest that the efficiency of most ports in Malaysia shows the performance in terms of efficiency level in cost, revenue and profit was relatively low due to possible factors such as the size of ports, productivity and cost efficiency.*

## 1.0 Introduction

In a recent decade, efficiency has becoming one of the most crucial indicators of firm performance not only of private companies but also of public entities. Due to the severe competitive environment in the world economy especially after globalization from 1980's, private companies have had to seek their sources of profits from the optimization of operation in the supply side as well as from the expansion or differentiation of markets in the demand side. The continual trends of privatization, hence the introduction of the market competition system, elaborated by central/local governments, have urged the public corporations to strive for managerial reformation to cope with the imminent competition with the private sectors.

Efficiency is a main issue in contemporary port economics, on grounds of port's strategic position in connecting inside the country. Port efficiency is highly correlated with handling cost. (Cullinane et al, 2002). Countries with inefficient seaports have higher handling costs. The clear negative relationship shows that countries where ports are considered the most efficient are at the same time the ones whose ports charge the least for their services. (Clark et al., 2004).

Competition among port operators had been very intense in the last few decades mainly driven by such factors as increases in globalization trends, containerisation, market integration, and global reallocation of capital and labour forces (Dang & Yeo, 2017). Ports had been competing against each other to attract shipping lines to call at their ports. To attract these main line operators, a lot of investments has been put into the acquisition of mega-size port equipment and facilities along with massive port expansion programmes to enhance port efficiency while maximising returns to the port. However, spending extra millions for the investments in infrastructure might not lead to optimum operations. Poor planning in port improvement programmes might result in costly redundancies (Anwar, 2008). Financial indicators play a vital role in determining the financial efficiency and to enable the management to allocate the resources in an optimal manner. Thus, there is a push amongst port operators to improve their port performance and efficiency due to increasing competition between ports and growing pressure from shippers for lower port and shipping charges (Tongzon, 1995).

Having said that, Port Management programme of the UNCTAD for Trade Programme has developed a port performance measurement component which culminated in the adoption of 26 indicators across six areas namely finance, human resources, gender, vessel operations, cargo operations

and environment (UNCTAD, 2016). Despite the wealth of literature in the port performance, the discovery of these areas has been limited to operational efficiency with regards to firm efficiency and very scarce on financial efficiency.

Issues pertaining to financial efficiency of ports has been debated by authors such as Holmberg (2000); Vitale and Mavrinac (1995); MARAD (2003) in Nazery et al (2012). The measurement of efficiency level is different from one another. The reason being ports have different characteristics in terms of size, type of cargo handled etc. as ports are a complex business with many sources of inputs and outputs, making it difficult to treat ports as homogenous. (Valentine and Gray, 2001).

There exists no widely accepted way to measure the performance of Malaysian container ports. Port operators and authorities tend to publicize achievements such as growth of throughput handled (including empty containers) and short berthing time to vessels calling at those ports. (Nazery, et al, 2012).

Many empirical findings provide inconsistent determinants and data as to define input and output to represent firm efficiency. Thus, this paper will highlight the measurement of input and output for port business which focuses on the ports operated by public-listed companies (PLCs) in Malaysia. The financial efficiency results will strengthen the study on port efficiency by complementing the operational efficiency measurement.

Thus, the objective of this paper is to evaluate the efficiency of Malaysian ports operated by PLCs in terms of cost, revenue and profitability.

**Literature Review**

Efficiency signifies a level of performance that describes using the least amount of input to achieve the highest amount of output. It is a measurable concept that can be determined using the ratio of useful output to total input. It minimizes the waste of resources such as physical materials, energy and time while accomplishing the desired output. Efficiency is an important attribute because all inputs are scarce. According to Kim (2016), efficiency can be interpreted as the productivity in terms of physical volumes of inputs and outputs, and as the financial efficiency in terms of monetary inputs and outputs.

UNCTAD (2016) was the early known international trade monitoring agency to point out the importance of measuring the performance of ports which should be gauged based on six aspects which include the financial aspects. Guner (2015) has differentiated four types of efficiencies in sea-port literature, namely; infrastructure efficiency, super-structure efficiency, operating efficiency and financial efficiency. The existing port efficiency studies have almost exclusively focused on infrastructure efficiency, super-structure efficiency, operating efficiency without concrete studies on financial efficiencies.

A control instrument must be established from which the port management can easily recognise where capacity problems are likely to arise in the future (Anwar, 2008).

Nazery et al. (2012) revealed that Malaysian ports are already facing intense competition from regional ports to attract MLOs and to handle more cargos. In recent years, ports in the region have embarked on aggressive expansion to serve their users better and in anticipation of growing demand for shipping services and global seaborne trade. Not only their operators are offering features and facilities of international standards, they are doing so at very competitive rates. This had pressured the local ports to provide value-adding services to compete with neighbouring ports in Singapore, Indonesia, the Philippines and Thailand.

In this regard, it is important that the performance of Malaysian ports, in particular those operated by public listed companies, which are more business oriented, can be measured in a way that is acceptable to port users, authorities, users and other stakeholders to assess where these ports stand vis a vis other port.

Since there has been no widely accepted way to measure the performance of Malaysian ports, there is a tendency for port operators and authorities to publicize insufficient information such as growth of throughput handled (including empty containers) and short berthing time to vessels calling at those ports. It cannot become a reliable indicator to assess the performance of the ports.

**3.0 Data and Methodology**

Secondary data is used in the study which are collected mainly from the published Annual Reports covering financial years from 2011 to 2018 of the selected port operating companies listed on Bursa Malaysia, the country's stock exchange. The data will be assessed from mainly their respective websites.

Public-listed companies are required to publish their annual reports to be easily assessed by the shareholders and external users of business and financial information via on-line.

The population of the data will consist of public companies listed in Bursa Malaysia, which are operating various ports in Malaysia. These companies have been specifically re-categorised under Transportation and Logistics sector as of 24 September 2018. As public-listed entities, they are being subjected to special regulations and requirements and good corporate governance practices.

There is a total of 934 companies listed on the Bursa Malaysia, of which 32 companies are categorised under Transportation and Logistics and out of this only four companies have been involved in port operations. These four companies, in turn, operate 15 ports between them, nine are located at Peninsular Malaysia and six ports in East Malaysia. Among them are the country's major ports.

Literatures on measuring efficiency suggest that Data Envelopment Analysis (DEA) has been commonly applied to measure port efficiency. DEA is one of the most popular methodology used by many researchers to assess the port efficiency. DEA is a well-known statistical technique that is used to measure the relative efficiencies of units where simple efficiency measures are difficult to obtain (Farrell 1957 and Charnes et al 1978).

This approach utilize data on inputs, outputs and production function theory in order to derive the estimation of the most efficient production frontier across a group of ports. Port efficiency measures are then based on deviations from this frontier.

Efficiency can be articulated as a ratio of output to input. The non-parametric DEA method will be employed to measure the financial efficiency of the PLCs operating the Malaysian ports. For the purpose of this study, an input minimization orientation, based on the assumption that during period under study these PLCs strategically focus on reducing (or minimizing) costs. The main appealing aspect to the mechanics of DEA is that it is capable in dealing with multiple inputs and outputs. The usual measure of efficiency is

*Efficiency = Output / Input*

To further discuss the mechanics of DEA in more technical terms, let us assume that there is data on $K$ inputs and $M$ outputs for each $N$ PLC. For the $i$th PLC, these are represented by $xi$ and $yi$ vectors respectively. $\delta\hat{}i = \min \delta\hat{}i,\lambda\ \delta > 0 | \delta\hat{}iyi \leq\ i{=}\ n1\ yi\lambda;\ xi \geq\ i{=}\ n1\ xi\lambda;\ \lambda \geq 0,\ i = 1, \ldots, n$ PLC (1) where $y$ is a vector of port outputs, $x$ is a vector of inputs, $\lambda$ is a $N$ x 1 vector of constants. The value of $\delta\hat{}i$ is the technical efficiency score for the $i$th port. A measure of $\delta\hat{}i = 1$ indicates that the port is technically efficient, while $\delta\hat{}i > 1$ indicates that a port is inefficient.

Due to the unavailability of output and input variables in other studies, the variables are adapted from Bader et al., (2008). Measurements for each inputs and outputs are as follows:

| Variable | Variable Name | Definition |
|---|---|---|
| | Cost Efficiency | |
| Output | Total Costs | Total operating costs |
| Input | Fixed Assets | Non-current Assets |
| | Revenue Efficiency | |
| Output | Total Revenue | Revenue (port operations) |
| Input | Total Funds | Capital Expenditure |
| | Profit Efficiency | |
| Output | Profit after Tax | Total Costs-Taxes |
| Input | Total Cargo Throughput | Port Services |

**4.0 Results and Analysis**

The efficiency level of each PLC's port operators is derived from the Data Envelopment Analysis (DEA) method. The value of efficiency score for this study is generated by using input-orientation with constant return to scale on technical efficiency (crste). The most efficient firm will become the benchmark and deemed as the best operator for the particular year within the same sector which is port operating sector. With regards to this, it is important to note that the DEA approach presumes that the other companies in the same sector will be able to produce the same output with a minimal input. According to

Soh (2015), the other companies in the same sector will automatically adjusting their strategy of efficient solution for both input and output to be more efficient as to rival the best producer.

4.1 *Cost Efficiency*

Table 1.1 Cost Efficiency Score

| Year | Operator A | Operator B | Operator C | Operator D |
|---|---|---|---|---|
| 2011 | 0.5729 | 0.5180 | 0.9899 | 0.9627 |
| 2012 | 0.7962 | 0.5691 | 1.0000 | 0.9254 |
| 2013 | 0.3489 | 0.4669 | 0.9798 | 1.0000 |
| 2014 | 0.4421 | 0.6984 | 0.9460 | 1.0000 |
| 2015 | 0.2524 | 0.4121 | 0.3244 | 1.0000 |
| 2016 | 0.3470 | 0.5024 | 1.0000 | 0.9534 |
| 2017 | 0.5829 | 0.4940 | 0.6617 | 1.0000 |
| 2018 | 0.6616 | 1.0000 | 0.6266 | 0.9743 |
| Mean | 0.5006 | 0.5827 | 0.8161 | 0.9770 |
| *Rank* | *4* | *3* | *2* | *1* |

Note: The shaded area which is Operator D indicates the port operator has become the benchmark to its counterpart in cost efficiency.

Table 1.1 showcases the results of cost efficiency for each PLC's port operators from the year 2011 until 2018. The results are indicated by how efficient port operators in minimizing the costs of input while producing the same amount of output within a year. It was evident that Operator D (97.7%) is the most efficient in utilizing their existing fixed assets (average amount of RM26,084.92 million at the minimum cost from the year 2011 to 2018 to generate the same level of operating cost (total amount of RM34,304.69 million). This eventually puts Operator D as the benchmark for cost efficiency as compared to its other counterparts.

The result reflects the good reputation held by Operator D which operates among the major and competitive ports in Malaysia. On the contrary, Operator A has recorded the lowest score of cost efficiency which is 50.06%. In other words, Operator A has not utilised 49.94% of its inputs (fixed assets) capacity, or it could have saved 49.94% of its inputs to generate the same level of outputs (operation cost) within the year of 2011 to 2018 in which 2015 reported the lowest efficiency (highest inefficiency) of 25.25% (75.75%) respectively. The inefficiency of Operator A is obvious when there is a drastic increase of operating cost from only RM349,281 in 2012 to RM700,576 in 2013. Additionally, a back-to-back increment of operating costs were documented from the year 2014 to 2015 and finally peaked at the highest point in 2016 with RM965,555. All these costs are due to the inefficient utilization of the fixed assets in operating the port. Meanwhile, Operator C and Operator B recorded 81.61% and 58.27% efficiency respectively. Overall, Operator C only showed inefficiency in 2015 where only 32.44% of the resources or fixed assets have been utilized to produce the same level of output. Finally, with regards to the cost efficiency, Operator B had not utilised 41.73% of their fixed assets in order to produce the same output level.

4.2 *Revenue Efficiency*

Table 1.2 Revenue Efficiency Score

| Year | Operator A | Operator B | Operator C | Operator D |
|---|---|---|---|---|
| 2011 | 0.5567 | 0.0800 | 0.0056 | 0.9341 |
| 2012 | 0.1133 | 0.0684 | 0.0032 | 1.0000 |
| 2013 | 1.0000 | 0.0916 | 0.0080 | 0.8682 |
| 2014 | 1.0000 | 0.1787 | 0.0122 | 0.4426 |
| 2015 | 1.0000 | 0.2410 | 0.0057 | 0.0675 |
| 2016 | 0.6754 | 0.6116 | 1.0000 | 0.1239 |
| 2017 | 0.2856 | 0.1320 | 1.0000 | 0.6920 |
| 2018 | 0.3094 | 0.2334 | 0.3323 | 1.0000 |
| Mean | 0.6176 | 0.2046 | 0.2959 | 0.6411 |
| *Rank* | *2* | *4* | *3* | *1* |

Note: The shaded area which is Operator D indicates the port operator has become the benchmark to its counterpart in revenue efficiency.

The empirical findings presented in Table 1.2 are the score for revenue efficiency of each PLC's port operators within the year 2011 to 2018. Apparently, Operator D remains at the top tier to benchmark among all port operators in Malaysia by recording 64.11% efficiency in revenue. This means Operator D obtained 64.11% of revenues by using their CAPEX. On the other hand, this port operator had lost 35.89% of possible revenues to be acquired if the CAPEX was utilized at its maximum efficiency. However, by looking at the yearly efficiency score, Operator D has been highly efficient except when there is a notable decline from 86.82% in 2013 to only 44.26% in 2014 which then further deteriorated to only 6.75% and 12.39% in 2015 and 2016 respectively. However, Operator A, which is the least efficient among all ports with regards to its cost efficiency, seems more revenue efficient as it ranked at second place after Operator D with a small deviation of only 2.35%. It is worth mentioning that Operator A has been revenue-efficient by reaching the value of output-oriented technical efficiency equal to one for three consecutive years (2013 to 2015). It indicates that Operator A was technical efficient, when it produced the maximum possible output (revenue) by using a given input (CAPEX). However, there is a continuous declining trend that should be observed by Operator A starting from 2016 until the most recent years where it has become highly inefficient where it lost its opportunity to generate more revenue of 71.44% (2017) and 69.06% (2018) respectively due to inefficient use of its CAPEX.

Meanwhile, both Operator C and Operator B recorded a very low revenue-efficiency (high revenue-inefficiency) which are 29.59% (70.41%) and 20.46% (79.54%) respectively. Operator C experiences the lowest level of inefficiency at the beginning of the observed period back-to-back until 2015 where the lowest point recorded at 0.32% in 2012 which also means Operator C lost an opportunity to acquire a possible maximum revenue which amounted to RM81,902.07 million if this port utilizes all of their CAPEX at full efficiency level. Nevertheless, Operator C managed to achieve full revenue-efficiency in 2016 and 2017 when this port increases the amount of CAPEX from an average of RM5.522 million in earlier years from 2011until 2015) to RM179.104 million in 2016 and RM90.294 million in 2017. This explains why the revenue-efficiency score drop from full efficiency in 2017 to only 33.23% in 2018 which is due to the decreasing amount of CAPEX from RM90.294 million to only RM22.423 million.

Finally, Operator B is ranked as the least efficient in terms of revenue accumulation that revealed that the port operator has been steadily inefficient throughout the entire studied period except for 2016 with 61.16% level of efficiency.

4.3 *Profit Efficiency*

Table 1.3 Profit Efficiency Score

| Year | Operator A | Operator B | Operator C | Operator D |
|---|---|---|---|---|
| 2011 | 0.7031 | 0.6988 | 0.9003 | 0.9120 |
| 2012 | 0.5999 | 0.6181 | 0.8005 | 1.0000 |
| 2013 | 0.8061 | 0.7794 | 1.0000 | 0.8240 |
| 2014 | 0.8019 | 0.6098 | 1.0000 | 0.4283 |
| 2015 | 0.6582 | 0.4761 | 0.2844 | 1.0000 |
| 2016 | 0.8416 | 0.6078 | 0.7517 | 1.0000 |
| 2017 | 0.5460 | 0.3221 | 0.6101 | 1.0000 |
| 2018 | 0.5436 | 0.3373 | 0.5501 | 1.0000 |
| Mean | 0.6876 | 0.5562 | 0.7372 | 0.8956 |
| *Rank* | *3* | *4* | *2* | *1* |

Note: The shaded area which is Operator D indicates the port operator has become the benchmark to its counterpart in profit efficiency.

Profit efficiency score of each port operators during the studied period are demonstrated in Table 1.3. Profit efficiency offers more useful information on management efficiency since it considers both the cost and revenue effects on the changes in output scale and scope (Kamarudin et al., 2015). What is apparent, being the most efficient operator in both cost and revenue efficiency has put Operator D as the benchmark in profit-efficiency (89.56%) which also the port's maximization of profit by reducing the cost

and increasing the revenue. Operator D has been efficient at maximizing its capacity for the last four years under observation and only inefficient in 2014. At the same time, Operator C comes in second place at high efficiency score in profit maximization which is 73.72% which also means it could have acquired another 26.28% of profit within the studied period if the port fully minimizes the cost and maximize the revenue. Next in the third rank of profit-efficiency, Operator A recorded an average score of 68.76% efficiency in which the highest point is 84.16% in 2016 and the lowest is recorded in the most recent year in 2018 with 54.36% efficiency score. Of the port operators, Operator B recorded 55.62% of the average efficiency which indicate that this operator lost the highest amount of possible profit generation which amounted to 44.38% or RM5,055.97 million.

The above findings illustrate the comparison of cost-efficiency, revenue-efficiency and profit-efficiency for each of PLC's port operators within the period of 2011 until 2018. Apart from looking at the competitive perspective of each port by putting each of the port in the efficiency ranking with regards to cost, revenue and profit maximization aspects, it is also worth to know the internal strength of each port operator in order to improve their level of competitiveness.

Table 1.4 The Efficiency Pattern for Each Respective Operators

| Year/ Operator | Operator A | | | Operator B | | | Operator C | | | Operator D | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Efficiency | *C* | *R* | *P* | *C* | *R* | *P* | *C* | *R* | *P* | *C* | *R* | *P* |
| 2011 | 0.5729 | 0.5567 | 0.7031 | 0.5180 | 0.0800 | 0.6988 | 0.9899 | 0.0056 | 0.9003 | 0.9627 | 0.9341 | 0.9120 |
| 2012 | 0.7962 | 0.1133 | 0.5999 | 0.5691 | 0.0684 | 0.6181 | 1.0000 | 0.0032 | 0.8005 | 0.9254 | 1.0000 | 1.0000 |
| 2013 | 0.3489 | 1.0000 | 0.8061 | 0.4669 | 0.0916 | 0.7794 | 0.9798 | 0.0080 | 1.0000 | 1.0000 | 0.8682 | 0.8240 |
| 2014 | 0.4421 | 1.0000 | 0.8019 | 0.6984 | 0.1787 | 0.6098 | 0.9460 | 0.0122 | 1.0000 | 1.0000 | 0.4426 | 0.4283 |
| 2015 | 0.2524 | 1.0000 | 0.6582 | 0.4121 | 0.2410 | 0.4761 | 0.3244 | 0.0057 | 0.2844 | 1.0000 | 0.0675 | 1.0000 |
| 2016 | 0.3470 | 0.6754 | 0.8416 | 0.5024 | 0.6116 | 0.6078 | 1.0000 | 1.0000 | 0.7517 | 0.9534 | 0.1239 | 1.0000 |
| 2017 | 0.5829 | 0.2856 | 0.5460 | 0.4940 | 0.1320 | 0.3221 | 0.6617 | 1.0000 | 0.6101 | 1.0000 | 0.6920 | 1.0000 |
| 2018 | 0.6616 | 0.3094 | 0.5436 | 1.0000 | 0.2334 | 0.3373 | 0.6266 | 0.3323 | 0.5501 | 0.9743 | 1.0000 | 1.0000 |

The efficiency patterns in Table 1.4 suggest that Operator D is the most efficient among the operators in terms profit and cost and to some extent revenue in 2012 and 2018. Operator B, Operator C and Operator D are more cost-efficient as compared to Operator A, which is proven to be more revenue efficient. Specifically, Operator B and Operator C depend heavily on minimizing cost of utilizing their fixed assets in order to generate the same level of operational costs since both port operators have been highly inefficient in acquiring revenue through the utilization of CAPEX. In addition, Operator D proves that both cost-efficiency and profit-efficiency play significant role in assisting the port operator to maximize profit. On another note, Operator A provides a different view in which revenue-efficiency is the main contributor for the port operator's profit maximization.

## 6.0 Conclusion and recommendation

The DEA findings show that there are mixed results in the efficiency level among the ports. However, it can be concluded that generally port operations managed by these public-listed companies have been operating below their efficiency levels during the 2011-2018 period. To improve the efficiency level, measures can be initiated and considered for these operators to utilise and manage their resources and cost-cutting measures in respective areas.

Managing resources efficiently has important implications on operators of port as running a port is very capital-intensive but return of investment takes very long period. The scarcity of resources should be utilised for other necessities or could be spent on other critical areas to improve performance. The comparison of efficiency could be used to improve the firm's effective management and provide control abilities of the firm.

Future studies could be further extended to identify the determinants of port financial efficiency as part of the management strategies. The determinants could help solve the operators to initiate reforms or improvement to enhance efficiency and performance of their ports.

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# Malaysian code on corporate governance and risk management committees towards firm's performance in Malaysia

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**Keywords**
Malaysian Code on Corporate Governance (MCCG), Separate Risk Management Committee, Corporate Governance, ROA, Tobin's Q, Panel Data Technique

**Abstract**

*Risk management has become a predominant concept in corporate governance and is associated with the idea of internal control that can be evaluated by using risk-based approach. Past studies (Kallamu, 2015; Ng, Chong & Ismail, 2013), have argued that there is a need for a separate Risk Management Committee (RMC) due to negligence of audit committee in monitoring firm performance (Bates & Leclrec, 2009). Apart from that, the researchers claimed that a firm that establishes an RMC can focus on risk issues (RMC), thus, effectively monitors risk and manages internal control system. The current study used Tobin's Q and ROA to evaluate the firm performance of listed companies from Consumer Goods Sector on Bursa Malaysia. The data was analysed using Panel data Techniques and the findings suggest that a separate risk management committee (RMC) which consists of most independent non-executive directors would increase firm market valuation and adversely affects accounting returns. The latter results support Stewardship Theory which suggests that executive directors are good stewards in providing better monitoring of the business due to their exquisite knowledge.*

## 1.0 Introduction

The concept of risk management has been given emphasis since the establishment of Malaysian Code on Corporate Governance in 2000. The guideline was viewed as one of the principal responsibilities of the board of directors (Ghazali & Manab, 2013) to protect the interest of the shareholders by preserving the effective internal control to include risk management (paragraph 4.14, MCCG 2000) and to identify the risk and execute appropriate mechanism to manage the risk (paragraph 4.17). In view of the complexity of capital market and the need to enhance corporate governance practice, the MCCG 2000 was revised in October 2007. The revision emphasised two (2) major aspects of the corporate governance elements, namely board of directors and audit committee function. According to Ghazali and Manab (2013), the Malaysian Code on Corporate Governance 2007 marked a significant move in corporate governance practices as it is now mandatory instead of voluntary for companies to have its internal auditing committee that includes a risk management team. The revised Code in 2007 outlined three (3) major areas that need to be considered by the chief of internal audit. They include reviewing and evaluating the effectiveness of risk management, internal control and governance process in the organization. In relation to the broad principles and specific recommendations on structures and processes, the MCCG 2012 set out eight (8) broad principles and twenty-six (26) specific recommendations that make good corporate governance an integral part of their business dealings and culture. Among these principles, the risk management guidelines fall under the Sixth Principle which emphasises the requirement for the board to establish a sound risk management framework and internal controls system. Although the observance of the MCCG 2012 by companies is voluntary, listed companies are required to report on their compliance with the MCCG 2012 in their annual reports. In 2017, a new Malaysian Code on Corporate Governance was introduced by the Securities Commission to ensure that the governance practice in Malaysia is regularly improved. The revised code of MCCG 2017 has heightened the importance of having strong internal control and risk management functions to effectively monitor the company's risk management

framework, policies and its implementation. In relation to this, the new MCCG requires all business are required to establish Risk Management Committee (RMC) that comprises most independent directors.

In view of the significance for companies to identify and execute appropriate mechanism to manage risk, Akindele (2012) argues that firm performance largely depends on the risk management mechanism. In this perspective, it is believed that firms that are proactive in risk management activities can detect and prevent frauds in financial reporting, thus, reducing the likelihood of unexpected losses, reputational damage or strategic setbacks. Likewise, a board that puts in place firm-wide risk management system increases risk awareness within a firm. This is justifiable as poor monitoring of risks may result in significant losses for companies that may affect their overall performance. As a matter of fact, auditors are likely to perceive boards of directors that actively participate in risk management as more thorough when reviewing the effectiveness of internal controls as it improves the company's overall performance (Walker, 2009). Notably, numerous studies have indicated a positive relationship between RMC and company's performance (Zemzem & Kacem, 2014; Hoyt & Liebenberg, 2011; Gordon, Loeb, & Tseng, 2009) due to its role as a supervisory mechanism of risk (Subramaniam, McManus & Zhang 2009, 2009). Empirical studies also show that the establishment of RMC in companies is affected by corporate governance and risks related to financial reporting (Kallamu, 2015; Viljoen & Coetsee, 2014; Subramaniam, 2009).

About shareholders' wealth maximization goals, Law and Yuen (2018) stated that an audit committee plays a crucial role in the corporate governance process that is the cornerstone of shareholder protection. As a matter of fact, the establishment of audit committee which comprised of independent non-executive directors aims to mitigate corporate fraudulent or creative accounting practices through internal control. This in turn helps to improve corporate governance practice of firms. However, there are doubts about audit committees' effectiveness in monitoring the risk management issues despite of their substance value towards company's performance (Badriyah, Sari & Basri, 2015). The malpractices among conglomerates in Malaysia such as Megan Media and Transmiles have heightened the awareness of risk management due to many recent corporate disasters and unexpected business failures (Walker, Shenkir & Barton, 2002). This creates a need for a separate risk management committee (RMC) due to audit committee's inability to perform functions of both audit committee and RMC (Bates & Leclerc, 2009). A separate committee that specifically focuses on risk issues (RMC) is an effective mechanism in support of the board of directors to fulfil their responsibilities in the task of monitoring risk and internal control management. Such a committee can potentially become a critical resource for boards in meeting their risk management responsibilities. Yet, empirical evidence on the formation and nature of RMCs remain scant and limited (Ishak & Yusof, 2013). In other words, there is little empirical evidence on both corporate governance and firm-related factors associated with an organisation's decision to establish a separate RMC as opposed to a combined RMC committee.

In view of these limitations, the current study aims to examine the effectiveness of a separate risk management committee (RMC) towards Malaysian Public Listed Company's performance measured by Tobin's Q and Return on Assets. About the establishment of RMC in a company, it is expected that other firm characteristics such as firm size and leverage risk would also have effect on risks faced by company (Badriyah, Sari, & Basri, 2015).

## 2.0 Literature Review

Previous research on corporate governance often uses the agency theory as a theoretical basis, in relation to the establishment of a risk management committee (RMC) in an organization. The theory aims at resolving two problems that can occur in agency relationships. These problems arise due to conflict of interests between the principal and the agent, which arise due to the separation of ownership and control (Davis, Schoorman, & Donaldson, 1997). According to the researchers, managers tend to develop opportunistic behaviour due to legitimacy authority that has been bestowed to them by the shareholders. This behaviour leads to a conflict of interest causing agency problem. For this reason, the committee formed by the board of commissioners is an application of effective corporate governance mechanisms to address the agency problem (Cai, Qian & Liu, 2008). Usually, RMC is predicted to exist in a situation where the agency cost tends to be high, for example, in the situation of high leverage and large sized companies (Subramaniam et al., 2009; Chen, Kilgore & Radich, 2009).

Another theory relevant to the current study is the Stewardship Theory. Unlike agency theory, this theory suggests that stewards are satisfied and motivated when organizational success is attained. It

stresses on the position of employees or executives to act more autonomously so that the shareholders' returns are maximized. Fama (1980) contend that executives and directors are also managing their careers in order to be effective stewards of their organization. The managers are required to be stewards in the organization by protecting the shareholders' interests as a way of instilling strong corporate governance to minimize the risk of loss by shareholders. Indeed, this can minimize the costs aimed at monitoring and controlling behaviours in agency problems (Davis, et al., 1997).

In relation to the development of RMC as a sub-committee of the BOD, researchers found that larger companies tend to establish an RMC as they possess greater amount of assets. This imposes greater risks to the company as it requires external funds to support funding in capital market (Mirawati, 2014). Notably, companies that have a large portion of long-term liabilities tend to have greater financial risk as higher leveraged firms are more likely to have debts covenants and higher concern about risks (Goodwin & Kent, 2006). Therefore, there will be a greater demand for such companies to form RMC to oversight such risks as lenders tend to demand better internal controls and related monitoring mechanisms. With regard to the firm's performance measurement, return on assets (ROA) has been used extensively to represent actual firm performance (Ponnu, 2008) which measures the amount of earning generated from an invested capital asset (Epps & Cereola, 2008). Apart from ROA, another frequent proxy used to measure firm market performance in relation to corporate governance is Tobin's Q. Tobin's Q is also known as q ratio and Kaldor's v which measures the market performance of firms which is calculated as the market value of a company divided by the firm's assets (Kamardin & Haron, 2011; Haniffa & Hudaib, 2006).

## 3.0 Methodology

This research focuses on Malaysian public-listed companies from Consumer Goods Sector for a period of 9 years, starting from the year 2010 until 2018. The period of the study is justified by the requirement on best practices of the Code of Corporate Governance to include a risk management team in an internal auditing committee as a mandatory requirement in MCCG 2007 (Ghazali & Manab, 2013). However, due to unavailability of data, the current study was not able to include the data for the year 2008 where the requirement on MCCG 2007 took effect. Thus, this influence the sample size because it relied heavily on the corporate governance disclosure by the listed companies.

In relation to the measurement of RMC, the current study used a dichotomous variable of "1" to represent the compliance of the listed company to set up a separate RMC and "0"as a non-compliance on the listing requirement of Bursa Malaysia. Therefore, based on a filtration process, there are only 19 listed companies undertaken for data analysis since not all listed companies of Consumer Goods Sector have established a separate risk management committee (RMC). This could be due to the requirement by MCCG 2017 that is still recent. Additionally, the Listing Requirement by Bursa Malaysia under Paragraph 15.25 also required for any listed company to constitute a RMC which comprises a majority of independent directors to oversee the company's risk management framework and policies (of Bursa Malaysia Listing Requirements). As a matter of fact, some listed companies under the sector justified that the Board is of the view that a separate Risk Management Committee is not required. Therefore, instead of establishing a separate RMC, its audit committee is renamed as Audit and Risk Management Committee (ARMC) and is given additional responsibility to review and manage key business risks of the company.

About the choice of sector in Bursa Malaysia, the Consumer Goods Sector or Fast-Moving-Consumer-Goods (FMCG) industry has been chosen due to its long history of generating reliable growth through mass brands. However, due to recent technology-driven trends, foreign-exchange effects and inflation faced by the country, this sector experienced a shift in consumer behaviours. This shift and the establishment of RMC in this sector presents an intriguing concern in this study of corporate governance and its risk management initiatives.

Meanwhile, the empirical models used in this study are based on firm to firm framework (Panel data technique) as shown below:

*Model 1*

$$\ln\text{TOBINS Q}_{it} = \alpha + \beta_1 \text{SEPRMC}_{1it} + \beta_2 \ln\text{FSIZE}_{2it} + \beta_3 \text{LEV}_{3it} + \epsilon_{it} \quad \ldots(1)$$

*Model 2*

$$\text{ROA}_{it} = \alpha + \beta_1 \text{SEPRMC}_{1it} + \beta_2 \ln\text{FSIZE}_{2it} + \beta_3 \text{LEV}_{3it} + \epsilon_{it} \quad \ldots(2)$$

In these models, Tobin's Q or the Kaldor's v and Return on Assets (ROA) are the dependent variables that are used to measure firm performance, while SEPRMC, FSIZE and LEV are the independent variables that are used to predict the firm's performance. As for the coefficients or multipliers of β1, β2 and β3, they describe the size of the effect the independent variables on the dependent variables. The constant variable of alpha, α, is the predicted value that Tobin's Q and ROA would have when all the independent variables are equal to zero. Table I describes the proxies for each variable:

Table I: The Measurement of Independent and Dependent Variables

| Variables | Description | Proxies | Authors |
|---|---|---|---|
| Firm Performance | Return on Assets (ROA) | Net income in each period to the total value of its assets | Kamardin and Haron (2011); Haniffa and Hudaib (2006); Lam and Lee (2008) |
| Firm Performance | lnTOBINS Q | Natural logarithm of Total market value of firm/Total assets | Kamardin and Haron (2011); Haniffa and Hudaib (2006); Drobetz et al. (2004); Himmelberg et al. (1999); Holderness et al. (1999) |
| Corporate governance | Separate Risk management committees' size (SEPRMC) | Dichotomous Variable, 1 if a firm sets up a separate RMC, 0, no separate RMC | Ali and Mastuki (2017); Yatim (2010) |
| Firm characteristics | lnFirm Size (FSIZE) | Natural logarithm of company's total assets | Subramaniam et al. (2009) |
| Firm characteristics | Leverage (LEV) | The proportion of total long-term liabilities to total assets | Subramaniam et al. (2009) |

In this study, the panel data analysis involved repeated observations on the Tobin's Q and Return on Assets (ROA) for the sample size in relation to the independent variables for a period of 9 years. This allowed the researcher to observe the performance of individual company in relation to the existence of a separate RMC. There are several alternatives used to estimate the panel data equations in the estimation procedure. However, for this study, the researcher only utilized the Fixed Effects Model and Random Effects Model. In order to assess the significant effects of the existence of a separate RMC towards company's performance, the researcher had to compare results from the hypotheses tested under Return on Assets and the Tobin's Q. The hypothesis testing of this study is based on non-directional hypothesis whereby the null hypothesis indicates no significant relationship between the existence of a separate RMC and firm performances. Meanwhile, the alternate hypothesis indicates a significant relationship between the existence of a separate RMC and firm performances.

## 4.0 Data Analysis and Findings

As presented in Table II, the findings indicate that both empirical models are poolable to Panel data technique. The Hausman specification tests results provide two different models used for the dependent variables. The Tobin's Q is based on Fixed Effect with Heteroscedasticity and Autocorrelation Consistent (HAC), while the dependent variable of ROA is using the Random Effect Model of FE Robust. Findings from the regression analysis on firm performance indicate that there is a positive relationship between a corporate governance requirement on RMC and firm market performance measured by Tobin's Q. The result also presents a significant p-value of less than 0.05 which indicates that a firm with a separate RMC enhances a market valuation of the company (Kallamu, 2015). The result also implies that the market believes a firm with RMC has a good monitoring mechanism, indirectly increasing the market performance of the firm. Meanwhile, a weak negative correlation between the existence of a separate RMC and firm performance indicate that the listing requirement by Bursa Malaysia on the Practice 9.3 where the board establishes a Risk Management Committee that comprises a majority of independent directors does not contribute to the increase in performance measured by ROA. This is contrary to the theoretical expectation based on agency theory and contrary to evidence reported by Tao and Hutchinson (2012), Yeh, Chung, and Liu, (2011) and Minton, Taillard and Williamson (2010). The negative association could

be due to inadequate monitoring by independent non-executive directors or inadequate technical knowledge and experience needed to perform the monitoring role effectively (Kallamu, 2015; Klein, 1998; Tao & Hutchinson, 2012). On the other hand, the result supports stewardship theory which suggests that executive directors are good stewards due to their superior knowledge of the business which enables them to provide better monitoring of the company's business.

Another incongruent finding between the two firm performances measurement is on the leverage, whereby, it indicates a significant correlation and the highest correlation compared to other relationship among the variables. A positive relationship between a leverage and firm financial performance measured by Tobin's Q indicates that higher levels of leverage in the capital structure of listed companies under Consumer Goods Sector in Malaysia are associated with a stronger firm market performance. It also suggests that leverage boosts the market performance of firms of all sizes. This finding is consistent with that of Ibhagui and Olokoyo (2018) which found a significant relationship between financial leverage and firm market performance. However, the result differs when firm performance is measured based on ROA. The findings indicate an inverse relationship between financial leverage and firm performance which supports the assumptions of the pecking order theory. As presented in Table II, increase in the leverage will lower firm performance by 0.2378. As the p values are less than 0.05, the hypotheses are accepted at the 95% confidence level, thereby indicating that financial leverage has a statistically significant negative effect on ROA. The findings are consistent with that of Quang and Xin (2014), who found that the capital structure of the listed firms (non-financial firms) in Vietnam has a statistically significant negative effect on financial performance measured by ROA and ROE. Additionally, the study of Saeedi and Mahmoodi (2011) concerning the relationship between financial leverage and firm performance of listed companies on the Tehran Stock Exchange (TSE), also suggested a negative relationship between capital structure and ROA. The regression results revealed that firm size has an insignificant negative relationship with ROA. This finding is consistent with Kallamu (2015) and several other studies.

Table II: Multivariate Regression Analysis Based on ROA and Tobin's Q

| | Pooled OLS lnTobin's Q (HAC) | ROA (FE Robust) | Fixed Effect with robust (ROA) | Random Effect (lnTobin's Q) |
|---|---|---|---|---|
| SEPRMC | -1.008*** | -0.0049 | -0.0419049 | 0.5178** |
| | (-2.29) | (-0.14) | (-0.99) | (2.14) |
| lnFSIZE | 0.2416*** | -0.0030 | -0.003159 | -0.586*** |
| | (2.37) | (-0.37) | (-0.05) | (-6.31) |
| LEV | -8.447*** | -0.3877 | -0.2378*** | .7158* |
| | (-4.08) | (-2.34) *** | (-2.24) | (1.93) |
| Constant | -3.013*** | 0.2494*** | 0.239 | 7.00*** |
| | (-2.42) | (2.53) | (0.27) | (5.61) |
| BP-LM Test | 499.35 | 420.22 | - | |
| | (0.001) *** | (0.001) *** | - | |
| Hausman Test | - | | 0.31 | 9.35 |
| | | | (0.9587) | (0.025) *** |
| Multicollinearity (VIF Test) | - | | 1.57 | 1.56 |
| Heterocedasticity (Modified-Wald Test) | - | | 16304.99 | 2.7e+05 |
| | | | (0.001) *** | (0.001) *** |
| Serial Correlation (Woolridge Test) | - | | 0.355 | 465.98 |
| | | | (0.5587) | (0.001) *** |
| R-squared ($R^2$) | 0.1141 | 0.0667 | 0.3999 | 0.0614 |
| Wald $Chi^2$ | - | | - | 77.79 |
| Prob > $Chi^2$ | - | | - | (0.001) *** |
| F (3, 18) | | | 5.20 | - |
| Prob >F | | | (0.0092) *** | - |
| Observations | 169 | | | |

*Note: *** Significant at 1% level; ** Significant at 5% level and * Significant at 10% level. BP-LM represents Breusch and Pagan Langrangian Multiplier Test whereas VIF represents Variance Inflation Factor. Symbol "- "indicates non-related test for the model.*

## 5.0 Conclusion

This study was conducted to investigate the effects of having a separate Risk Management Committee's in relation to firm performance. The dependent variables in the study include Tobin's Q and ROA as indicators while the independent variables comprised of RMC, firm size and leverage. The main objective of the study is to examine the effects of the existence of RMC in an organization, its functions as a key governance support mechanism towards firm performances in monitoring the organisation's risk management strategies, policies and processes. The results of the regression analysis indicate that there is a significant positive relationship between a separate RMC and firm performance measured by Tobin's Q. Meanwhile, results also indicate a weak negative correlation and insignificant between separate RMC and firm performance measured by ROA. Overall, both results on firm performances indicate that leverage significantly influences a firm's Tobin's Q and ROA.

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# The determinant of Maqasid Al-Shariah ratio using Financial indicators in Malaysia Islamic Banks

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**Keywords**
Maqasid Shariah ratio, Financial indicators, Islamic Financial Institution

**Abstract**

*The financial performances among the Islamic Financial Institution (IFI) in Malaysia and other country like GCC is said to be in higher performances however, most of it still fail to fulfil the shariah compliance as Maqasid scale. The purpose of this study is to identify the impact and relationship between IBs performances based on Shariah Compliance using Maqasid Shariah Performance ratio. The Maqasid Shariah ratio is measured based on establishing justice and public interest. The independent variable used as the performance ratio are profitability, liquidity and risk and solvency. The data tested using panel data analysis on the four-sample size of Islamic Banking (IB) in Malaysia covering the period of 2011 – 2018. The findings show significant impact and correlation among the MSR and financial performance indicators except for C/IN, NLDB and ETA which will provide and improve understanding on Maqasid shariah ratio as performance indicators and help the potential users to make a good decision especially for investment in Islamic products or services in Malaysia.*

## Introduction

The phenomenal growth in Islamic banking and finance (IBF) has placed Malaysia in a prominent position globally. However, the continuing trend of consolidation among Islamic banking (IB) industry with large mergers and acquisitions in biggest markets such as Malaysia and Gulf Cooperation Council (GCC) required the Islamic Finance (IF) to strive even harder. Central Bank of Malaysia (Bank Negara Malaysia or BNM) issued strategy paper in 2018 to develop strategies with the aim to strengthen the roles and the impact of Islamic Banking institutions (IBIs) to cope with the rapid changes and dynamism of the industry so IF needs to continuously carve its own branding and distinctiveness to provide wholesome value propositions. As for Malaysia, the recognition of dual system reporting under Section 27 of Central Banking of Malaysia Act 2009 allowed Malaysian-Islamic banking system to operate side-by-side with the conventional banking system. As demonstrated, the dual banking system provides a complete and comprehensive banking alternative to Malaysian. In addition, Shariah Governance Framework (SGF) was issued in 2010 with objective to provide a proper regulatory framework for Islamic Financial Institutions (IFIs) to function within the required Sharia framework thus it required all the IFIs to fully implemented in 2011. Equally important, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) accounting standards which has been used as basis of national accounting standards in jurisdictions such as Indonesia and Pakistan, however leading IFIs such as Brunei, Dubai International Financial Centre, Egypt, France, Kuwait, Lebanon, Malaysia, Saudi Arabia, South Africa, United Arab Emirates (UAE) and United Kingdom as well as in Africa and Central Asia used AAOIFI accounting standards on voluntarily as basis of internal guidelines. A study conducted by Asutay and Harningtyas (2015) found that Indonesia scored the best Maqasid al-Shariah performance result with 56.83%, followed, in order, by Pakistan, Malaysia, Turkey, Qatar and United Kingdom. However, Shaukat and Ferozkan (2017) found that the banks in GCC are relatively the best performers on their achievements of Maqasid scale grid matrix and only Malaysia can match the performance of GCC IBs. Still, Asutay and Harningtyas (2015) found that some IBs disclose the management of non-halal income in the charity report or as reported by Shariah Supervisory Board (SSB) in the annual reports.

In line with that, BNM required IF to be more prominent and a leading agent to positive change for the financial system and operates within network economy that shared value of integrity, inclusivity and

sustainability to reflect the true essence of IF by ensuring all shariah compliant financing with sustainable development goals as part of higher objective of shariah. All things to be considered, the need to conform most of the Syariah, or more importantly the Maqasid Al-Syariah and reflects a genuine concern for society then help further strengthen the international investor confidence for the fast growing IF industry in the country (Muhamad Sori, Mohamad, & Shah, 2015).

However, Napier (2007) stated that rapid expansion and the increased acceptability of International Financial Reporting Standard (IFRS) in the world would enforce more IB to apply IFRS, especially as most IBs currently operate in countries applying IFRS. As for Malaysia IBs, the application of Malaysian Financial Reporting Standard (MFRS) which converged with IFRS required the financial statements (FS) to be prepared in accordance with the MFRS which subject for any specific modification and exceptions on the MFRS. A case in point, Mohammed and Razak (2008) stated almost all the present IBs have adopted the conventional yardsticks to measure their performance. Evidently, Pappas, Ongena, Izzeldin and Fuertes (2016) provide evidence through differentiated failure risk between two types of banks which used of historical data for conventional banks where it is likely to provide distorted signals if it is applied to IBs. For instance, Sulong, Che Embi and Ariffin (2017) stated that Shariah-compliant status does not seem to contribute to IPO initial return performance differential between Shariah-compliant companies and their non-Shariah counterparts. Howevever, Shaukat and Ferozkan (2017) stated that banks for other jurisdictions or regions other than GCC and Malaysia, though compete on financial performance, but fail drastically on the Maqasid scale.

Therefore, due to the variations in ratings of performance in Maqasid scale grid matrix show clear inconsistency and lack of seriousness on the part of the IB authorities in jurisdictions to focus on delivering to their foundational Shariah objectives alongside perusing financial growth. As a result, the criticism that IBs are focused only on growing financially without connecting or complementing the growth by simultaneously delivering in terms of Maqasid al Shariah, appears true. For instance, empirical evidence indicates that there is lack of achievement in Maqasid al-Shariah performance of Islamic bank and finance (Asutay and Harningtyas, 2015). In fact, Shaukat and Ferozkan (2017) recommended to adopt the approach or model so that it could be adopted formally as an industrywide tool to continually gauge the performance on both grounds, particularly for Maqasid Al-Shariah. As the Maqasid shariah ratio is measured based on three (3) objectives; firstly-educating individual, secondly-establishing justice and thirdly-public interest which further classified into nine (9) dimensions; first-advancement knowledge, second-instilling new skills and improvement, third-creating awareness of Islamic Banking, fourth-fair dealings, fifth-affordable product and services, sixth-elimination of injustices, seventh-profitability, eighth-redistribution of income & wealth and ninth-investment in vital real sector then further classified into ten (10) elements: first-education grant, second-research, third-training, fourth-publicity, fifth-fair returns, sixth-affordable price, seventh-interest free product, eighth-profit ratio, ninth-personal income and tenth-investment ratios in real sector. Therefore, the purpose of this study to identify the significant impact of financial performances indicators towards the Maqasid shariah ratio (MSR) on IBs in Malaysia. This paper consists of literature review, methodology, findings, conclusion and recommendation.

**2.0 Literature Review**

Napier (2007) stated that in principle, the bank or the management as agents are constrained by Islamic values, which control their actions. Any divergence by managers of IFIs from placing all supplied funds in Sharia-compliant investments creates an additional source of agency problems (Safieddine, 2009). Soke Fun Ho, Masood, Abdul Rehman, & Bellalah (2012) stated AAOIFI established a standard requiring every provider of Islamic financial services to have its own Syariah supervisory board. Sulong et al., (2017) predicted that relying on the Shariah screening process by Shariah Advisory Council (SAC) may not be enough for the effectiveness monitoring process.

As few objective of research only observe a few countries so that the achievement of IB to the value of global Maqasid Syariah have not been known (Syafii, Sanrego and Taufiq, 2012). Shaukat and Ferozkan (2017) mentioned that ROA and ROE are the indicators of measuring managerial efficiency , the higher the liquidity ratio will indicate that firm has some liquidity issues. The findings suggest that IBs are significantly more efficient than conventional banks when compared to their own efficiency frontier (Bitar, 2014). The amount of borrowing under a conventional system is several times more than it would be under an Islamic system, and so are the risks inherited from these excessive borrowings (Kaber and

Hassan, 2001). Safieddine (2009) found that IFIs in the best governance group are smaller than their counter- parts in terms of the number of employees and total assets, they seem to operate more efficiently and to achieve superior returns. Better-governed IFIs have superior operating (e.g., higher profits and higher sales growth) and stock performance and enjoy higher valuations in the market.

IB profit rates/yields are highly correlated and move in tandem with conventional banking rates IB profit rates/yields are highly correlated and move in tandem with conventional banking rates (Wanke, Hassan & Gaviou 2017). In contrast, Tripe (2014) suggested that a bank with a better-quality loan book should have a lower cost to income ratio. However, Loghod (2010) found no huge contrasts as far as profitability amongst Islamic and conventional banks from GCC nations thus the operations of a dual banking system may serve to bring the IB sector into closer orbit with the conventional sector (Wanke et al, 2017). Furthermore, Hassan et al, (2009) stated that no significant difference between the overall efficiency of the IBs and the conventional banks. However, Omar (2016) found that IBs are less presented to liquidity risk and that traditional banks rely more on external liabilities compared to IBs. In addition, Wanke et al (2017) stated IBs use the same market data as conventional banks, IBs have better capacity of risk sharing. However, equal impact on both conventional and IBs and thus there is no significant difference in financial stability. From the above literature review shows the inconsistent results and needs further investigation to solve the research gap.

**3.0 Data and methodology**

There are 16 IBs listed under IFIs in Malaysia registered under BNM as per year 2019 chosen as the population, however due to constraint in availability of data and the census of the availability data, this study chooses only 4 IBs in Malaysia to be selected as the sample of study since most of the previous studies covering the small samples from IB. Data collected from IB's Annual report focusing on financial statement reports, Shareinvestor.com, Bloomberg database, IBs website covering the period of 8 years from 2011 until 2018. 2011 is chosen since all IBs need to fully implement based on the SGF in year 2011 and the data collected up to 2018 as the recent year based on census of the availability of data. The first test procedure for data using descriptive statistic to test the normality and equality variance for data using skewness and kurtosis. Then the ratio was analysed using natural log transformed data due to non-normality of data, then second test procedure analysed using unit root test Levin, Lin and Chu (1994) then proceed with third test for poolability of the data which naturally arises with panel data, using Breusch and Pagan Langrangian Multiplier Test (BP-LM). The findings suggested that he null hypotheses was failed to reject, thus data can cannot be pooled lead to the fourth procedure using static panel data analysis on Pooled OLS (POLS) multiple linear regression applied to panel data to run each individual time observation as one equation through the Stata Software analysis. Then last procedure diagnostic check analysis using Pooled for Robustness and Pooled for Heteroscedasticity Autocorrelation Consistent (HAC) to overcome autocorrelation or serial correlation problem and heteroskedasticity in the error terms in the model where the cross-sectional units may be varying size as a result may exhibit different variations.

Almost all the scholars of Maqasid Shariah studies (Mohamed and Razak, 2008; Shaukat and Ferozkan, 2017) used the Maqasid framework and Sekaran's concept of operationalization, as for this study the Maqasid based performance ratio only measured using two objectives of Islamic banking operationalization namely establishing justice and public interest due to limitation of data, thus this study measured Maqasid using objective 2 (O2) and 3 (O3) only. O2 is Establishing Justice segregated to three dimensions namely Fair dealings with measured using element of Fair Returns (FR), Affordable product and services measured using element of Affordable Price (AP), then Elimination of injustices measured using Interest Free Product (IFP). Whereas for O3 is Public Interest segregated to three dimensions as well namely Profitability measured using Profit Ratio (PR), redistributions of income measured using Personal Income (PI) and wealth and investment vital real sector measured by Investment Ratio (IR) in real sector. Then each elements further determined accordingly based on FR measured by Net Income/Risk Weighted Asset (NI/RWA), AP by Non-performing loans/ Gross Loans (NPL/GL), IFP measured by Interest free income/Total Income (IFI/TI), PR measured by Net profit/Total Asset (NP/TA), PI measured by Zakat/Net Income (ZT/NI) and IR measured by Short term funding/Total assets (STF/TA). Then the dependent variable (MSR) measured using weighted of each elements, dimensions and ratio according to this formula:

Step 1: O2 = 0.3FR + 0.32FP + 0.38IFP
Step 2: O3 = 0.33BPR+ 0.3PIT +0.37IR
Step 3: MSR = 0.41O2 + 0.29O3

The independents variable includes Profitability ratio determined by using the Cost to income (C/IN) that measured by cost/total income, return on equity (ROE) measured using Profit after tax/ equity capital, whereas the Return on asset (ROA) measured using Profit after tax/ total asset. While, the liquidity ratio will be measured using Net Loans / Total Deposit & Borrowing (NL/D&B) and Loan deposit ratio (L/D). As for the risk and solvency ratio determined using Impaired Loans (NPLs) / Gross Loans (NPL/GL), the Equity / Total Assets (E/TA), the Net Loans / Total Assets (NL/TA) and the Equity / Liabilities (E/L).

The null hypotheses develop for this study is if there is no significant relationship between IB performances and Maqasid shariah ratio and the alternate hypotheses is if there is significant relationship between IB performance and Maqasid Shariah ratio. Therefore, the general estimation model and specific estimation model for this study as follow:

General Model:

$$MSR_{it} = \alpha_i + \beta_1 P_{it} + \beta_2 L_{it} + \beta_3 RS_{it} + \varepsilon_{it}$$

Specific Model step 1: Pooled OLS

$$MSR_{it} = \alpha_i + \beta_1 P1_{it} + \beta_2 P2_{it} + \beta_3 P3_{it} + \beta_4 L1_{it} + \beta_5 L2_{it} + \beta_6 LR1_{it} + \beta_7 R3_{it} + \varepsilon_{it}$$

Specific Model step 2: Pooled Robustness

$$LnMSR_{it} = -\alpha_i - \beta_1 CIN_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} - \beta_4 LnNLDB_{it} + \beta_5 LD_{it} + \beta_6 LnNPLGL_{it} - \beta_7 ETA_{it} + \varepsilon_{it}$$

**4.0 Findings**

Table I represent the results on descriptive statistics. The maximum ratio for MSR shows 14.81% out of 70% used for measurement with the mean value of 8.52%. This show lower score on MSR indicate lack of delivering the objectives of Maqasid Shariah in IBs performances. However, this may due small sample size and the factors due to only 2 out of 3 objectives of MSR being used. The normality and equality of data was analysed and determined using skewness and kurtosis. MSR, NL/DB, NPL/GL and NL/TA value was not normal, thus the ratio was natural log transformed before proceeds with the second test procedure for panel unit root test using Levin, Lin and Chu (1994), all the variables shows p-value is less than 0.05 thus the null hypothesis was rejected where the data was stationary means no unit root problem except for C/IN, E/TA and E/L which was failed to reject null thus there was a unit root problem due to data inconsistency.

Table I: Result on Descriptive Statistics

| Variables | Min | Max | Mean | Std Dev | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| MSR | 0.0531 | 0.1481 | 0.0852 | 0.0241 | 0.9053 | 3.6081 |
| *C/IN* | 0.399 | 0.608 | 0.5306 | 0.0558 | -0.5734 | 2.5545 |
| ROE | 4.458 | 18.051 | 11.0275 | 3.6167 | 0.0102 | 2.0257 |
| ROA | 0.531 | 1.434 | 0.954 | 0.2660 | 0.0754 | 2.0039 |
| NL/DB | 0.1257 | 4.1468 | 0.9149 | 0.8217 | 3.1411 | 12.3383 |
| L/D | 0.0008 | 0.1 | 0.0324 | 0.0277 | 0.9706 | 3.0425 |
| NPL/GL | 0.0127 | 0.3953 | 0.0945 | 0.0946 | 1.8892 | 6.2583 |
| *E/L* | 0.0011 | 0.1443 | 0.0971 | 0.0366 | -0.9130 | 3.2498 |
| NL/TA | 0.1021 | 0.6917 | 0.5553 | 0.1658 | -1.9291 | 5.4933 |
| *E/TA* | 0.0095 | 0.126 | 0.0873 | 0.0309 | -0.9723 | 3.2961 |
| No. of observation = 32 | | | | | | |

The third test procedure using BPLM to test for poolability test resulted BPLM more than 0.05 for the analysis, thus failed to reject the null hypotheses. Therefore, the result indicates that data for cross sectional and time series cannot be pooled due to heteroskedasticity present. Thus, lead to the fourth test procedure using panel data analysis on Pooled Ordinary Least Square (POLS) multiple linear regression. Table II represent the result on Panel Data multiple linear regression analysis using POLS, the mean variance inflation factor is 3.56 after two independent variables (EL) and (NLTA) with highest VIF being

omitted. Then the diagnostic check using Pooled Robust regression and Pooled Heteroscedasticity Auto Correlation Consistent (HAC) to overcome the present of heteroscedasticity problem.

Table II: Result on Panel Data Multiple Linear Regression Analysis for Pooled Ordinary Least Square, Robustness, Heteroscedasticity Auto Correlation (HAC).

| Beta Variables: β | Pooled OLS | Pooled Robustness | Pooled HAC |
|---|---|---|---|
| α = Constant | -2.101 | -2.680 | -2.680 |
| T-stat | 3.18 | -4.93 | -6.09 |
| P-value | (0.004) *** | (0.000) *** | (0.009) *** |
| Std. Error/ (Robust Std. Err) | 0.660 | (0.543) | (0.440) |
| B1P1= Profitability: C/IN | -0.602 | -0.725 | -0.725 |
| T-stat | -0.67 | -0.96 | -0.80 |
| P-value | 0.507 | 0.345 | 0.483 |
| Std. Error/ (Robust Std. Err) | 0.892 | (0.752) | (0.909) |
| B2P2= Profitability: ROA | -0.594 | -0.350 | -0.350 |
| T-stat | -2.00 | -1.43 | -1.14 |
| P-value | (0.058) * | 0.166 | 0.335 |
| Std. Error/ (Robust Std. Err) | 0.296 | (0.245) | (0.306) |
| B3P3= Profitability: ROE | 0.0577 | 0.0484 | 0.0484 |
| T-stat | 3.21 | 3.32 | 3.07 |
| P-value | (0.004) *** | (0.003) *** | (0.054) ** |
| Std. Error/ (Robust Std. Err) | 0.018 | (0.0146) | (0.0158) |
| B4LnL1= Liquidity: Ln NL/DB | -0.342 | -0.209 | -0.209 |
| T-stat | -2.72 | -3.41 | -4.31 |
| P-value | (0.013) ** | (0.002) *** | (0.023) ** |
| Std. Error/ (Robust Std. Err) | 0.126 | (0.0614) | (0.0485) |
| B5L2= Liquidity: L/D | 5.713 | 5.731 | 5.731 |
| T-stat | 3.26 | 3.62 | 3.45 |
| P-value | (0.004) *** | (0.001) ** | (0.041) ** |
| Std. Error/ (Robust Std. Err) | 1.755 | (1.585) | (1.663) |
| B6LnRS1= Risk & Solvency: Ln NPL/GL | 0.0929 | -0.0323 | -0.0323 |
| T-stat | 1.00 | -0.62 | -0.73 |
| P-value | 0.327 | 0.541 | 0.520 |
| Std. Error/ (Robust Std. Err) | 0.0928 | (0.052) | 0.0445 |
| B7RS2= Risk & Solvency: E/ TA | 41.24 | 0.253 | 0.253 |
| T-stat | 1.41 | 0.14 | 0.29 |
| P-value | 0.172 | 0.887 | 0.789 |
| Std. Error/ (Robust Std. Err) | 29.19 | (1.764) | (0.866) |
| B8RS3= Risk & Solvency: E/L | -36.70 | | |
| T-stat | -1.42 | | |
| P-value | 0.169 | Omitted | |
| Std. Error/ (Robust Std. Err) | 25.83 | | |
| B9RS3= Risk & Solvency: Ln NL/TA | 0.332 | | |
| T-stat | 1.71 | | |
| P-value | 0.102 | Omitted | |
| Std. Error/ (Robust Std. Err) | 0.195 | | |
| F-stat | 7.68 | 16.99 | |
| P-value | (0.000) *** | (0.000) *** | - |
| Observations | 32 | 32 | 32 |
| R-squared ($R^2$) | 0.759 | 0.720 | 0.720 |

Note: Confidence level significance represent by "*** "at 99% level; "**" at 95% level and "*" at 90% level. Symbol "- "indicates not related test for the model.

The POLS analysis result with p-value significant at 99% level, shows (ROE) and (LD) have positive significant influence on MSR. Whereas, NLDB and ROA have negative significant influence on MSR at

95% level and 90% level respectively. The p-value for the F-test (7.68) of overall significance test using POLS is less than 0.05, thus the null-hypotheses was rejected, and this model provides a better fit than interception model only. The $R^2$ recorded at 75.9% indicates the ability of all independent variables for this POLS regression model to explain the dependent variable (MSR). As for the Pooled Robustness analysis, the result shows that (ROE) and (LD) have positive significant influence on MSR with p-value significant at 99% level and 90% level respectively. Whereas, NLDB have negative significant influence on MSR at 95% level. The p-value for the F-test (16.99) of overall significance test using Pooled Robustness regression is less than 0.05, thus the null-hypotheses was rejected, and this model provides a better fit than interception model only. The $R^2$ recorded at 72% indicates the ability of all independent variables for this pooled robust regression model to explain the dependent variable (MSR). For the the Pooled HAC analysis, result shows that (ROE) and (LD) have positive significant influence on MSR with p-value significant at 95% level. Whereas, NLDB have negative impact on MSR at 95% significant level. The $R^2$ recorded at 72% indicates the ability of all independent variables for this pooled HAC regression model to explain the dependent variable (MSR).

Thus, the regression model for this study is based on Pooled Robustness where, $LnMSR_{it} = - \alpha_i - \beta_1 CIN_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} - \beta_4 LnNLDB_{it} + \beta_5 LD_{it} + \beta_6 LnNPLGL_{it} - \beta_7 ETA_{it} + \varepsilon_{it}$. Then next step to proceeds with the correlation among the dependent variable and independent variables as shown in Table III. The result of correlation for the Pooled Robustness Multiple Linear Regression Model shows the expected results, where all the independent variables show positive correlation with the dependent variable (MSR) except for Profitability (C/IN), Liquidity (NLDB) and Risk and Solvency (E/TA) which shows negative correlation where the variables are expected to be lower for better performance indicators (Tripe, 2014).

Table III: Correlation between variables

| Variables | MSR | C/IN | ROA | ROE | LnNLDB | LD | LnNPLGL | ETA |
|---|---|---|---|---|---|---|---|---|
| LnMSR | 1.000 | - | - | - | - | - | - | - |
| C/IN | -0.083 | 1.000 | - | - | - | - | - | - |
| ROA | 0.198 | -0.584 | 1.000 | - | - | - | - | - |
| ROE | 0.516 | -0.430 | 0.629 | 1.000 | - | - | - | - |
| LnNLDB | -0.451 | -0.434 | 0.130 | -0.057 | 1.000 | - | - | - |
| LD | 0.364 | -0.204 | 0.311 | 0.002 | 0.166 | 1.000 | - | - |
| LnNPLGL | 0.013 | -0.192 | 0.579 | -0.041 | -0.041 | 0.489 | 1.000 | - |
| ETA | -0.532 | 0.155 | 0.093 | -0.460 | 0.301 | 0.021 | 0.513 | 1.000 |

**5.0 Conclusion and recommendations.**

In brief, as the objective of this study to determine the impact and relationship between Maqasid Shariah Performance ratio with the establish common conventional performance ratio. Thus, all things considered the result is achieved as expected result where it shows the positive impact and correlation among the MSR and financial performance indicators used as elements in Profitability, Liquidity and Risk and Solvency except for one element of Profitability (C/IN) and one element of Liquidity (NLDB) which the results shows negative correlation with MSR. Where, the C/IN, NLDB and ETA are expected to be lower to assess the better performances of IBs in terms of efficiency, liquidity and solvency.

The result of this study expected to assist the users to make a good decision especially for decision on investment in Islamic products or services. Having said that, this study used only small sample size which is only 4 Malaysian IB out of 16 listed IB for period of 2011 until 2018 due to limitation of the availability of data from financial statement in the annual report, thus it was suggested to use all the population as well as to extent the study for IB and IFI in Asian or global since IF growing so fast in other country includes in Europe. Another limitation of this study is the measurement of MSR only includes 70% of the elements of Maqasid Shariah ratio. Thus, for future research the other elements, factors and independent variables needs to be take into consideration such as capital adequacy, asset quality, efficiency using another method of analysis such as CAMEL, TOPSIS or Value Based Intermediation.

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# Board gender diversity and firm's performance in Malaysia: Does it matter?

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**Key words**
Gender diversity, Firm performance, Tobin's Q, ROA, ROE, Corporate governance

**Abstract**

*There is a growing body of literature that recognises the importance of women's inclusion in a global context with respect to issues of board gender diversity and firm performance. The identification of positive firm-performance outcomes associated with a higher percentage of women in corporate boards is likely to influence employer's willingness to adopt programmes and policies that develop and retain women who aspire for management positions. Backed by corporate governance, there has been a pivotal trend which has led to women holding board positions, but most boardrooms are still made up of male directors. The inconsistent findings of past gender diversity research demand a research framework that could address the requirement for gender diversity on corporate board. The current study aims to investigate companies listed on Stock Exchange in Malaysia. Data was gathered from listed companies in Malaysia Stock Exchange from the year 2011 to 2017 and were analysed using panel data analysis. The historical cost accounting approach and the future market approach using ROA, ROE and Tobin's Q were applied in this study. The study offers important insights into the requirement policy for gender diversity and serves as a new platform of gender diversity research in Malaysian corporates board.*

## Introduction

Corporate governance is a system of rules, for companies to follow in order to ensure that a fair and transparent business process is adhered to. In recent years, corporate governance issues have received considerable critical attention. According to Zinkin (2010), corporate governance matters because investors are vulnerable to conflicts of interests between management and the board, and decision-maker incompetence. Therefore, board composition and structure are crucial in establishing good corporate governance as the board's primary responsibility is to determine the organization's purpose and it is the responsibility of the management to deliver this purpose. The importance of gender diversity in board structure has been said to have an influence in the economic and social performances of companies. Schwab et al. (2016) have revealed that positive firm-performance outcomes has been associated with a higher percentage of women in management positions and therefore would likely give rise to the tendency of employer's willingness to adopt measures that can result in women playing important roles in corporate boards.

The progress of female representation study on corporate board has been pressing and critical to economic challenges. Carter et al (2003) reported that firm value amongst Fortune 1000 firms have a positive relationship involving the minority female representation on company boards and firm performance as measured by Tobin's Q. Previous study in Spain by Carter, D'Souza, Simkins and Simpson (2010) reported that the positive impact of gender diversity on corporate board has led researchers to investigate the relationship between level of diversity and firm performance. Clearly, there are grounds for certain optimism in supporting good corporate governance in relation to gender diversity and firm performance. However, this does not mean what works in the Western countries should be adopted entirely by the Asian region. For example, a research of gender diversity in the Asian context, Marimuthu and Kolandaisamy (2009) found insignificant relationship between board gender diversity and firm performance using ROA and ROE over the 2000-2006 period. The structural and cultural conditions of each segments must be considered. The rich cultural diversity together with social and

political context in which businesses in the Asian region operate makes implementing good corporate governance more complicated, but not impossible.

It is often said that the coming decades will be the age for Asian businesses. 'If our companies are to thrive, board diversity must become a centerpiece of our game plan' (Deloitte 2016). The selection on Asian countries against Western countries in the same sphere is important as there are minimum studies carried out in Asian context. Furthermore, the corporate governance adoption in Asian countries are new as compared to the Western countries. Malaysia has been selected because it represents the Asian region well in terms of cultural diversity, which serves as the main avenue for such study to be conducted.

To that extent, this study aims to seek a new body of knowledge in the scope of gender diversity in Malaysian corporate boards and to understand the relationship between gender diversity and firm performances.

**Literature Reviews and Theory**

Literature in corporate governance has offered contradictory findings on the link between gender diversity and firm performance. Low, Roberts, and Whiting (2015) in their articles confirmed that high numbers of women seated on the board has contributed to the strong relationship between gender diversity and firm performance. However, they argued that further imposition of law by the government will degrade the value of the firm. This is since gender diversity is taken as tokenism. This is for countries where cultural resistance is very strong against women equality. Reguera-Alvarado, de Fuentes, and Laffarga (2017) extended the examination on the relationship between board gender diversity and economic results in Spain: the second country in the world to legally require gender quotas in boardrooms. As a result of that, they discovered that the firm performance has improved and that can only be justified by way of a mandatory law in a country. Spain has imposed a 40% gender quota on its listed companies since 2011, even though it is a country where women were least heard of. Darmadi and Darmadi (2013) on the other hand found that there was a negative impact on firm performance relationship with gender diversity, speculating familial relationship in Indonesia. This is one of the main differences between Asian and Western cultures, whereby Asian companies tend to have traditional appointment within its own family circle to ensure concentrated ownership. This is necessary as the founder of the listed companies do not want to dilute the control of their hard-earned efforts to outsiders as they know their business better. Therefore, the boardroom reality is different in the Asian context. Appointment of women to sit on their corporate board is usually tightly controlled to those who have close family ties with founding members of the company.

Many previous studies by the likes of Campbell and Mínguez-Vera (2008); Bonn, Yoshikawa and Phan (2004); Carter et al. (2003); and Erhardt et al. (2003) suggest that an increase in the number of women in boardrooms produces an important improvement of the company's economic results. In contrast, there is another stream of research that finds a negative relationship between the number of female corporate board memberships and firm performance e.g., Carter et al. (2010); Adams and Ferreira (2009); Pelled et al. (1999); Shrader et al. (1997) and some articles found no relationship between the two variables e.g Rose and Rose (2007) and Zahra and Pearce (1989). Nevertheless, according to the arguments of Joecks, Pull and Vetter (2013) a relationship between the two variables may be affected by the high or low number of women on corporate boards which invalidates their results.

The connection between good governance, gender diversity and firm performance has a long history in the literature see Post and Byron (2015); Gallego, García and Rodríguez (2010); Adams and Ferreira (2009), Campbell and Mínguez-Vera (2008), Jackling and Johl (2009); Siciliano (1996). According to agency theory, boards are "information systems" that principals use to verify agent behaviour (Eisenhardt and Eisenhardt, 1989); (Hillman and Dalziel 2003). Agency theory argues that the role of a firm's board of directors was to serve as a mechanism to monitor managers. As representatives of owners (principals) corporate boards were tasked with resolving agency issues by monitoring managers (agents) to ensure these managers act in the owners' interests. The composition of boards of directors has been extensively analysed, often from the agency perspective and frequently focused on independence of its board members. In fact, one of the main goals of prior research has been to establish links between board characteristics and firm performance. In this agency framework relationship, the role of the board is to ensure there is no conflict between the shareholders' objectives in creating value of the firm against the management's intention for higher compensation. Hence, gender diversity on corporate board will result

in the agency cost being reduced as a diverse board will constructively allow the positions taken by the management to be examined from a perspective that does not reflect vested interest, thus raises the firm performance.

In addition to the variables associated with the presence of women in the boardroom, several control variables are included in this study following the recommendation of Campbell and Minguez-Vera (2008) and the research design of prior studies e.g. Haniffa and Hudaib (2006). First, we control the firm size throughout the variable lnAssets, which is calculated as the natural logarithm of total assets. Second, following Adams and Ferreira (2009), we introduce the natural logarithm of revenue (lnRevenue) and common equity (lnC-equity).

**Methodology**

*Data and Sampling procedure*

The study is quantitative in nature and secondary data will be primarily used. The advantage of secondary data is access to international and cross-historical data and that it is less resource-intensive to collect compared to primary data. Secondary data is also considered to have a higher reliability.

For the purpose of this study, a sample of 9 nonfinancial firms and 63 observations were selected for the estimation process. The identities of directors were obtained from the firms' annual reports. From these reports, the number of board members was calculated. Accounting data, such as the book value of total assets, total revenue, number of shares and share prices were also obtained from stock price website. We use Tobin's Q as a proxy of firm value to measure the firm's financial performance. Tobin's Q is calculated using the sum of the market value of stock and the book value of debt divided by the book value of total assets. The sample were obtained from non-financial public listed companies listed on Malaysian stock market, a method adopted empirically from Lee-kuen, Sok-gee, and Zainudin (2017).

Data were collected from well-known financial resources and databases, such as Bursa Malaysia's website. The data regarding corporate boards were manually collected by from each firm's annual reports, and, since public firms have external requirements from authorities, the data is objective. There are observable differences between large cap, mid cap and small cap firms regarding gender diversity on the boards as well as firm characteristics. For these firms, data pertaining to board gender diversity were gathered through firms' annual reports.

For this study purpose, the decision to only include large cap firms in the consumers products industry will be made. Additionally, financial firms and insurance companies have been omitted from the sample in accordance with previous research Campbell and Minguez-Vera (2008). The reason behind is that the financial measurements examined would be incorrect if financial firms were compared to non-financial firms since the capital structure to a large extent differ.

Listed companies' sample to be examined in this study consists of firm-year observations from 2011 to 2017. The chosen time period is also of interest as it provides insight to the reactions from the external environment on the increasing focus of gender diversity on boards by the government of Malaysia since its maiden announcement in Budget 2011 to introduce a 30% target on corporate board to drive the diversity agenda. This length of time will provide insight as to whether a gender-diverse board has a positive effect on a firm's performance. The seven-year period will show evidence as to whether there have been structural challenges for firms due to the push for diversity, and if the results have been positive or negative following this.

*Measures and Instruments*

The current study employed Tobin's Q because it reflects the market's expectation of the firm's competitive advantage. Unlike accounting data that reflects only past performance, Tobin's Q is more forward looking and portrays a firm's future prospect, given the superiority of managerial control. The ROA is another measure of performance, which is computed by dividing profit before interest and taxes by the firm's total assets. These two measures have been extensively used in prior research studies that investigate the association between board diversity and firm performance (e.g. Shrader et al. 1997; Erhardt et al. 2003; Rose 2007; Adams and Ferreira 2009). In fact, these measures, especially the ROA, are often used by financial analysts and market when assessing a firm's performance (Erhardt et al. 2003). The third model is using the ROE, another accounting measure of performance, which is computed by dividing profit before interest and taxes by the firm's total equity.

To examine the relationship between gender diversity and firm performance,the following model is adopted from Labelle, Francoeur, and Lakhal (2015) to determine the relationship between board gender diversity and firm performance.

Where Performance = performance of firm i measured by:

Model 1 – Return on Assets (ROA);

$$\text{Performance}_{it} = \alpha + \beta_1 \text{Pwomen}_{it} + \beta_2 \text{lnC-equity}_{it} + \beta_3 \text{lnRevenue}_{it} + \in_{it}$$

Model 2 – Return on Equity (ROE); and

$$\text{Performance}_{it} = \alpha + \beta_1 \text{Pwomen}_{it} + \beta_2 \text{lnAssets}_{it} + \beta_3 \text{lnRevenue}_{it} + \in_{it}$$

Model 3 - Tobin's Q

$$\text{Performance}_{it} = \alpha + \beta_1 \text{Pwomen}_{it} + \beta_2 \text{lnC-equity}_{it} + \beta_3 \text{lnAssets}_{it} + \beta_4 \text{lnRevenue}_{it} + \in_{it}$$

Pwomen represents board gender diversity computed as ratio of the number of women directors to the total number of directors for each firm. $\text{LnC-equity}_{it}$ is the common equity level for firm *i* at time *t*, $\text{lnAssets}_{it}$ is the total assets level for firm *i* at time *t*, and $\text{lnRevenue}_{it}$ is the total revenue level for firm *i* at time *t*, all denotes the firm's size for firm *i* at time *t*.

*Data Analysis*

The current study employed the pooled ordinary least square (POLS) model in conjunction with the fixed effect model (FEM) and the random effect model (REM) for more robust estimations. The Breusch–Pagan Lagrange Multiplier was used to decide the appropriateness of the random effect's estimation over the normal OLS estimation. The rejection of null in the LM test shows the existence of heterogeneity in the variables, meaning that the use of OLS was not ~~be~~ appropriate. Following this, the Hausman test was conducted to identify whether a correlation between unobservable heterogeneity and the explanatory variables exist~~s~~. This test ~~is~~ was used to test the correlation between the unique errors (Ui) and the regressors. The rejection of the null hypothesis favoured the fixed effect model in which unobserved heterogeneity and explanatory variables exist (Campbell & Minguez-Vera, 2008).

This study also employed panel data analysis, a tool used to analyse time series data and cross-sectional data. Data with variations both over time and cross-sectionally is more generalizable and informative compared to time-series data for one entity as there is more observations, more degrees of freedom and higher efficiency (Brooks 2008). Panel data are most useful when we suspect that the outcome variable depends on explanatory variables which are not observable but correlated with the observed explanatory variables. The study may face an endogeneity problem as it is hard to determine cause and effect. On one hand, female directors might affect firm performance positively, and on the other hand, it may be that females choose to be board members in the largest and most profitable firms, i.e past performance influence board diversity.

**Findings and Discussion**

Table 1: *Descriptive statistics*

| Variables | Minimum | Maximum | Standard Deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|
| PWOMEN | n/a | n/a | n/a | 0.4217757 | 1.177895 |
| LnC-Equity | 10.64773 | 13.33568 | 0.734646 | 0.3866823 | 2.492935 |
| LnAssets | 11.24685 | 14.44386 | 0.9759062 | 0.641491 | 1.953173 |
| LnRevenue | 9.892275 | 15.58302 | 1.432739 | 0.6393946 | 2.834284 |
| ROA | -0.391625 | 0.3040878 | 0.1124564 | -0.8666718 | 5.98726 |
| ROE | -0.4916662 | 0.4780919 | 0.1658247 | -0.3562031 | 4.622579 |
| Tobin's Q | -0.052056 | 1.80703 | 0.3249064 | 0.0639568 | 4.374938 |

*Notes:* Tobin's Q (approximation of Tobin's Q), PWOMEN(percentage of women on the board of directors), LnC-Equity (logarithm of the common equity of the firm), LnAssets (logarithm of the book value of the total assets of the firm), LnRevenue(logarithm of the total revenue of the firm), ROA(return on assets), ROE(return on equity)

**Descriptive Statistics**

The sample for the study consists of 9 listed firms selected for the periods from 2011 to 2017. Annual data was collected from over this 7-year period; hence, it translates to 63 observations. Table 1 provides the descriptive statistics used in this study. The table depicts the minimum and the maximum value of each variable and standard deviation. The dependent variables are ROA, ROE and Tobin's Q, and each of these dependent variables is regressed toward its explanatory variables

The statistical characteristics for the tested variables are summarised in Table 1. Descriptive Statistics of variable indicates ROE minimum is -49.17 % and maximum of 47.81 %. ROA maximum of 30.41 % and minimum of -39.16%. Tobin's Q maximum of 1.81 times and minimum of -0.05 times. LnAssets ranging from 11.25% to 14.44 %. LnC-equity ranging from 10.65% to 13.34%. Lastly, LnRevenue of the firms selected ranging from 9.89%to 15.58%.

Table 2: *Results for women director on firm's performance*

| | Dependent Variables | | |
|---|---|---|---|
| Variable | Model 1 | Model 2 | Model 3 |
| Constant | | | |
| β | -2.140 | -0.5627 | -0.2406 |
| z- value | t = -3.62 | -0.92 | -0.20 |
| p value | (0.0001) *** | (0.358) | (0.845) |
| PWOMEN | | | |
| β | 0.0542 | 0.0453 | 0.0267 |
| z- value | 2.11 | 1.04 | 0.28 |
| p value | (0.004) *** | (0.296) | (0.779) |
| LnC-Equity | | | |
| β | 0.1238 | n/a | -0.3634 |
| z- value | 2.93 | | -2.86 |
| p value | (0.005) *** | | (0.004) *** |
| LnAssets | | | |
| β | | -0.2204 | 0.4641 |
| z- value | n/a | -2.78 | 2.75 |
| p value | | (0.005) *** | (0.006) *** |
| LnRevenue | | | |
| β | 0.1958 | 0.1928 | -0.0341 |
| z- value | 5.47 | 4.12 | -0.35 |
| p value | (0.001) *** | (0.0001) *** | (0.726) |
| Model fit | | | |
| R-squared | 0.1426 | 0.3177 | 0.2015 |
| BP-LM Test | 70.22 | 39.21 | 25.38 |
| | (0.00001) *** | (0.0001) *** | (0.0001) *** |
| Hausman test | 11.08 | 4.43 | 3.36 |
| | (0.0257) ** | (0.3512) | (0.4995) |
| Wald Chi Square | n/a | 18.73 | 19.89 |
| | | (0.0009) *** | (0.0005) *** |
| F-Stats | 9.93 | | |
| | (0.00001) *** | n/a | n/a |

*Notes*: *, **, *** Denote significance at the 10%, 5% and 1% levels, respectively. Standard errors are reported in parenthesis. Tobin's Q (sum of market value of common equity and book value of debt divided by book value of total assets), PWOMEN (percentage of women on the board of directors). LnC-

Equity (logarithm of the common equity of the firm). LnAssets (logarithm of the book value of the total assets of the firm). LnRevenue (logarithm of the total revenue of the firm)

Table 2 presents the results from the multiple regression analyses. Model 1,2 & 3 shows the results when female representation on corporate board is treated as a dummy variable. In Model 1, the dependent variable is the firm's performance relationship with the presence of women on corporate board based on accounting measures ie ROA. In Model 2, we are using ROE instead as the accounting measures to the dependent variable. Finally, in Model 3, the dependent variable is the firm's performance relationship with the presence of women on corporate board based on market performance ie Tobin's Q.

Regression analysis indicates that R square is 14.26 %for Model 1, 31.77% for Model 2 and 20.15% for Model 3. Regression analysis for model 1 (ROA) indicates the coefficient for (PWOMEN) is significant at one (1) % level of significance (p=2.11), and (β=0.054). In terms of control variables, the coefficient for (LnC-equity) is significant at one (1) % level of significance (p=2.93), and direction is positive (β=0.1238). Consistently, (LnRevenue) is significant at one (1) % level of significance (p=5.47), and direction is positive (β= 0.1958). The effect of (PWOMEN) on ROE is not significant at conventional level (p=1.04). In terms of control variables, the effect of (LnAssets) on ROE is significant at one (1) % level of significance (p=-2.87). Consistently, (LnRevenue) is significant at one (1) % level of significance (p=4.12), and direction is positive (β= 0.1928). Finally, the effect of (PWOMEN) on Tobin's Q is not significant at conventional level (p=0.28). In terms of control variables, the effect of (LnAssets) on Tobin's Q is significant at one (1) % level of significance (p=2.75). Consistently, (LnC-equity) is significant at one (1) % level of significance (p=-2.86), and direction is negative (β= -0.3634). However, the effect of (LnRevenue) on Tobin's Q is not significant at conventional level (p=-0.35).

In summary, findings indicate that when firm performance is measured using ROA, there is a significant relationship between the presence of women in corporate board and firm performance. However, there is no significant relationship between the two variables when measured using Tobin's Q. These findings suggest that female directors create economic value, but the market discounts their impact. The same applies when there is additional injection of share capital to the firm, as the findings indicate that there is no significant relationship between the presence of women in corporate board and firm performance when measured using ROE. The conflicting results for the three performance indicators are informative of the different ways, by which societal perceptions towards women affect the relationships we studied.

**Conclusion**

Previous studies have concluded that gender diversity in the boardroom affect the financial performance of a firm either significantly, or otherwise. In Asia, it may result in a different scenario as the corporate governance application and acceptance in Asia is not as strong as in Western countries. To determine this, we investigated the effects of gender diversity on firm's financial performance in Malaysia. Unlike previous studies done in Malaysia, this study used the three firm's performance measures ie ROA, ROE and Tobin's Q and nonfinancial firms listed on Bursa Malaysia for the period spanning from 2011 to 2017 on large cap only from the consumers industry section. Using the pooled ordinary least square model, the fixed effect model and the random effect model, we tested the gender diversity presence in the boardroom relationship with firm's performance. We controlled the firm size by controlling the firm's common equity, total assets and total revenue.

Our study found that there is a significant relationship between women presence in corporate board with the firm's performance, as suggested by ROA. This is consistent with the findings reported by Shamsul Nahar and Ku Nor Izah (2013). Representation of women in corporate board of a firm is expected to contribute a different perspective, as well as a more comprehensive decision-making process, which is crucial for firm's strategic manoeuvring of its future long-term performances and sustainability in business. However, based on our results, we failed to find any significant relationship between the presence of women on board and firm performance using Tobin's Q and ROE. Our findings make an important contribution to the theory on the performance consequences of female directors on boards. The conflicting impacts, significantly affecting accounting performance when using ROA and failed to significantly influence market performance and ROE suggests that female directors are subject to a biased evaluation by the market and increase in capital injection, which undervalues their presence on boards. The conflicting results of the two performance indicators speak for the importance of assigning theoretical

meanings to performance indicators and treating them as indicative of different contextual characteristics. In view of the conflicting result, it can be argued that the advantages of having women on corporate board are not reflected in the measure of firm's performance in totality, and as a result, may result in lukewarm acceptance by corporates board members to favour the female appointment in Malaysia. The discrimination of corporate women to be accepted in the corporate board may persist in the corporate governance landscape in Malaysia.

The issue of board diversity, especially gender diversity remains unsettled as the findings are not as expected. Perhaps, gender diversity is best measured by non-financial performance rather than financial performance. Perhaps, women representation on board may be conditional. Hence, one size may not fit all. Thus, future research may need to look at the importance of gender diversity on a different angle, such as perception behaviour of the market on gender diversity. Another limitation of this study is that the results are valid only in Malaysian firms. The study was carried out only on one industry with large cap listed on Bursa Malaysia and cannot be generalized to firms in other industry listed on the same stock exchange. Consistent with the research reported by Joecks, Pull and Vetter (2012), future research may look at firms in other industries with different level of women presence on corporate boards as firms should also consider the value of female directors with reference to the characteristics of the context in which they operate.

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# The empirical analysis of corporate fraud and corporate governance in Malaysia

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**Keywords**
Corporate fraud, Corporate governance

**Abstract**

*Despite many improvements on governance and establishment of new laws and regulations to combat fraud, the numbers of corporate fraud cases continue to rise globally. The significant amount of financial and non-financial losses due to fraud, has led to criticism of the effectiveness of corporate monitoring in fraud prevention and ability of the corporate governance mechanism to maintain the confidence of investors and stakeholders. This study attempts to examine the relationships between corporate governance and corporate fraud. The sample of this study consists companies listed in Bursa Malaysia, focusing on three industries; retail, telecommunication and technology, covering the period from year 2010 to 2017, and the logistic regression were used to analyse the data obtained. This study found that size of the board and CEO age are significantly positively related to the likelihood of corporate fraud.*

## 1.0 Introduction

Corporate fraud issue has received significant critical attention after the high-profile scandals at Enron, Tyco and WorldCom. The Association of Certified Faud Examiners (2018) reported that the total global loss due to fraud is estimated at USD4 trillion in 2017. In Malaysia, the number of organizations that reported losses more that USD1 million due to fraud has increase from 13% in 2016 to 22% in year 2017 (PricewaterhouseCoopers, 2018b). Additionally, the survey by PricewaterhouseCoopers (2018b), further revealed that this issue also cause an adverse social impact on employee morale, relationship with suppliers, customers and regulators, as well as organizations' image and reputation. The need to address this problem is vital as the losses suffered, threaten the wealth of the shareholders and other stakeholders, which affect the stability of the society.

Fama and Jensen (1983) state that the separation of ownership and control in managing a business has raised the issue of conflict between the principal (owner) and agent (manager), which lead to fraudulent activities undertaken by management. The Agency Theory pointed out that the different interest of managers, shareholders and other stakeholders, increase the need to have effective corporate governance to monitor and control the activities of management (Shleifer and Vishny, 1997). Corporate governance has been identified as an important tool and mechanism in the capital market to strengthen the investors' confidence that the business is well managed and continue to prosper. However, despite many improvements on governance and establishment of new laws and regulations to combat corporate fraud, the numbers of corporate fraud cases continue to rise. The PricewaterhouseCoopers (2018) Global Economic Crime and Fraud Survey reported that the number of fraud cases had increase from 36% in 2016 to 49% in 2018 globally. In Malaysia, Omar, Said, and Johari (2016) stated that there is growing concern over the increase in fraud cases. The survey by PricewaterhouseCoopers (2016) highlighted that the increase in the fraud cases in Malaysia is due to the failure of the companies to carry out a fraud risk assessment and fail to assess the risk of evolving corporate fraud that continue to grow overtime. The survey also reported that 90% of Malaysian companies believe that opportunity continue to be the driver of economic crime in their organization.

Previous studies had associated corporate governance with fraud incidences. It is highlighted that poor corporate governance will increase the fraud occurrences in an organization (see Beasley, 1996; Farber, 2005; Persons, 2006). Ramaswamy (2005) also pointed out that the major fraud cases such as Adelphia, Royal Ahold, Enron and Worldcom were attributed from poor corporate governance of these corporations. In addition, Khas (2002) stated that many corporations in Malaysia had failed to survive during the Asian financial crisis in 1997 due to weak corporate governance. Poor corporate governance indicates ineffectiveness in the monitoring and controlling mechanism employed by an organization, which will create an opportunity for its management to commit fraud. (Ismail & Abdelmoniem, 2013;, McInnes & Stevenson, 1997). Past studies have found that board composition have a link with the likelihood of fraud incidences. Among these characteristics are large board size, frequent board meeting and small percentage of independent directors (see Beasley, 1996; Persons, 2006). Besides that, directors' share ownership also can be a contributing factor to fraud occurrences. Beasley (1996) pointed out that having significant ownership in a company is a motivational factor to fraud. It is also noted that the duality role of CEO can be a contributing factor to the likelihood of fraud incidences, when he or she serves as a chairperson of the board. This can lead to bias and conflict in decision making process that will motivate the management to practice unethical conduct. The high frequency of board meeting can also be associated with the occurrence of fraud (Shan, Graves, & Ali, 2013). This could be due to the urgency of the need to have important discussion that may involve illegal or questionable management activities. The age of the CEO is also believed to be another factor that can contribute to fraud. According to Xu, Zhang, and Chen (2017), older CEO is less likely to engage in fraudulent activities because they are often more experience and more to lose if they fail to carry out their monitoring duty. Malaysian Code of Corporate Governance (MCCG) recommended that the compensation of CEO and directors should be appreciable and reflect the responsibility and commitment to an organization. If the CEO is not well paid, there may be a tendency for them to conduct unethical behaviour at the expense of shareholders (Albrecht, Albrecht, & Albrecht, 2008). Therefore, these assertions suggest that weak corporate governance structure and design are the possible factors that contribute to the fraud occurrence.

Shan, Graves and Ali (2013) pointed that, there has been a little attention of study into the corporate governance effectiveness in developing countries. The unique environment, regulations and economic policies especially in Malaysian context may provide different findings. The models, characteristics and variables that were significant in the studies conducted in other countries might not be significant in Malaysian context. Studying these characteristics in this country is vital as the findings could shed some light on effectiveness of corporate governance characteristics that will reduce the likelihood of corporate fraud. Therefore, in relation to this issue, this study aims to examine the relationship between corporate governance and the likelihood of corporate fraud in Malaysia. The result of this study may assist top management and managers of companies to effectively design their corporate governance structure and hence strengthen the confidence of current and future investors. Additionally, it will also assist the shareholders and other stakeholders to understand the red flag of corporate fraud and help them minimize the fraud losses.

**2.0 Literature Review**

The Chartered Institute of Management Accountant (2009) defines corporate fraud as an act that involves deception to other parties to make a personal gain for oneself dishonesty conducted to gain advantages of others. Fraud happens in situations in which conditions are right for it to happen. According to Fraud Triangle Theory, fraudulent behaviour can be influenced by perceived opportunity, perceived pressure and perceived rationalization. Weak corporate governance is seen as perceived opportunity that may permit an individual or group of people to commit fraudulent activities. Ineffective monitoring due to poor directorship and CEO domination often related to the inability of the board to provide effective control over the management activities (Farber, 2005). Perceived pressure can be related to the desire of the management or manager to increase the firm's performance or the requirement to meet the high target of the company (Albrecht et al., 2008). This could be exacerbated when incentive, bonus or compensation is tied up with the management performance. Management may pursue unethical conduct to meet the expectation by market analysts or to ensure they will receive the incentive or bonus and receive significant increase in their compensation. According to Rae and Subramaniam (2008), perceived rationalization is a justification of fraudulent behaviour due to the lack of personal integrity or poor moral

reasoning. In the event where perceived pressure (compensation structure) increase, coupled with high perceived opportunity (weak corporate governance), rationalizing fraudulent acts are made easier. Companies easily resort to desperate measures such as misrepresentation of financial statement, asset misappropriation, payment or acceptance of bribes and, or falsification of documents.

The board of directors provides a significant corporate governance mechanism as it plays an important role in providing proper guidance and overseeing the conduct of the business. According to John and Senbet (1998), board effectiveness in its monitoring function is determined by size, independence and composition. Jensen and Meckling (1976) stated that smaller board of directors are more effective than larger board size. Earlier studies by Lipton and Lorsch (1992) and Jensen (1993) found that larger board of directors is less efficient in monitoring activities. Accordingly, large board size will decrease the effectiveness in communication and decision-making process. Additionally, Yermack (1996), Huther (2002) and Eisenberga, Sundgren, and Wells (1998), stated that a small number of board of directors produces better financial performance and more effective in enhancing the firm's value. These findings suggest that larger board size indicate weak board structures that may encourage opportunity for fraud to happen. However, prior studies also documented that board size has no significant relationship with corporate fraud incidences (see Shan et al., 2013; Ainul, Wan, Razali, & Arshad, 2014).

Independent board of directors also play a crucial role in monitoring unethical behaviour of the management. Past literature has documented that a higher percentage of independent directors provides better monitoring role and better decision control (Jensen, 1993) as well as reduce the likelihood financial statement fraud (Beasley, 1996; Ainul et al., 2014). However, a study by Shan et al. (2013) found no significant association between board independence and corporate fraud.

The MCCG (2017) suggests that the board of directors should meet regularly in order to discuss issues regarding the corporate activities. However, Vafeas (1999) argue that frequent meetings only lead to poor performance of a company. Frequent board meeting also found to be positively associated with the likelihood of fraud (Shan et al., 2013; Salleh & Othman, 2016; Zhou, Zhang, Yang, Su, & An, 2018). According to Shan et al. (2013) The frequent board meeting reflects there is a high probability of fraud occurrence that force the members to have discussion that related to illegal or questionable activities.

The duality role of CEO suggests a possibility of conflict of interest in decision making process (Fama and Jensen, 1983). In relation to this, the MCCG best practice proposes that there must be a balance on power and authority between the CEO and chairman to avoid bias decisions. In Malaysia, previous studies that investigate the relationship between board duality and corporate fraud is yet to provide substantial empirical findings. For example Shan et al. (2013) and Salleh and Othman (2016) found no significant influence between board duality and corporate fraud.

According to Xu et al. (2017), older CEO is less likely to engage in corporate fraud activities because they are often more experience and more to lose if they fail to carry out their monitoring duty. This is because the longer exposure to traditional culture and customs usually forester them to have a tendency to be make ethical decisions (Mudrack, 2011) and more likely to recognize moral issues and good moral reasoning (Singhapakdi, Vitell, & Kraft, 1996), thus improve the decision-making quality of the company. On the contrary, Wang and Demers (2010), argued that younger CEO is likely to engage in earnings management because they are less aware of the opportunity and benefit of doing so.

Directors having a large interest in a company would decrease the problem of agency cost (Jensen, 1993). This is because, normally, managers that have shares in a company will not put the company at risk of fraud; therefore, there will be a reduction in the likelihood of corporate fraud. However, Beasley (1996) and Persons (2006) revealed that high managerial ownership did not reduce the likelihood of fraudulent activities. Additionally, Sen (2007) also pointed out that an increase in the share ownership may not contribute in reduction of unethical activities.

MCCG recommended that the compensation of directors should be appreciable and should reflect the responsibility and commitment of the board membership. If the directors are not well paid, there may be a tendency for them to conduct unethical behaviour at the expense of the shareholders. Meanwhile, if the compensation is excessive, the directors may lose their independence (Dah and Frye, 2017), which subsequently lead them to engage in fraudulent activities (Zhou et al., 2018). Equity-based compensation is generally believed to better align the interest of managers and shareholders (Jensen & Meckling, 1976).

However, in certain circumstances it may also motivate management to engage in fraudulent activities for personal gain (Bar-Gill & Bebchuk, 2002). Many empirical studies reveal that strong equity incentives of top management may cause accounting irregularities or fraud (Bergstresser & Philippon, 2006; Denis & McConnell, 2002; Harris & Bromiley, 2007). However, study like Armstrong, Jagolinzer, and Larcker (2010) shows that accounting manipulation is less likely in firms where CEO have high equity incentives. Meanwhile, Erickson, Hanlon, and Maydew (2006) documented no evidence that equity incentives are associated with fraud. The paucity of study that examines the relationship between in director's compensation and fraud in Malaysia has motivated this study to conduct the analysis.

**3.0 Methodology**

Data of this study were collected from the annual reports of companies listed in Bursa Malaysia from three industries, namely, retail, telecommunication and technology. According to Dechow, Ge, Larson and Sloan (2011) these three industries are known to be prone to conduct fraud activities such as overstatement of sales to meet optimistic business target, shipping goods without authorization and manipulated reserve for restructuring purposes. The period of analysis covered from year 2010 to year 2017. The sample of companies was selected based on the availability of the data. All companies must have a complete set of data for each year under this study. Thus, companies with incomplete data will be excluded.

The extent of potential fraudulent companies was measured using Beneish M-score Model. This model has been developed by Beneish (1997, 1999) to distinguish between earnings manipulators who violates accounting rules from non-manipulators. As pointed out by Ezrein, Md Salleh, and Ahmad (2016), this model is able to detect 82% of the public listed companies prosecuted for fraudulent financial reporting by Securities Commission of Malaysia, hence provide evidence that this model is reliable and capable of identifying potential fraudulent companies listed in Bursa Malaysia. This model uses eight financial ratios to detect financial statement fraud which can be explained in Table 1.

Table 1: Ratio Analyses Used as Beneish M-score

| Ratio | Formula |
|---|---|
| Days Sales in Receivable Index (DSRI) | $(\text{Net Receivable}_t / \text{Sales}_t) / (\text{Net Receivable}_{t-1} / \text{Sales}_{t-1})$ |
| Gross Margin Index (GMI) | $[(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$ |
| Asset Quality Index (AQI) | $[1 - (\text{Current Asset}_t + \text{PPE}_t / \text{Total Asset}_t) / [1 - (\text{Current Asset}_{t-1} + \text{PPE}_{t-1} / \text{Total Asset}_{t-1})$ |
| Sales Growth Index (SGI) | $\text{Sales}_t / \text{Sales}_{t-1}$ |
| Depreciation Index (DEPI) | $[\text{Depreciation}_{t-1} / \text{Depreciation}_{t-1} + \text{PPE}_{t-1}] / [\text{Depreciation}_t / \text{Depreciation}_t + \text{PPE}_t]$ |
| Sales, General and Administrative Index (SGAI) | $\{\text{SGA Expenses}_t / \text{Sales}_t] / [\text{SGA Expenses}_{t-1} / \text{Sales}_{t-1}]$ |
| Total Accruals to Total Asset Index (TATA) | $\text{Total Accruals}_t / \text{Total Assets}_t$ |
| Leverage Index (LEVI) | $[\text{LTD}_t + \text{Current Liabilities}_t / \text{Total Asset}_t) / [\text{LTD}_{t-1} + \text{CL}_{t-1} / \text{Total Asset}_{t-1})$ |

Source: Beneish (1997, 1999)

The eight variables of Beneish Model will be calculated using the following formula:

M= -4.84 + 0.92*DSRI + 0.528*GMI +0.404*AQI + 0.892*SGI + 0.115*DEPI – 0.172*SGAI + 4.679*TATA – 0.327*LVGI

The M score is the figure derived from the model. M-score of less than -2.22 indicates that a company does not manipulate the financial statement in the accounting period. M-score greater than -2.22 signals that the company will likely be a manipulator. These parameters are calculated from data available in company financial reports. Therefore, using this model, the companies that likely manipulate financial statements can be determined. The score of "1" will be given if the companies had red flags indicating that there are possibility of fraudulent financial statements and "0" if otherwise. The measurement of independent variables used in this study is listed in Table 2. To examine the relationship between

corporate governance and corporate fraud, panel logistic regression analysis was employed. The model of the regression is presented as follow:

$$FR_{it} = \alpha + \beta_1 BS_{it} + \beta_2 BIND_{it} + \beta_3 BM_{it} + \beta_4 DUAL_{it} + \beta_5 AGE_{it} + \beta_6 DSO_{it} + \beta_7 COMP_{it} + \varepsilon_{it}$$

Table 2: Measurement of Corporate Governance Variables

| Independent variables | Variable Acronym | Measurement | Sources of data |
|---|---|---|---|
| Board size | BS | The total number of board members | Annual report |
| Number of independent directors in board | BIND | The number of independent directors on the board | Annual report |
| Frequency of Board meeting | BM | The number of board meeting in a year | Annual report |
| CEO duality | DUAL | 1 if dual role and 0 otherwise | Annual report |
| CEO age | AGE | The age of the CEO during that year | Annual report |
| Directors' share Ownership | DSO | Percentage of company shares retained or owned by the directors | Annual report |
| CEO compensation | COMP | Total compensation of CEO, which include cash bonus and equity | Annual report |

**4.0 Findings and Discussions**

Table 3 presents the descriptive statistics of the variables in this study. Since the value of the CEO compensation is not normal, the value was analysed using log-transformed data. The results of unit root test using Levin-Lin-Chu (2002) indicate that all variables are enough at level.

Table 3: Descriptive Statistics

| Variables | Mean | Min | Max | Std. Dev | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| FR | 0.5168 | 0 | 1 | 0.5008 | -0.0673 | 1.0045 |
| BS | 6.9034 | 2 | 12 | 2.0384 | 0.3528 | 2.4868 |
| BIND | 3.5084 | 1 | 7 | 2.1341 | 11.1873 | 154.6611 |
| BM | 5.6681 | 2 | 17 | 2.0071 | 2.4402 | 10.9911 |
| DUAL | 0.21443 | 0 | 1 | 0.4112 | 1.3926 | 2.9394 |
| AGE | 52.0756 | 34 | 78 | 8.3819 | 0.5828 | 3.4659 |
| DSO | 0.2963 | 0.01 | 2.35 | 0.2724 | 2.6379 | 17.3974 |
| COMP | 13.1808 | 7 | 16 | 1.3520 | -0.8746 | 5.8956 |

Number of observations = 238

The result in Table 3 reported that the mean value of the fraud (FR) is 0.5168, this indicate that the sample of companies selected in this study has high likelihood of fraud. The average number of board members in each organization is 7 members as indicated in mean value of BS (6.9034). The mean value of 3.5084 for number of independent boards, indicates that there is about 35% independence board representation in each company. The youngest CEO's age is 34 years old, while the oldest CEO is 78 years old. The mean value of director's share ownership (DSO) is reported at 29%, and the average CEO compensation (COMP) is reported at 13.1808.

The result of the panel logistic regression is presented in Table 4. Referring to the p-value, the number of board members (BS) and board age (AGE) have positive significant influence on corporate fraud. Lipton and Lorsch (1992) and Jensen (1993) also found that larger board size has a positive influence on corporate fraud. The significant positive relationship between CEO age and corporate fraud also reported by Wang and Demers (2010). Thus, it can be concluded that, the large number of board of directors and CEO age increase the likelihood of fraudulent activities.

Table 4: Result on the Panel Regression Analysis

| | Logistic | Regression |
|---|---|---|

| | Pooled OLS | Logistic | Robustness |
|---|---|---|---|
| BS | | | |
| β | 0.0434 | 1.2088 | 1.2089 |
| t-stat | 2.41 | 2.38 | 2.46 |
| p-value | (0.016) ** | (0.017) ** | (0.014) ** |
| BIND | | | |
| β | -0.011 | -0.9356 | -0.9359 |
| t-stat | -0.70 | -0.63 | -1.00 |
| p-value | (0.485) | (0.528) | (0.316) |
| BM | | | |
| β | 0.0092 | 1.0441 | 1.0441 |
| t-stat | 0.56 | 0.60 | 0.66 |
| p-value | (0.573) | (0.545) | (0.511) |
| DUAL | | | |
| β | 0.0126 | 1.051 | 1.051 |
| t-stat | 0.15 | 0.14 | 0.14 |
| p-value | (0.879) | (0.890) | (0.890) |
| AGE | | | |
| β | 0.0137 | 1.0630 | 1.0630 |
| t-stat | 3.44 | 3.32 | 2.99 |
| p-value | (0.001) *** | (0.001) *** | (0.003) *** |
| DSO | | | |
| β | 0.0275 | 1.1353 | 1.1354 |
| t-stat | 0.23 | 0.25 | 0.26 |
| p-value | (0.815) | (0.805) | (0.792) |
| COMP | | | |
| β | 0.0048 | 1.0235 | 1.0235 |
| t-stat | 0.17 | 0.19 | 0.21 |
| p-value | (0.866) | (0.847) | (0.834) |
| Cons | | | |
| β | -0.584 | 0.00842 | 0.0842 |
| t-stat | -1.70 | -3.10 | -3.06 |
| p-value | 0.089* | 0.002*** | 0.002*** |
| BP LM Test | | | |
| p-value | (1.00) | - | - |
| No. of observations | 238 | 238 | 238 |

Note: The value in the parentheses are p-value indicate significant at 99% (***), 95% (**) and 90% (*).

On the other hand, the number of independence directors (BIND), board meeting (BM), CEO duality (DUAL), Director Share ownership (DSO) and CEO compensation (COMP) have p-value more than 0.05, which indicates that the variables have no influence on corporate fraud.

**5.0 Conclusion**

In conclusion, larger number of board of directors will decrease the monitoring effectiveness and indicate weak board structure that may encourage opportunity for fraud to happen in Malaysia. In addition, in Malaysia, younger CEO is less likely involved in fraudulent activities because they are less aware of the benefit and opportunity to do so.

The result of this study would contribute to reduce the knowledge gap on corporate fraud issue. This paper adds valuable insights to the academic, the public companies, auditors and other users of the published annual report as a method to identify red flag. It would assist public companies to effectively design their corporate governance structure and update their monitoring mechanism. Auditors may consider board size and CEO age factors, when evaluating the risk of corporate fraud. This study could also be used as a reference for future research to enhance the formulation of corporate governance policies to minimize corporate fraud.

However, the number of samples used in this study is limited to three industries namely; retail, telecommunication and technology, covering the period of year 2010 to 2017. Future research should be conducted to incorporate other industries and include other variables such as internal audit, external audit and shareholders. In addition, primary data could also be employed to see the variation in the result

as this study uses secondary data. To motivate future researchers to explore this issue, Malaysia should establish an up to date fraud database.

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# Mitigating earnings management: Does Ceo's accounting background Matter?

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**Keywords**
CEO, accounting background, earnings management

**Abstract**

*It was documented that there had been an increase in the preference to hire CEO with accounting background since the introduction of the Sarbanes Oxley Act in 2002 in relation to major corporate collapses due to excessive earnings management that had led to accounting scandals. However, prior studies also suggested that little attention had been paid to address the relationship between the CEOs' accounting backgrounds and earnings management. Thus, this study attempts to determine the said relationship from Malaysian context. Both the governance and financial data of the Malaysia FTSE 30 companies were collected manually from the companies' annual reports. The findings however showed insignificant relationship between CEOs' accounting backgrounds and earnings management but suggested that the composition of independent directors on board and big four audit firms are still the effective corporate governance mechanisms in mitigating the earnings management activity of the company.*

## Introduction

Companies all over the world had been under the scrutiny when it comes to their financial reporting quality ever since the collapse of Enron in year 2000. New acts had been enacted by regulators to ensure earnings reported by companies represent their true performance. Academicians also showed their interest by conducting thorough research in effort to find the most effective corporate governance mechanisms that can lessen the earnings management activities. However, after all the efforts done by both the regulators and academicians, earnings management activities still occur. This can be seen through a finding from Hasan, Omar, Barnes, & Handley-Schachler (2017) which documented that 34% of sample which consists of a total of 2,800 companies, in selected Asian countries are not presenting their financial statements in truthful manner. Thus, shareholders' wealth continues to be eroded as a result from the opportunistic behaviour of the company's management team. This indicates the need for new search in order to look for other potential corporate governance mechanism that can mitigate the earnings management activities. One corporate governance aspect that might be able to reduce the earnings management activities the CEO's accounting background. Therefore, this study attempts to determine the relationship between CEOs' accounting backgrounds and earnings management.

It was documented that there is an upward trend in the preference to hire individual with accounting and finance background after the introduction of the 2002 Sarbanes-Oxley Act (SOX) in response to several corporate accounting scandals that occurred in the 2000–2002 period. Hu (2006) suggested that if directors had hired CEO with more knowledge in accounting or finance fields, may be some of the high-profile frauds which happened during the pre-SOX period might not occurred at all. The trend in hiring individual with accounting background can also be an attempt done by the corporate community to improve the accuracy and reliability of corporate disclosures as urged by the Act (Cullinan & Roush, 2011). As a matter of fact, Fino (2018) documented that about 18% of CEOs at the United Kingdom (UK) FTSE 100 companies have accounting backgrounds. 51% of the CEOs in the same category of company have a background in finance. This encouraging trend support the notion that the preference to hire CEO has changed as this post traditionally was held by CEO with sales or marketing background. In Malaysia, a preliminary content analysis documented the same trend as in the UK was spotted. 12 out of 30 companies at our FTSE 30 have their CEOs with accounting background. In percentage form, it is about 40% from the Malaysia's top 30 companies' CEOs are having accountancy qualifications. Despite

the increasing trend in hiring individual with accounting background, little attention was paid to study empirically the effectiveness of the CEOs' accounting backgrounds to mitigate earnings management (Hu et. al., 2017). They claimed that their study on CEOs' accounting backgrounds and its relation to earnings management was the first of its kind. Thus, the relationship between CEOs with accounting backgrounds and how effective they are in mitigating earnings management still need more empirical supports, hence, the objective of this study. This study is organized into five sections. The current section gives an overall picture of this study. The second section discusses the prior studies relating to the issues as well as the results obtained. The third section discusses the research methodology used. Next, section four discusses the results from this study. Lastly, conclusion and recommendation for future research will be discussed in the final section.

**Literature review**

The major popularity of the application of the agency theory to the relationship between shareholders and the board of directors produced a vast amount of research devoted to this issue. In fact, this phenomenon relates to those cases in which ownership and management are represented by different individuals. Being each individual maximising its utility leads to the existence conflicting positions between the agent and the principal. According to Jensen and Meckling (1976),

*"a conflict is created by the information asymmetry that exists in complex corporate structures between a privileged management (i.e. agent) and a more remote body of stakeholders (i.e. principal)"*

The management team of the company may have all the opportunities to make use of their position for their own benefit, by managing the financial reporting to get the outcome that they have planned. The informational viewpoint assumes that the financial reports provided by the management contained true and fair view of the company's financial condition, thus, assist the stakeholders in making useful economic decisions. Individual investors are not all educated with accounting principles, thus, difficult for them to detect or even notice about the manipulation (if any) in the financial statements. Furthermore, insufficient personal skill set, indifference or an unwillingness to engage in detailed analysis as explained through the mechanistic or naïve investor hypothesis as discussed by Breton and Taffler (1995) will make it even difficult for individual investors to notice about the financial numbers game.

The downfall of the classic case of Enron had prompted a series of new legislation attempts such as the Sarbanes Oxley Act 2002 in the US. This new legislation attempts also available in Malaysia whereby the Securities Commission of Malaysia has established the Malaysian Code on Corporate Governance (MCCG) with the recent amendment on MCCG 2017 to govern the corporate governance practices among Malaysian companies. Apart from attempt by the authoritative bodies, academicians also had shown attempts to search for the internal corporate governance mechanisms which are effective in mitigating the earnings management activities (Moradi, Salehi, & Najari, 2012; R. A. Rahman & Mohamed Ali, 2006). However, despite all the efforts (both by the government and academicians), the news on corporate involved in accounting scandals still being reported by the mainstream media. This implied that efforts should be continued to examine any other internal governance mechanism that can mitigate the earnings management.

CEO with accounting background is more conservative and less likely to engage in earnings management activity (Matsunaga & Yeung, 2008). However, Hu et. al. (2017) found a contradict finding suggesting that when firms faced the pressure to meet the earnings benchmarks, it is possible that CEOs with accounting backgrounds are more likely to overstate earnings and report more positive discretionary accruals because they know how to do it. Therefore, this study attempts to fill in the gap by determining the relationship between CEO's accounting background and earnings management.

This study also includes other established corporate governance variables following the prior studies (i.e. Hu et. al., 2017; Demers and Wang, 2010; Francis, Maydew and Sparks, 1999) that empirically proven to be able to mitigate earnings management. Those variables are the age and gender of the CEO, the presence of women on board, the composition of the independent directors on board and whether the company appoints auditor from the big four audit firm. Other than that, following prior studies (i.e Hu et. al, 2017; Skinner and Sloan, 2002; DeFond and Jiambalvo, 1994), this study also includes other control variables that are found to influence the tendency of the company to engage in earnings management activity. Those control variables are the debt to equity ratio (LEV), capital intensity (CI), return on assets

(ROA) and the company's total revenue (represented by natural log of the company's total revenue indicated as LnREV).

**Data and Methodology**

Sample of the study is the Top 30 FTSE companies on Bursa Malaysia following para. 2.6 of the new MCCG 2017 stating that

*"As listed companies are not a homogeneous group, it is necessary to provide flexibility and proportionality in the application of certain best practices. Certain practices are applicable only to Large Companies"*

MCCG 2017 defined large companies as either companies listed on Malaysia's FTSE 100 or companies with market capitalization of RM2 billion. However, at the time this study was conducted, only the FTSE 30 list was made available, hence, the sample selected for this study. The time period taken for this study were from 2013 until 2017. The selection is based on the first requirement by the MCCG 2012 on the separation of role between Chairman and CEO starting year 2012. Since this study focus on the role of CEO and its relation towards earnings management, year 2013 was chosen to consider the transition of the change as required by the MCCG. Both the financial and corporate governance data were taken from the FTSE 30 companies annual reports.

Firstly, accounting background of the CEO will be taken from the company's annual report; coded 1 if the CEO has accounting background (i.e having qualification in Bachelor/Degree in Accounting, member of any accounting professional bodies or an experienced CFO before his or her tenure as CEO); coded 0 if the CEO has none accounting background.

Secondly, earnings management as represented by discretionary accruals is calculated following Dechow et. al. (1995), where total accruals will be obtained first through the following equation:

$$TAC_{it} = (\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} + \Delta STD_{it} - DEP_{it})/ A_{ijt-1} \quad (1)$$

Where;

$TAC_{it}$ = total accruals for company *i* in year *t*

$\Delta CA_{it}$ = change in current assets for company *i* in year *t*

$\Delta CASH_{it}$ = change in cash and cash equivalents for company *i* in year *t*

$CL_{it}$ = change in current liabilities for company *i* in year *t*

$\Delta STD_{it}$ = change in short term debt and current portion of long-term debt for company *i* in year *t*

$DEP_{it}$ = total depreciation and amortization expense for company *i* in year *t*

Using the same Modified Jones (1991) Model, the level of discretionary accruals for a firm is calculated as the difference between the firm's total accruals (TAC) and its non – discretionary accruals (NDAC), as estimated in equation 2 below:

$$NDAC_{ijt} = \beta_0[1/A_{ijt-1}] + \beta_{1j}[\Delta REV_{ijt}-\Delta REC_{ijt}/A_{ijt-1}] + \beta_{2j}[PPE_{ijt}/A_{ijt-1}] \quad (2)$$

where $\beta_0$, $\beta_{1j}$ and $\beta_{2j}$ are industry-specific coefficients estimated from the cross-sectional regression in equation 3:

$$TAC_{ijt}/A_{ijt-1} = \beta_0[1/A_{ijt-1}] + \beta_{1j}[\Delta REV_{ijt}/A_{ijt-1}] + \beta_{2j}[PPE_{ijt}/A_{ijt-1}] + \varepsilon_{ijt} \quad (3)$$

Where;

$TAC_{ijt}$ = total accruals for firm *i* in industry *j* in year *t*,

$\Delta REV_{ijt}$ = change in revenue for firm *i* in industry *j* between year $t-1$ and *t*,

$PPE_{ijt}$ = gross property, plant and equipment for firm *i* in year *t*,

$A_{ijt-1}$ = total assets for firm *i* in industry *j* at the end of the previous year,

$\Delta REC_{ijt}$ = change in receivables for firm *i* in industry *j* between year $t-1$ and *t*.

Thus, the discretionary accruals (DAC) for firm *i* in industry *j* for year *t* is calculated as the residual value from equation 4 below:

$$DAC_{ijt} = \varepsilon_{ijt} = TAC_{ijt} - NDAC_{ijt} \quad (4)$$

In order to determine the relationship between CEOs with accounting backgrounds and earnings management, the following empirical adopted from Hu et. al. (2017) was used:

$$DAC_{it} = \beta_0 + \beta_1 CEO\_EB_{it} + \beta_2 CEO\_G_{it} + \beta_3 CEO\_Age_{it} + \beta_4 WOB_{it} + \beta_5 COM\_ID_{it} + \beta_6 BIG\_FA_{it} + \beta_7 LEV_{it} + \beta_8 CI_{it} + \beta_9 ROA_{it} + \beta_{10} LnREV_{it} + \varepsilon_{it} \quad (5)$$

Panel data technique is used to achieve the objectives of this study. The estimation procedures will start with descriptive statistic which provides simple summary to characterize the attributes of a data set. In case of high skewness as a result from a data which are not normally distributed, the natural logarithm

(ln) is used for reducing right skewness. Next, testing for stationarity in panel data models or panel unit root tests made the crucial assumption that the individual time series in the panel were cross-sectionally independent of each other. Levin–Lin–Chu (1994), Breitung (1996) and Im-Pesaran-Shin (1998) are used for this purpose. In order to determine the poolability of the data, Breusch–Pagan test is used to test for heteroskedasticity in a linear regression model to imply many economic applications where time-series and cross-section data may be pooled. If the data cannot be pooled, then the Newey West HAC test is to be considered to circumvent the issue of heteroskedasticity-robust standard errors invalid that may cause misleading inference. Next, the Hausman Specification Test is used to detect endogenous regressors (predictor variables) in a regression model. Lastly, diagnostic checking will be performed to ensure the adequacy of the models used in this study before any conclusion is drawn.

**Findings**

The final sample of this study consists of 85 observations. From the FTSE 30 list, 7 financial institutions, 1 utility company, 3 highly regulated companies from oil and gas industry and 2 companies with insufficient information were excluded from the sample. Table 1 shows the summary statistics of the variables used in this study. The results show that about 27% of the companies in our sample are having CEOs with accounting backgrounds (CEO_EB) and 94% of the CEOs are male (CEO_G). On average, the CEOs are 55 years old (CEO_AGE). DAC is the discretionary accruals measured using modified Jones (1991) model. Lower values of the residuals obtained from using the modified Jones (1991) model indicates higher earnings quality. The companies' total revenue will be transformed using the natural logarithm to provide more meaningful scale, thus, will be indicated as LnREV thereon.

Table 1: The summary statistics of sample characteristics

| Variable | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| DAC | 85 | -.3565 | .5568 | -.032202 | .1106872 | 1.363 | .261 | 9.302 | .517 |
| CEO_EB | 85 | 0 | 1 | .27 | .447 | 1.051 | .261 | -.917 | .517 |
| CEO_G | 85 | 0 | 1 | .94 | .237 | -3.818 | .261 | 12.877 | .517 |
| CEO_AGE | 85 | 42 | 74 | 55.42 | 6.518 | .309 | .261 | -.596 | .517 |
| WOB | 85 | 0 | 1 | .76 | .427 | -1.271 | .261 | -.395 | .517 |
| COM_ID | 85 | .0769 | .7500 | .490974 | .1358683 | -.163 | .261 | -.203 | .517 |
| BIG_FA | 85 | 0 | 1 | .82 | .383 | -1.728 | .261 | 1.009 | .517 |
| LEV | 85 | .0016 | .5602 | .211721 | .1564578 | .548 | .261 | -.647 | .517 |
| CI | 85 | .0626 | .6891 | .391001 | .1397245 | -.510 | .261 | .195 | .517 |
| ROA | 85 | .0149 | .5802 | .109092 | .1125934 | 2.493 | .261 | 6.299 | .517 |
| REV | 85 | 3312917 | 46812300 | 13102597 | 9895709 | 1.747 | .261 | 3.009 | .517 |

Table 1 presents the summary statistics of sample characteristics. The dependant variable is earnings management as proxied by discretionary accruals and the main independent variable represented by CEO accounting background. CEO demographic information represented by CEO gender and age. Other corporate governance mechanisms represented by the presence of women on board, the composition of independent director and whether the company is appointing auditor from big four audit firm. Other control variables represented by leverage, capital intensity, return on assets and total revenue of the company.

Table 2 shows the Pearson Correlation among the variables involved. From the table, it is documented that CEOs accounting background and earnings management are negatively correlated. The preliminary result presented in Table 2 suggests that CEOs with accounting backgrounds is more likely able to mitigate earnings management.

Table 2: Pearson Correlation matrix

| | DAC | CEO_EB | CEO_G | CEO_AGE | WOB | COM_ID | BIG_FA | LEV | CI | ROA | LnREV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DAC | 1.000 | | | | | | | | | | |
| CEO_EB | -0.011 | 1.000 | | | | | | | | | |
| CEO_G | 0.319 | -0.410 | 1.000 | | | | | | | | |
| CEO_AGE | 0.148 | 0.009 | 0.132 | 1.000 | | | | | | | |
| WOB | -0.110 | -0.099 | -0.139 | -0.460 | 1.000 | | | | | | |
| COM_ID | -0.103 | -0.043 | 0.108 | 0.202 | -0.344 | 1.000 | | | | | |
| BIG_FA | -0.256 | 0.004 | -0.116 | -0.003 | 0.034 | 0.301 | 1.000 | | | | |
| LEV | -0.124 | 0.162 | -0.481 | 0.072 | 0.026 | -0.403 | -0.169 | 1.000 | | | |
| CI | 0.025 | 0.104 | 0.175 | -0.074 | -0.135 | 0.247 | 0.201 | 0.031 | 1.000 | | |
| ROA | -0.163 | -0.195 | 0.008 | -0.451 | 0.177 | 0.091 | 0.227 | -0.210 | 0.227 | 1.000 | |
| LnREV | 0.031 | 0.157 | 0.272 | 0.374 | -0.105 | -0.196 | 0.131 | 0.051 | 0.232 | -0.334 | 1.000 |

The regression results are interpreted after the diagnostic checking on the heterokedasticity, multicollinearity and serial correlation issues of the data have been performed. The results are presented in Table 3. This table presents the results of estimating the relationship between discretionary accruals and CEOs accounting background. Discretionary accruals were obtained from the modified Jones (1991) model. The significance is indicated by (**) and (*) at 5% and 10% levels respectively. Based on the analysis, at 5% confidence interval, CEOs' accounting backgrounds has a positive but insignificant relationship with earnings management. The insignificant relationship with earnings management also found in CEO gender and the presence of women on board. Surprisingly, the age of CEO has a significant positive relationship with earnings management. This means that, the older the CEO gets, the higher the desire of the CEO to engage in earnings management. For the composition of independent directors, the result is as expected where at 10% confidence interval, it has a negative relationship with earnings management. This result indicates that, the more independent directors on board, the more the company is unlikely to engage in earnings management activity. The big four audit firms also play a significant role in mitigating earnings management. As seen in the results table, at 5% confidence interval, big four audit firm has a significant negative relationship with earnings management. This result shows that the company which appoint auditor from big four audit firms is unlikely to engage in earnings management. Unfortunately, this study fails to find any significant relationship between the other control variables namely debt to equity ratio, capital intensity, return on investment and total revenue with earnings management.

Table 3: The results of estimating the relationship between discretionary accruals and CEOs accounting background.

| | Beta coefficient | T-value |
|---|---|---|
| CEO_EB | 0.0324 | 0.77 |
| CEO_G | 0.1540 | 1.45 |
| CEO_AGE | 0.0036** | 2.22 |
| WOB | -0.0076 | -0.39 |
| COM_ID | -0.2481* | -1.87 |
| BIG_FA | -0.0330** | -2.34 |
| LEV | -0.1182 | -0.62 |
| CI | 0.1362 | 1.33 |
| ROA | -0.1541 | -1.60 |
| LnREV | -0.0480 | -1.62 |
| Constant | 0.5329* | 1.81 |
| | | |
| $R^2$ | 0.2405 | |
| F-stat | 0.0000 | |
| N | 85 | |

**Discussion and Conclusion**

This study attempts to determine the relationship between CEOs' accounting backgrounds and earnings management. Prior studies (i.e. Hu et. al (2017) and Matsunaga & Yeung (2008)) had documented that CEOs' accounting background affect the companies' behaviour towards earnings management. Unfortunately, this study does not find any significant relationship between CEOs' accounting backgrounds and earnings management. This provide further opportunity to examine the level of conservatism of the CEOs with accounting backgrounds. They might not be conservative enough, thus, not helpful in mitigating earnings management. Nevertheless, despite the insignificance relationship found in the CEOs' accounting backgrounds and earnings management, this study has documented several interesting findings. Firstly, CEO's age is found to have a significant positive relationship with earnings management. This finding is like Demers and Wang (2010) which suggested that younger CEOs are less likely to involve in earnings management activities because they are not aware of the benefits of doing so. While older CEOs with substantial years of experience know the earnings management 'games' and the 'perks' arriving therefrom. Second finding from this study suggested that the role of independent director in mitigating earnings management cannot be denied. This study documented a significant negative relationship between the composition of independent directors and earnings management which suggested the relevance of the requirements by the Bursa Securities Listing Requirements for company to fulfil at least one third or 2 (whichever is higher) of the directors on boards must be independent directors. Lastly, the reputation of big four audit firms is good in mitigating earnings management. The result showed a significant negative relationship between big four audit firm and earnings management. This

finding is consistent with the study done by Francis, Maydew & Sparks (1999) which suggested that auditors from big audit firms constrained aggressive and potentially opportunistic reporting of accruals. This is in line with the expectation that big audit firms have a brand-name reputation and their performance are expected to be excellent when it comes to providing high quality audits than the non-big audit firms.

This study certainly has its limitation, whereby, the sample selected for this study was limited to the companies listed as FTSE 30 companies in Malaysia only. A better finding could be drawn if larger sample was chosen, thus, enhance the generalization of the result to the whole population. Hence, future study should broaden the sample size. Apart from CEOs' accounting backgrounds, CEOs' conservatism should also be examined in order to support the notion that people with accounting backgrounds should have better ethics when it comes to financial reporting because they know the dos and don'ts in the financial reporting.

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# Contemporary protectionism – causes and consequences

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**Abstract**

*This paper examines the causes and consequences of contemporary protectionism by a closer examination of the theory and policy of international trade. The focus is on the distributional implications of trade, and the benefits that a less developed country may derive from trading with a more developed country. We review the current literature on economic nationalism and find that alternative perspectives emerge from differing views on the benefits and drawbacks of globalization. We argue that understanding contemporary protectionism must include historical context in which the adverse distributional implications of foreign trade are likely to provoke nationalist sentiment.*

## Introduction

This paper develops an analytical context for understanding contemporary protectionism and economic nationalism. The infant industry argument for protectionism arises because of adverse distributional implications of trade on less developed countries. The roots of economic nationalism can be found in the teachings of Friedrich List and his adaptation of the case for infant industry protection into the theory of productive powers. We can define economic nationalism as an ideology that places the welfare of state or nation as upmost important, ahead of benefits that individual citizens, or the world may receive from unrestricted foreign trade. Economic nationalism is broader than protectionism, or the call for tariff protection of infant industries, because of its mix of different strategies aimed at promoting national welfare.

The revival of economic nationalism can be attributed to the increasing inequality of wealth that free trade exacerbates. Analysts and policy makers today are becoming increasingly concerned that some economies are becoming systematically poorer. Is the century-old reliance on the principles of free trade still equally acceptable to countries that experience declining economic growth and increasing economic inequality? What arguments can be employed to justify calls for trade protection in advanced nations?

## Protectionism Versus Economic Nationalism

The existing literature does not offer a clear explanation on what constitutes economic nationalism, and how it differs from protectionism, or from political and cultural nationalism. The object of this section, therefore, is to survey alternative perspectives on defining and explaining economic nationalism in contemporary economic thought. In many cases, economic nationalism arises as a reaction to the deteriorating economic position of one country due to a domestic or worldwide economic crisis.

The neoclassical theory of international trade assumes that free trade is always superior to protectionism, because the free market will allocate domestic resources to their most efficient use (Viner, 1937). Protectionism can be defined by a set of policies, including import tariffs, that governments use to protect domestic industries from foreign competition. In the years following the Great Depression, many countries resorted to protectionism to mitigate unemployment. At that time, Keynes (1933, p. 755) changed his position on free trade:

"…as lately as 1923 I was writing that free trade was based on fundamental truths, …yet the orientation of my mind is changed, …I have become doubtful whether the economic loss of national self-sufficiency is great enough to outweigh the other advantages of gradually bringing the product and the consumer within the ambit of the same national economic, and financial organization…"

Also, in the years following the oil crisis and the world recession of 1974-75, Balassa (1978) observed that many countries resorted to the "the new protectionism", replacing traditional import tariffs with new forms of import restriction. Although Balassa would not change his position on the superiority of free

trade, he argued in favor of adjustment assistance, where national governments use alternative measures to encourage domestic investment.

Contemporary economic nationalism emerges primarily as a reaction to the perceived adverse impact of globalization on domestic economic growth and inequality. For example, the concern of the effects of globalization on American competitiveness is a central motive in Reich's *Work of Nations* (1991), a study on the sources of national wealth and power and the role of the state in restoring and enhancing the capacities of citizens to live full and productive lives in a new global economy. Reich is against the "the old economic nationalism" that characterized American political economy during the 19th and part of the 20th century, comprised of restrictions on imports to protect targeted products and corporations. Instead, he argues in favor of "new economic nationalism", consistent with the position of the US in a new global economy, where the main propeller of economic progress is found in growing returns on highly skilled labor rather than in investment in national capital, corporations, technologies, or products, as they all become global. Therefore, the new forms of economic nationalism are policies that target and nourish the national workforce, while at the same time the government continues to participate in international trade agreements and endorse increased international interdependence.

Recent political economy literature on economic nationalism, (Helleiner and Pickel, 2005), argues that protectionist policies alone are only one special form of nationalism, but that the broader historical and national references are necessary for a better definition. Thus, Pickel (2002) points out that economic nationalism should be interpreted as a political action in a specific historical context, rather than a universally accepted economic doctrine. The criticism accuses economists of oversimplifying and reducing economic nationalism to the set of protectionist economic policies.

According to Pickel, it is impossible to develop an empirically based theory of economic nationalism, because there are many different nationalisms in many different historical contests. In the context of dismemberment of the former Soviet Union, for example, there is an emergence of liberal economic nationalism, characterized by the attempts of Lithuania to express national consensus favoring an EU orientation, rather than remaining economically and politically dependent of Russia (Abdelal, 2001). Economic nationalism is a dynamic concept, arising from a distinct pattern of interactions between governments and markets, the state and the economy, as they change over time. Pickel describes nationalizing mechanisms, using the case studies of East Germany, Cuba, China, and Russia, pointing out primarily the interplay between democratization and marketization as internal and external forces. The nationalizing mechanism, as a concept, explains the changing role of the nation-state during economic transition in different countries.

To modify the postulates of neoclassical trade theory, Singh (2010) discusses economic nationalism through the lens of economic openness. By focusing on the Asian experience, specifically Japan and Korea, he postulates that there is a different "optimum" degree of openness for different countries, and that they should seek "strategic" rather than close integration with the international economy. Not only does past economic nationalism contribute to faster economic growth in Asian countries, but it can continue to help in the future in maintaining national control over volatile capital movement and financial instability.

**Economic Patriotism**

Another form of protectionism arises as a conflict between challenges of economic market integration and political business cycles. Elected officials are torn between the simultaneous pressure to satisfy the domestic electorate and to engage in compromises required for further market integration. The recession of 2008 has accentuated this conflict, by increasing the range and scope for new government intervention within liberal international economic governance. The expectation that the government will bail-out selective banks and industries at the expense of others, leads to additional pressure on the nation-state to exit processes of economic integration. In this context, Clift and Wolf (2012) analyze how the tension between international market integration and specially limited political mandates leads to the phenomenon of economic patriotism. The authors claim that economic patriotism becomes an even broader form of economic nationalism, by attributing an intrinsic moral value to the defense of national interests and their priority over individual economic interests.

Furthermore, the concept of economic patriotism allows for discrimination against territorial outsiders, as part compromise between the territory (i.e., one country, but also a group of countries with common goals, such as the European Union), its territorial-bound political obligations and economic

interests. Thus, as a concept, economic patriotism is broad enough to accommodate both the recent exit of Great Britain from the EU (BREXIT) and the efforts of Germany to help preserve the integrity of the Union either by supporting additional monetary transfers to its less prosperous members, or by sanctioning additional immigration to protect jobs and wages within its territory.

In a recent empirical study, Colantone and Stanig (2017) demonstrate empirically the revival of nationalism in Western democracies. By using data on legislative elections in 15 Western European countries, they find that stronger regional exposure to cheaper Chinese imports increased support for nationalist parties and radical right political platforms. The hidden cost of globalization is the effect of import competition on losses in national competitiveness and creation of disillusioned workers likely to demand a new protectionist-oriented state. However, they argue not to return to protectionism, but a new more inclusive model of globalization. Similarly, Jensen at al. (2016) analyze the trade origins of economic nationalism in the US, by identifying the distribution of winners and losers in international trade and its effect on US presidential voting.

**Protectionism Versus Free Trade**

Classical economists distinguished between two types of benefits from unrestricted foreign trade: allocative benefits, when each country's resources are employed according to their lowest opportunity cost; and distributive benefits, when the sum of potential gains in favored sectors exceeds losses of other sectors. The distributional concerns arise when, due to inherited market failures and inconsistent domestic distribution polices, the sum of loses to sectors in some countries begin to overshadow the gains to others. It is not inconceivable then that free trade can exaggerate distributional problems and undermine domestic consensus on the most desirable path of future economic growth (Rodrick, 1997). By overstating the magnitude of aggregate gains from trade liberalization, and minimizing distributional concerns, the very proponents of globalization and free trade are watering the roots of modern economic nationalism.

One market failure that can diminish the distributive gain from free trade and increase the benefit of protectionism is the effect of modern technological progress on increasing inequality of wealth in the domestic economy. In many ways, progress empowering information technology today at the expense of outdated, moribund industries resembles the implications of the industrial revolution in Britain, as witnessed by classical economists. The fruits of technological progress accrue unevenly to different sectors within the domestic economy and across countries. The new economic rents are derived from the price of newer technology products that everyone desires.

It remains controversial whether free trade contributes to the dynamics of domestic inequality in the 21st century, thus furthering sentiment towards economic nationalism. While Goldberg and Pavcnik (2007) find that increased exposure of developing countries to international markets increases inequality; Lawrence (2008) argues that other forces, including technological, financial, and institutional innovations, may be more important than trade in contributing to economic inequality. More recent observations question the coincidence between the recorded decline in US manufacturing employment and the change in US trade policy towards reducing tariffs on imports from China at the start of 21st century (Schott, 2016). Still, we need more studies to reaffirm the link between the redistribution of income from trade and the decline of certain sectors to the extent that this contributes to the further rise of economic nationalism.

The modern theory of international trade accepts the classical tradition that a general benefit from free trade is likely to prevail for most countries. The arguments in favor of protectionism may still exist, but only on the grounds of specific situations of certain sectors (Melitz, 2005). For example, import protection may improve welfare by shielding the industry with significant learning potential and degree of substitutability with foreign goods. However, in accord to the famous case for infant industry protection by John Stuart Mill, this protection must remain only temporary.

Most theoretical and empirical trade models today recognize distributional implications of trade, not only for winners but also losers. Free trade has no magic wand that simultaneously increases a country's welfare and redistributes the gains from winners to losers within the society. Each country engaged in foreign trade will need to develop its own domestic distributional policies that may offset the adverse impact of trade on certain sectors, but not engage in the revival of economic nationalism.

**Conclusion**

Strengthening the nation-state may not always conflict with forces of globalization. Moreover, as the world economy undergoes structural changes through turbulent times of instability, the role of the nation-state becomes more important in reconciling individual self-interest with increased international interdependence. In the years following the Great Depression, Keynes (1933) revised his views on the free movements of goods and capital, in favor of economic nationalism, because he believed that circumstances that existed in 19th century have changed enough to justify a reorientation. The change was that international capital movements became too volatile for the macroeconomic stability in individual countries. However, Keynes was against the return to a straightforward protectionism; but rather in favor of 'our own favorite experiments' that would allow citizens to redefine the role of nation-state in a changing global economy.

Economic nationalism may comprise a benevolent nationalism, when it helps to restore economic growth in one country without hurting others; or it can consist of hostile and retaliatory protectionist policies that promote one nation at the expense of others (Levi-Faur, 1997). A hostile economic nationalism traces its roots in mercantilism, an outdated doctrine according to which a nation can increase its monetary wealth only by decreasing the wealth of others. In the past, this hostile type of economic nationalism existed in fascism; and it reemerges in the present with the rhetoric and agendas of right-wing extremists and social conservatives. On the other hand, a rational or benevolent form of economic nationalism (Reich, 1991) rejects that self-interest alone can help countries grow and participate in global economic progress, and requests that nation-states should help ascertain our differences within the march toward general progress, and the coordination needed for its achievement.

Different views on the causes of contemporary protectionism hold that there is no unique cause, or justification to place the national economic interest before the interest of individuals or the world. Economic nationalism remains a dynamic concept, bound by specific historic and socio-economic circumstances of different countries.

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# The effects of climate on tourism: would you travel to destinations where you may be in danger?

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**Abstract**

*Tourism is a huge driver of growth and economic development, and is influenced worldwide by several factors, including political considerations, wealth of the generating and destination countries, economic activities, and, especially, the effect of climate on the tourism activities. The climate of any area or tourist destination influences the activities of participants, and, to varying degrees, the climate is influenced by greenhouse gas (GHG) emissions, which are said by influential environmental scientists, to be caused by the activities of man. This paper is a secondary-sourced literature review of the effects of climate (and climate change) on tourism activities, specifically in eastern and southern Africa, but which are equally applicable to tourism activities world-wide, as a first step towards a doctoral thesis on tourism and climate change. The paper defines tourism and weather, as a factor of climate, and considers multiple situations/activities influenced by the climate.*

## Introduction

The United Nations World Tourism Organization (UNWTO) (2019) notes that 1.4 billion people travelled in 2018, up by 6% over the 2017 figures. Tourism to the Middle East increased by 10%, to Africa by 7% (South Africa had a 0% accommodation growth (Horne, 2019), but grew by only 3% to the Americas. Inbound tourism to the United Kingdom is forecast to reach 38.8million in 2019, up from 37.5m in 2018, with spending at GBP24.9billion in 2019, also up from GBP23.1b in 2018. However, the Brexit issues have left tourism to the UK, especially from northern Europe, doubtful as bookings are down on the 2018 levels, despite the Pound at levels below those pre the Brexit referendum levels and the lower oil price, but with a general slowdown in the world economy (Visitbritain,org). China has now emerged as the leading tourism destination. The UNWTO (2019) confirmed that 'tourism is a serious driver of economic development and growth' … due primarily to the stability of fuel prices which have led to affordable air travel, and revealed that national and international tourist receipts totalled US Dollars 1.6 trillion, 7% of total world exports. Cooper, Fletcher, Gilbert, Shepherd and Wanhill (1998:8) defined tourism as 'the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes'. Page (2003:7) agreed with this definition but added that the activity at the destination is 'not related to the exercise of an activity remunerated from the place visited', which definition is supported by George (2007:3), who emphasised several criteria:

- The movement of people
- The journey to, stay at, and return from a destination
- Taking place outside of the usual environment
- Is a short-term and temporary
- Visited for any reason other than permanent residence or employment.

If one pursues these definitions further then holidays, leisure, health, sport, religion or business (MICE tourism) suggests the reasons for the visit. If these reasons are considered further then it becomes clear that some of the activities will take place outdoors, in which case the weather becomes an important criterion. Bennett, Jooste and Strydom (2005:31-32) note that there are basic approaches to the study of tourism: the institutional approach, product approach, historical-, managerial-, economic-, sociological-, interdisciplinary-, systems- and geographical approach; the latter includes the study of 'location,

environment, *climate*, and landscape' topics. The majority of tourists have a number of major criteria to consider when planning to travel: the costs of the travel, also considered as the 'value for money' concept especially for long-haul travel, safety of the travellers (including health issues), the attractions and activities at the environment visited, and the climate at the destination; where the latter will influence the tourist to consider alternate destinations/activities, the timing of the visit, or whether to travel at all.

Climate change (increasingly referred to as climate disruption) can be divided into three distinct groups: *direct* climatic circumstances which affects the length and quality of 'climate-dependant' tourism seasons, *location* of destinations and attractions, the infrastructural development of tourism services, operating costs of tourism facilities, damage, and interruptions of tourism business', and *holiday demand*. There are also *indirect* changes which affect the natural tourism-asset base specific to a destination, which are crucial to attract tourists to the venue; environmental conditions could deter tourists, and operating costs and capacities of firms to practice sustainable tourism. In the third situation any climate change could impact on socio-economic growth (at an attraction/destination) and discretionary income, also used for tourism activities, increased political instability and security risks, and tourists' attitudes to travel. Finally, policy responses, such as migratory policies, could affect transport and other cost structures, and therefore destination choices (Scott, Gossling & Michael Hall, 2012:215). These authors note that climate change has a marked effect on how tourism operates at a destination/attraction (Scott et al., 2012:216) which requires continuing research, as climate change will appear to 'promote' certain areas, for example Canada, Northern Europe, Scandinavia, Alaska and Russia (Nicholls, 2014), and cause declines in tourism activities in tropical areas and small island destinations (the sea, sun, sand tourism), with Mediterranean destinations becoming 'too hot', by the 2020s (Scott, et al., 2012:216)

For the 'sea, sun, sand', or the winter 'ski and snow' tourism groupings, climate is very important as it will determine the weather conditions at any time and at any place; '(C)limate is not homogenous over the earth's surface and is not a tourism resource in all places' (Steyn & Spencer, 2012:125), where some climates promote and other hinder tourism. Heyman (2008 in Steyn & Spencer, 2012:125) points out that 'regional and seasonal (climate) changes will affect national and international tourism flows' and suggests that northern hemisphere countries are primary producers of GHC. Where climate is the driver of tourism, such factors as 'operating costs, …heating and cooling, snowmaking, irrigation, food and water supply, and insurance costs' (Steyn & Spencer, 2012:125) are important consideration factors, as are widespread poverty, weak infrastructure and institutions, and natural disasters (Opondo, 2012:148). Hares, Dickinson and Wilkes (2010) question whether the average tourist is aware of the impacts of travel on the climate and climate changes. They note that in a United Kingdom Department of Transport Report (2008), only 66% of tourists were aware of a possible link between climate change and travel. Tourists need to factor pricing, weather conditions, family and friends, travel time and possible activities into holiday plans and are not specifically concerned with impacts on the climate when planning. The suggestions are that shorter but more frequent travel could reduce climate change impacts, especially when using air-travel as the mode of transport. However, changes in technology, marketing, and tourist' behaviour also need to be considered in decision-making, including the time-benefit of air-travel (specific to low-cost airlines which boost travel for the masses) as other modes are 'slow'.

**Research methodology**

Climate change (the authors will use this terminology rather than the developing term 'climate disruption' as it is the wording envisaged in the proposed doctoral study) is a problem, but only limited quantitative research has been done, mainly geographical in nature. This article presents the initial planning for a doctoral thesis on the effects of climate, and climate change, and on tourist's activities when away from the normal home and the work environment. Its summaries an introduction to some available secondary literature sources on tourism and climate, and offers illustrations on, and a case study about, climate change. This study is necessary to address such issues as (i) the consequences of, for example, sea-level rises which could impact negatively on coastal tourism with the destruction of tourism infrastructure and coastal eco-tourism, losses of bio-diversity and high-value beach development (Atzori, Fyall & Miller, 2018:13). It is also necessary to investigate the need for engineered shore tourism and a redefined coastal management programme, and (ii) to monitor climatic changes which factor travel and destination choices. Research is also needed to (iii) establish weather conditions as they affect tourism activities, and finally

(iv) the effects of climate changes as these impact on, for example, diseases, forest fires, water restrictions, heat waves and reduced beach activities.

**Climate, and climatic effects on tourism**

'Climate change is a very complex, pervasive and uncertain phenomenon, generally difficult for people to conceptualise and to relate to their daily activities, arguably because it cannot easily be translated into the language of popular culture' (Dillimono & Dickinson, 2015:439). The climate has been a topic for general discussion from time immemorial and is the topic for academic interest for generations; however, the study of climate and its effect on tourism has only received considered interest since the early 1990s (Hall & Higham, 2006). In order to understand the effects of climate change on tourism it is necessary to explain the term 'climate'. According to Gomez-Martin (2005:572) 'climate is the weather patterns observed over a period of time', and the weather is the 'state of the atmosphere' as it is observed and measured over a period of time and at a specific place (a destination for tourism). As early as 1991 Burton (1991) decided that warm temperate zones were ideal for sun and beach tourism; he emphasised that the Mediterranean and eastern African coasts were ideal for water and beach activities. The climate at a specific place (destination) will determine where an attraction is developed; when (and if) tourists will support the development; what type of investments could be made for the development, and what specific infrastructure is needed at the attraction. Tourism, particularly natural tourism, 'requires geographical' space for development, which will use 'physical and biological' elements, some created by human-effort, and topography, geology and plants and animals (flora and fauna) (Steyn & Spencer, 2012:126). The World Wildlife Fund (WWF) note in their report the 'Living Planet' (Brits, 2019) that human activities since 1970 have destroyed 60% of all bird species, fish, reptile, amphibious and mammals, 50% of all coral reefs, and 20% of the Amazon rain-forests. Research published by the Biological Conservation Institute states that 40% of all insect-species (moths, butterflies, bees, wasps, ants and ground-beetles), are under extreme pressure (Brits, 2019).

Climate includes the elements of wind, temperature, rainfall and (hours of) sunshine, all of which are necessary for a successful 'sea-sun-sand', outdoor, and sport types of attractions, including winter and health tourism. Bardon (1991) found that 89% of Spanish tourists viewed a sunny climate as important when planning a vacation, which would have a huge economic influence on a destination. Scott, Jones and Konopek (2007) were at pains to emphasise the effect of climate on the natural environment and nature-based tourism, as climate is a 'renewable and non-degradable' resource which, when experienced now, has no consequence on the climate to be experienced sometime in the future (Gomez-Martin, 2005, as cited in Steyn & Spencer, 2012:126). Climate is non-consumable (this is not to say it is not changeable due to human activities, including GHG emissions) in contrast to the consumption of water, electricity and flora.

Shami and Arad (2014) caution that the effects of climate change could be exaggerated as the planet is generally in a 'warming-up' period, and that human activities do influence climate through the emission of Green House Gases, but that any changes could be reversible through changes in the attitudes of, and the activities of, human behaviour. The AOAA (2019) noted that between 1885 and 2018 the temperature deviation varied between 0.5 and 0,75 degrees centigrade, including a decline between 1880 and 1910 of 0.5 degrees. George (2011:63), therefore, explains that global warming is the result of human activities, 'including the (mis)use of chloroflourocarbons (CFCs)', and has resulted in the increase and furiousity of storms (typhoons/hurricanes/cyclones), which affect sea levels. The depletion of the ozone layer (caused by GHG emissions) has had a serious effect on beach resorts, and an increase in skin cancers. A negative effect of climate change, including the carbon emissions from tourism transport (especially air transport) and accommodation, will be the increasing level of GHGs which could change the tourism flows from northern Europe, the Caribbean, 'coastal, mountain and nature-based destinations in the least developed countries and small islands' (George, 2011:534) to destinations free from GHGs. George (2011:543) notes that British engineers worked on a 'hypersonic' aircraft that could fly at five times the speed of sound which would have a major decrease in the amount of fuel used, and therefore the levels of gas emissions, as the plane would fly on liquid hydrogen, which could address the United Nations World Tourism Organizations', (UNWTO, 2007a:7) concern on greenhouse gas emissions from (tourism) aircraft. Historically, carbon dioxide emissions from the global use of fossil fuel combustion and industrialisation between 1757 and 2017 has progressively increased, initially gradually, to about 5 000 tons by 1947, and to around 37 000 tons annually now.

As the proposed study concerns the eastern and southern regions of Africa, consider the possible negative climatic implications on tourism in areas of eastern and southern Africa, including the Langebaan Lagoon in the Western Cape of South Africa (a major breeding ground for migrant northern hemisphere birds), the Ngorongoro Crater National Park (endemic animals) and the Serengeti (annual animal migrations) in Tanzania, Lake Malawi (fish species) and the Aberdares National Park in Kenya (primates), and the Murchison Falls and the source of the Nile River at Lake Victoria in Uganda, including increasing populations in these countries. The implications of droughts (and resulting fires) on the smallest floral kingdom in the world on the Cape Peninsula in Cape Town, which contains over 8 500 species of reeds, ericas and proteas in an area of less than a quarter of one percent of the world's total land surface, would be devastating on tourism to all the areas mentioned above.

The United Nations Framework Convention on Climate Change (2009) noted that two options were available to interested parties for addressing climate change; mitigation and adaption (Opondo, 2012). The Intergovernmental Panel on Climate Change (IPCC) defines mitigation as 'an anthropogenic intervention to reduce the anthropogenic forcing of the climate; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks' (Opondo, 2012:150). Adaptation, she said, is the 'adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities'. So, an adaptive policy will ensure a country, area, or destination could adjust to any climatic change to control possible damages of weather vagrancies (IPCC, 2007). According to Opondo (2012:150) climatic adaptation policies of legislators are aimed at supporting 'socio-economic' impacts to reduce the 'vulnerability' of disadvantaged communities to climate vagrancies, whereas mitigation refers to the reduction of the GHG which are said to be responsible for climate changes.

**Impacts of climatic change on tourism**

There is a consensus among scientists and politicians that the world's climate is changing as a result of the GHG emissions, which are causing global warming and changes in weather patterns. Nicholls (2014) wrote in the 5th IPCC Assessment Report, that travel contributed 4.9% of carbon emissions, which were expected to increase by 130% between 2005 and 2035 as the world became more affluent and promoted more travel. These changes are expected to have major impacts on world destinations by the year 2050, including melting icecaps at the poles and glaciers, droughts and storms (Gore, 2006; George, 2011:533; Steyn & Spencer, 2012:128). These are among the obvious expected impacts on tourism; there are however other less obvious anticipated climate changes. The Geophysical Research Letters say that within the next 20 years the Artic area will be ice-free under the present climatic conditions (Tempelhoff, 2019a), as sea-ice melts at increasing rates.

Tourism has two central aspects: the *demand* for tourism which stems from the desires and needs of tourists to experience places/activities that are not available at the place of residence, and the *supply* of the attractions, accommodation, facilities and events at the destination. Most discussions on climate change address the impacts on the supply of tourist facilities; little attention is paid to the demand side. Hall and Higham (2006) say that the complete relationship between tourism and climate must be considered to obtain a full impression of the impacts: the tourist generating area, the travel to and return from a destination, and also the destination, and attractions/events at the destination, must be considered.

Figure 1 clearly demonstrates the interaction of the climate on tourism at unique destinations and allows for the impact of government's policies on climate (change) and tourism. The authors have drawn various aspects of tourism (for example, source markets, location, seasonality, marketing, monetary measures, health issues and entrepreneurship) into one over-arching framework to demonstrate the relationship between climate and tourism. Dillimono and Dickinson (2015) caution that developing countries are probably more susceptible to climate change because of the (sometimes extreme) prevailing weather conditions of a country/area, and inadequate capacities due to poverty, poor infrastructure (referring to clean water supplies, health, food security, and snow depth, for example), population growth, declining crop yields, and rising sea levels, to deal with the problem. Some places/destinations/businesses are susceptible to climate change and adaptive capacities. Countries which are dependent on tourism to promote GDP are more prone to climatic influences, and political interference is clouded by these impacts, leaving poor prospects for long-term tourism development

which could be further hindered through carbon emissions and the consequent increase in taxes to mitigate these emissions.

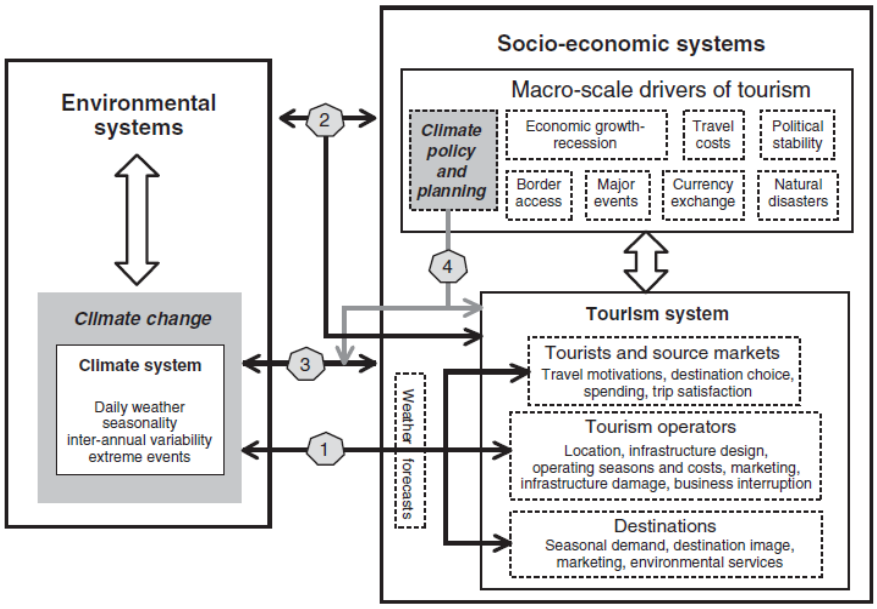


Figure 1: Climate change impact pathways on international tourism
Source: Scott, Gossling and Hall (2012:215)

*4.1) Changing demand patterns*

At the generation area tourists should be conscious of the climate changes which could affect the decision-making processes regarding perceptions of the destination and the available activities. The climate (at the destination) could also affect the seasonality of travel and visitor flows to the destination/attraction, not necessarily the desires to travel, which are largely driven by economic factors, but possibly the 'travel preferences in space and time' (Steyn & Spencer, 2012:128). Perry (2006) speaks of 'good' summers in the northern hemisphere which will persuade visitors to stay in the area rather than moving to other destinations for recreation and holidays. Some destinations may lose their tourist appeal, or even disappear, as a result of the effect of climate change on traveller-motivations.

New regulations on energy produced could also affect travel patterns, especially long-haul travel. National and international policies introduced to monitor and control GHGs could increase travel costs and impact on environmental attitudes, leading to a change in tourist demand patterns, for example a change in transport modes. Environmental concerns based on the carbon footprint featured in a study by Gössling, Hansson, Horstmeier and Saggel (2002) on the Seychelles islands; it was found that almost 100% of the carbon deposits were caused by aircraft to the islands. Such greenhouse gases could result in the demise of a tourism industry, and/or a redistribution of activities. While intercontinental travel would probably continue, and to grow, mass tourism may choose closer destinations for holidays. The international tourist-industry falls hugely in the North America-Europe-Asia band in the northern hemisphere, and tourists are expected to travel mainly in this band, which is not good for the tourism industries in southern hemisphere countries. Much of tourism takes place around bodies of water and coastal regions; these destinations/attractions are especially vulnerable to sea-level increases, storms, and even droughts (a good example would be the devastating floods of New Orleans in the Gulf of Mexico). McGuire pointed out in 2006 that rising sea levels could erode the pristine beaches of the Indian Ocean islands and, in the case of the Maldives which are only one to two metres above sea levels, submerge the islands completely below sea levels. Nicholls (2014) notes that one-third of Caribbean resorts are less that one metre above surrounding sea-levels. The IPCC forecasts sea-level increases of between 0.45m and 0.82m by the turn of this century, which implies that 49% to 60% of these resorts will be seriously damaged, with 21 airports disrupted and 35 ports inundated, and the costs of maintaining/repairing this damage is forecast at between USD10b to USD23billion (www.ipcc.ch).

Tourism is dependent on the provision of fresh products for hotels and restaurants. Communities supplying such produce are susceptible to droughts (the Western Cape Province in South Africa experienced the worst drought in 100 years in 2017/18, resulting in no water for the farming communities, and only 50 litres a day per person for household and personal use, and in May 2019 Sydney again introduced water-restrictions), flooding and aridification; subsistence farming would therefore be devastated. Such events could have a totally negative effect on the economies of regions and nations, and increase (existing) poverty levels; similar events in the 1990s and early 2000s in Zimbabwe resulted in the degradation of soil fertility, famines and population migrations (Steyn & Spencer, 2012:130), especially to South Africa (some of this is a political issue due to the policies of the former Zimbabwean president, Robert Mugabe). The contestation for the reduced availability of 'good' land could lead to inter-tribal/inter-regional conflicts and wars, and to serious health issues, such as the cholera outbreaks in Zimbabwe in 2008/9. These issues, due in part to climatic change, are not conducive to the development of any infrastructure or tourism superstructure, let alone tourism development, which could sustain poor/marginalised communities. The pressures on 'good' farmland could lead to the invasion of nature parks/reserves for arable land and killing of edible game. The World Health Organisation (WHO, 2018) stated that climate change did affect health through provision of clean air, safe drinking water, sufficient food sources, and secure shelter, and predicted that adverse climate could cause 250 000 additional deaths per year between 2030 and 2050, through malnutrition, malaria, diarrhoea and heat stress.

*4.2) Impacts on the range and distribution of resources*

A classic example to protect resources is the efforts of the Dutch nation to protect the low-lying areas of the Netherlands from rising sea-levels through the construction and maintenance of the Dyke system. McQuire (2006) predicted that sea-levels 'could be 72mm higher by 2030, while the melting of the Greenland and Antartic ice sheets could contribute as much as 25cm to (current) ocean levels (Steyn & Spencer, 2012:131). International cities and tourism destinations/attractions developed along coastal areas and on river estuaries are specifically susceptible to rising sea-levels brought about by melting ice regions and unsustainable heavy rain-water runoffs, which lead to the erosions of escarpments, destruction of sea-side resorts, the tourism infrastructure, roads, provision of sewage maintenance, communications, yacht basins and the local fishing industries. The devastating tsunami in 2004 in east Asia caused tidal rushes around the whole Pacific rim and included metre-high tidal waves along the whole eastern coast of Africa, destroying habitation along coastal areas (Steyn & Spencer, 2012:131). The terrible flooding of Mozambique and Zimbabwe in March and April 2019 (hurricanes Idia and Kenneth), resulting in over 1 000 deaths and the destruction of infrastructure and arable land-usage, is an example of the impacts of the weather in the region. Cyclone Fani has also caused terrible damage in parts of the Indian sub-continent. Excessive climate changes could translate into 1cm sea-level rises, which means a '1.5 metre retreat of shorelines … by 2030 shorelines could be expected to have retreated by at least 108 metres, and possibly up to 375 metres, in low-lying coastal areas' (Steyn & Spencer, 2012:131), causing stagnation in economic growth, political unrest and health issues, and tourists' seeking safer destinations.

*4.3) Increase in investment risks*

When climate changes have a visible effect on tourism destinations, through the destruction of the local infrastructure, investors will withdraw from the area in preference to 'safer' destinations/attractions, due to higher maintenance and insurance costs. This would result in adaptive uses of immovable and fixed tourism-related capital, and redesign of urban and resort infrastructure and layout. Rising sea levels could have a devastating effect on the economic activities of coastal properties, where flooding, infusion of saltwater into the fresh water sources (as happened in the flooding in New Orleals (the USA) in the early 2000s, and the development of the Dyke system in Holland), erosion of beaches, and coral reef-barrier islands. Hauer, Evans and Mishra (2016, in Atzori et al., 2018) projected that millions of people (and millions in US Dollars) would be at risk from rising sea-levels in continental United States, the state of Florida and the Everglades parks being an example, from cyclone activities. Hauer et al. (2016, in Atzori et al., 2018) are concerned that most studies on climate change ignored the effects of (natural and immigration) population growth on coastal development, and the wave effect on undermining foundations, and Atzori et al. (2018) estimate that by 2100 1.2 million people could be displaced if climate change caused a 0.9metre rise in sea-levels. Professor Mark New of the African-climate initiative at the

University of Cape Town has estimated that climate change will cause droughts in the Cape Town region every 15 years, instead of the previously envisaged 50 years (Tempelhoff, 2019b), resulting in anticipated water-consumption policy changes.

*4.4) Threats to sustainable practices*

Climate changes will impact on eco-systems, especially water-based resources. Decreasing rainfalls and aridification (dry area caused by insufficient water to support vegetation) will affect vegetation and ground covers and have serious effects on farming, and delivering produce for tourists' sustenance, economic activities, deforestation and wildlife tourism. Aquatic life (farming and recreation resources) would be particularly affected by raising temperatures, increased wave-height activities, and rising sea temperatures, to the detriment of 'sea, sand and sun' holidays. The effects of such climate change will impact the livelihoods of resident populations, and certainly subsistent farming, causing food shortages for these communities and tourists' in local accommodation and restaurant facilities, and will certainly lead to increased levels of poaching of game, and the illegal collection of firewood in protected areas, leading to further destruction of flora and fauna. Under pressure from distressed communities, governments may abandon wildlife protection policies in favour of more sustainable practices of food production, resulting in the reduction of nature-based tourism resources.

Where climate change is due to continuing and increasing GHG emissions governments may be forced to introduce restrictive practices on travel, especially air and distance travel, which could impact negatively on the resident tourism industry as greenhouse taxes are introduced to reduce vehicle emissions (imagine the effect on the tourism industry of barring air traffic to Indian Ocean islands and the Caribbean). Dickinson, Lumdson and Robbins (2011) urge the use of road travel instead of planes (including low-cost airlines), pricing changes to decrease demand for travel which would lead to reduced carbon footprints (contributors to GHG), and a general adoption of 'slow travel' to counter climate changes brought about by tourists' demand. The exact contribution to GHG emissions is brought about by the distance travelled, modes of travel, the length of stay at a destination, and the energy usage for accommodation and activities. These authors urge that change in tourist behaviour is needed towards train, coach, cycle and foot travel.

Emission taxes on all, or any, form of transport could result in the geographical contraction of tourism-related activities; on the other hand, such policies could lead to the development of low-emission forms of travel, such as the hypersonic aircraft using liquid hydrogen as fuel, or the experimental solar-powered boat, the Turanor (George, 2011:534). As far back as 2005 the UNWTO produced data which showed that international and local tourism produced about 5% of GHG; transport alone accounted for 75% of this figure (40% by aircraft). The study showed that tourism in the five major regions represented 2.7% of trips but accounted for 17% of GHG. This was contrasted by coach and rail travel which constituted 34% of travel but contributed only 13% of GHG (Steyn & Spencer, 2012:135). The same UNWTO (2007a) survey estimated that carbon dioxide emissions could grow by 152% by 2035 if careful control on these emissions was not exercised.

Tourism does contribute to environmental changes, especially for eco-tourism at altitudes, and the impacts include on policies regarding tourism infrastructure, resort development, roads and communications, attraction-maintenance, resources demand on water, electricity and refuse removal. Scott, Hall and Gossling (2012:6) note that the scale or rate of climate change is influenced by human activities on habitats, waste products, consumption of fresh water, electricity provision and communication systems, and production changes (paper products to plastic), and deforestation which leads to changes in rainfall patterns. These authors also emphasise the time lag between events/activities and the effects of climate change on landscapes, including the introduction of exotic flora.

In Figure 2 the authors have tried to demonstrate the impacts of GHG emissions on both the tourist generating and destination areas, in terms of the effects on the (natural and man-built) environment as a result of climate changes. Wade and Jennings (nd) appear to support the assumptions in Figure 2, while supporting the Schreuder's Economic Team report; they say that the climate changes will contribute to inflation through general price changes and agricultural shortages (due to increased droughts and flooding), and reduced land availability and higher energy costs (increased demand for cooling and heating).

*4.5) Economic impacts*

Tourism is the world's largest industry, employing about 300 million persons, and accounting for approximately 4% of the total Gross Domestic Product (GDP). The UNWTO (2019) estimates that almost 2 000 million tourists travel internationally, with the number of national tourists a guesstimate of double this number as many countries do not keep accurate data on travel. This movement of people contributes to an increase in wealth in the destination countries, and a re-distribution of income in national economies. Climate change does impact on the economic wealth of tourist' countries, and adverse climate will impact negatively on tourists' flows and therefore on the economic prosperity of a region/country. The transport industry is under threat from the emissions of carbon dioxide, and the constantly rising cost of petrol and diesel does also impact travel. As early as 2006 Stern (cited in Steyn and Spencer, 2012:136) concluded that climate change could result in as much as a 20% reduction in the global GDP by the second half of the 21st century, seriously impacting on the economic growth and development in, especially, tourism receiving areas/countries.

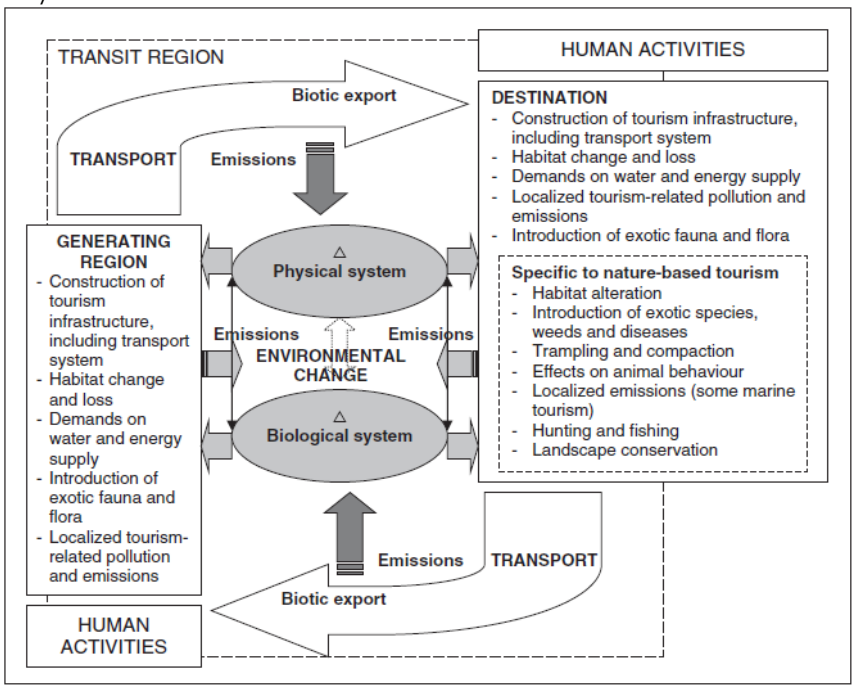


Figure 2: Contribution of tourism to environmental change
Source: Scott, Hall and Gossling (2012:9)

*4.6) Policy options pertaining to climate change*

All governments regulate their tourism industries, mainly through tourists' taxation (airport departure tax, visitor accommodation tax, additional entrance fees for 'foreign' visitors at attractions) and recognise both the positive and negative influences of visitors, including the adverse effects of climate change on destinations. Most governments apply mitigation policies through technological, economic and socio-cultural controls which could lead to GHG emission reductions, as was envisaged during the Vienna Climatic Change Talks in 2007, which sought to reduce emissions to well below the 2000 levels by mid-2050. The UNWTO envisaged four major mitigation strategies to lower GHG emissions (UNWTO, 2007b; Steyn & Spencer, 2012:39):

Reduce energy usage which can be achieved by changing 'destination development and marketing (tour operators), destination choices (tourists), as well as shifts in transport from car and aircraft to rail and coach' (Steyn & Spencer, 2012:139). Staying longer at a specific destination could also reduce gas emissions, but an international trend towards shorter but frequent travel appears to be the direction for future tourism. This trend could lead to a trade-off between gas emissions and tax costs on fuel, and possibly to improved technology to offset travel costs, including more efficient aircraft.

New technology in energy efficiency should promote reductions in fuel-demands, reducing gas emissions.

Numerous forms of energy are available to the tourism industry, including the use of renewable energy through improved use of wind, water, photovoltaic, solar, biomass, geo-thermals, and energy generation through waste produce. Certainly, at island destinations, where it would be expensive (and add to GHG emissions) to transport fossil-fuels.

Carbon dioxide could be stored in 'sinks'; depleted or worked-out mines, or through afforestation (as opposed to deforestation).

Unfortunately, the costs of avoiding or reducing GHG emissions are borne by governments and only partly passed on to the causes of these gases; in large the tourism industry through the demand for travel.

*4.7) Coasts, beaches and islands*

Protection requires timely identification of vulnerable facilities through the development of (for example) seawalls and breakwaters, and the enhancement and preservation of natural defences which could include the adaption of building guidelines and tourism infrastructure. This would include strategies to protect, accommodate and retreat forms of coastal, mountain and desert areas; for example, the provision of artificial snow at marginal ski-resorts, avalanche monitoring, and changing demographic patterns in areas that are too wet or too dry.

*4.8) The built environment*

This aspect of tourism development is entirely within the control of governments and developers, and would include alternate buildings designed to accommodate climate change, restricting construction on vulnerable land (flooding, landslides, drainage), alternate planning for transport nodes and routes and the best type of transport for a specific area, revised planning for the supply of water, electricity or energy, communications, and waste removal: that is, consideration of the 'green environment'. The development of a tourism superstructure may have to be written off over shorter periods in climate susceptible areas affecting property prices, which may also require higher insurance cover, and therefore premiums. Adaptive measures may be required for immobile tourism infrastructure, and a change to 'green' sources of energy and water sources.

*4.9) The tourism sector*

To counter the effects of climate-change each destination/attraction will have to adapt their policies and strategies, which could include the interchangeable use of man-made and natural attractions, revising marketing planning and market segmentation, changing seasonality and therefore tourism flow patterns, finding alternate modes of transport, planning for changing health patterns, restricting the use of sensitive eco-systems, and promoting greater inter-governmental co-operation.

*4.10) Government policies*

Governments, certainly in developed western countries, are aware of the impacts of climate change and most have plans and strategies to limit/prevent/counter catastrophic events such as typhoons, flooding, and droughts caused by changes in weather patterns. These could include accelerated depreciation on infrastructure in vulnerable areas, compensation legislation, restriction on the use of water or energy sources, encouraging developmental investment in infrastructure, addressing education and training directed at emergency situations, planning and re-planning of transport modes and nodes aimed at reducing GHGs, developing emission-control regulations, and energy-saving policies (especially the use of solar-heating and wind power).

It will also be necessary to adapt an 'integrated approach to tourism management in order to accommodate medium- and long-term concerns, especially those centred on global warming … monitoring … climatic changes, focusing specifically on issues such as physical changes to destinations, visitor health and safety, changing markets, and changing tourist offerings (Steyn & Spencer, 2012:143).

**5) Conclusions**

Tourism is a major world industry and a huge contributor to the GDP of participating countries. The attractions (built and natural), events, and socio-cultural activities are all susceptible to the weather, and therefore climate change must be carefully monitored to ensure the continued economic sustainability of the industry. The excellent scenery, national park-systems protecting both flora and fauna, pristine beaches, good accommodation, sunny climates (and the winter equivalent for snow activities), healthy populations and adequate recreation facilities are all dependant on the daily weather and the climate over

an extended period. All this infrastructure could be at serious risk as a result of rising sea-levels, increasing temperatures, extended droughts and aridification, poverty, increasing levels of crime, changing health patterns, reductions in GDP; impacts of changes in climate as a result of GHG emissions.

Climatic changes could have negative consequences on farming and fishing: food production is vital to ensure tourism sustainability, and for job security and advancement. Warmer climates could also enhance tourism activities, including birding, water sports, and mountain- trail biking activities and the promotion of the natural environment. However, warmer weather could promote diseases; mosquitoes in the tropical regions would thrive, and cholera could range due to insufficient, and clean, water sources. A report by Templehoff (2009) suggested that food production in African states could decline by 50%, and poverty-driven situations could lead to increased crime, impacting on communities and therefore on the tourism industry in these regions. Amelung, Nicholls and Viner (2007) noted the increase in the number of cyclones/hurricanes in the Gulf of Mexico which had caused alternate drastic flooding and droughts, with the consequent change on daily livelihoods, tourists push (resorts, travel) and pull (destinations, attractions) factors, and on aspects including school holidays, seasonality, natural (including climate), and institutional and economic perspectives. Amelung et al. (2007) quote the devastation on coral reefs (including the Great Barrier Reef on the east coast of Australia), which could experience a decrease of 33% in extent by 2050 because of climate impacts, and the huge increases in heat-waves in the oceans which are estimated to have increased by 54% in recent years (Tempelhoff, 2019b).

The envisaged doctoral study on the possible effects on tourism of climate changes is limited to southern and eastern Africa but could draw comparable examples from other world regions where these have direct relevance on the study. The outcomes of the doctoral study should determine any scope for further research. One item that will need further investigation is the concept proposals on South Africa's future actions regarding the use of fossil fuels, published for public comments in the second week of May 2019.

**6) Case study: South Africa's policy towards climate change**

Although the policy addressed in the case study was developed a decade ago (2009), the promises and undertakings made were not implemented. In fact, the policies of the state-controlled electricity supply commission (ESCOM) have proved to be abysmal, and have led to massive corruption (including by the axed previous South African president), mismanagement, and stagnation of the economies of southern Africa, and are generally not understood by the majority of South African's, except that it is impacting heavily on their pockets as power cuts force citizens to purchase alternate forms of power generation. South Africa's case is not totally unique as Zhang and Wen (2008) discovered in their studies of Nigeria and China. They found that climate change was due to 'human activities' which participants said was expected, despite all the technological developments, as the citizenry sought to make life easy for themselves by using machines and the 'fuel' (for China read coal) to generate power even if emissions were dangerous and caused to health difficulties and climate change.

Huge industrial development has contributed to these GHG emissions and nobody, including the government, is taking responsibilities for the carbon pollution of the atmosphere, and the dense levels of smoke over industrial cities, which is causing respiratory-related illness. This is a similar situation to the industrial Highveld regions of South Africa with the huge iron and steel production plants, and, on a smaller scale, the oil refineries in the Gauteng area. No government will want to jeopardise an economy and will therefore turn a blind eye to emission-leakages, oil spills, toxic material dumps into water sources.

The case study by Masters (2009) analyses South Africa's commitment to the control of GHG emissions but reserves the 'right' not to implement this undertaking where it will counter any progress of the South African economy. It explains quite specifically that South Africa is really dependant on fossil-fuel for the continued and continuing development of the South African economy, which is vital for the re-distribution of the country's wealth, and the promotion of job-creation for the benefit of the previously marginalised black communities. The case study was presented before Jacob Zuma usurped power from Thabo Mbeki to became president of the country, and commenced with his (and the governing ANC) deliberate capture of state assets and enterprises which included the Electricity Supply Commission of South Africa, ESCOM, with the help of the Indian Gupta family.

South Africa's Policy Towards Climate Change

South Africa depends on fossil fuels to produce energy for itself and other countries of the SADC region. While these fossil fuel sources are abundant and cheap by world standards, they are classed as dirty in terms of the pollutants and the quantities there-of that power stations pump into the atmosphere. South Africa's carbon dioxide pollutions are far higher than those of Europe and the USA, when measured on a per capita basis. South Africa's 'emissions are 7.4 metric tonnes of CO2 per annum, compared to a world average of 4 tonnes.

South Africa is a signatory to several climate change agreements, including the Vienna Convention for the Protection of the Ozone Layer. The Government adopted the White Paper on Renewable Energy (2003), the National Climate Change Response Strategy (2004), and hosted the National Climate Change Conference in 2005, all seeking to eliminate (or at least seriously reduce) greenhouse gas emissions and address climate change issues. It also decided 'to demonstrate our seriousness and commitment to greenhouse gas reduction'.

The Government is showing signs of commitment to achieving the objectives of reducing greenhouse gas emissions through several actions. Separate departments have been created for Minerals and Energy, and for Tourism and Water and Environmental Affairs, ostensibly to 'allow more time and energy to be devoted to each, thus improving performance' said Buyelwa Sonjica (Minister of Water and Environmental Affairs).

In July 2008 the Long-Term Mitigation Scenarios (LTMS) were introduced, which highlighted a move to regulatory state action and to economic actions through taxes (including a carbon tax and a tax on air travel) and incentives for companies seeking energy efficiency. This was followed by the National Climate Change Summit in March 2009, to demonstrate the importance Government attached to domestic and international climate change negotiations.

Building nuclear power stations, and using the country's vast uranium deposits as fuel, is a long-term project. In the short term the Government's answer to the immediate energy crises is to re-commission moth-balled coal-powered stations, and to build new ones, using the abundant reserves of coal (which Eskom – the national power provider – claims are of poor standards), thereby increasing the carbon gas emissions, contrasting with Government claims of moving away from pollution in the interests of negating adverse climate change. South Africa also exports huge quantities of coal thereby contributing to dirty emissions in other parts of the world.

South Africa's policy on climate change does seem to be contradictory when considering world-wide demands for the reduction of greenhouse gases, and her own internal political and economic realities. The Ibhubesi oil-gas field development off the West Coast is going ahead, renewing the reliance on hydrocarbons.

While the Required by Science Scenario in the LTMS document called for no new coal-fired power stations, and the phasing out of liquid fuel from coal processes, the Government is proceeding with fossil fuel power generation. But, the LTMS document is not the official view of Government, who are therefore not bound by its findings or recommendations.

While present Government policy towards the use of fossil fuels, the control of greenhouse gases, and the commitment to ensure positive climate change is somewhat incoherent and credible, a Green Paper was published in 2010, aiming at a 'final National Climate Change Response Policy' which should recognise the seriousness of the climate change problem, and the development of finite policies towards South Africa's obligation to combat adverse climate change. Political will is needed, and hard decisions will have to be taken at national and international levels.

Source: Masters (2009)

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# Community participation for economic development of border town shopping in Malaysia

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**Key words**
Border town, Shopping, Community participation, Border tourism, Neighboring countries

**Abstract**

*Cross-border town for shopping attractions are considered one of the economic contributions towards the tourism industry in any given country. In Malaysia, few cross-border towns have emerged for many years, known to offer shopping attractions and experience. These territorial areas include Malaysia-Thailand border, Malaysia-Singapore border and Malaysia-Brunei as well as Malaysia-Indonesia border in east part of Malaysia. Though these cross-border towns are seen positively through economic perspective, but community participation in providing the businesses must also be investigated. Few issues have arisen which include low growth of the shopping facilities and business monopoly by neighboring countries' traders rather than the local community in the particular area. This research was conducted to understand the shopping tourism activities from the perspective of visitors, traders and local communities. Qualitative data analysis strategy was employed through extensive review of literature, personal interviews along with observations of visitors, traders and local. The findings indicated that most people visited these border-town shopping areas because they are influenced by the perceived variety of cheap goods, delicious neighboring countries food and activities that is not available or permitted in their home country. The paper concludes by discussing ways to support every level of the supply chain to facilitate the efficient development of shopping infrastructures, facilities and ideas for policy makers to help assist the economic growth of the local communities involved in cross-border town shopping business.*

## Introduction

Identified as a major motivator for leisure activities, shopping will always be the one of the reasons to visit or travel to new places. Past researchers have identified shopping as a form of therapy for every level of generations. Moreover, it has become the main economic activities in tourist destinations and the success of this economic model has prompt several agencies to expand the destination to entice more foreign tourists (Filipović, Jovanovich & Cicvarić, 2013). These efforts had become more global when the media take role in contributing ratings for every country around the world that is fancy by most shoppers. Ratings and ranking for these places are normally done according to prices followed by availability of goods, services and hospitality. Kuala Lumpur, the capital city of Malaysia has been ranked by a global news network, Cable News Network (CNN) as the top four for best shopping city in the world based on their annual survey to identify the 'top 10 best shopping cities around the world (Bernama, 2012).

Several factors are seen as the reasons why people travel for the purpose to shop. These may include the availability of products that are away from home, price differentials at the destination as compared to the home country, products and activities that is not available or permitted as well as the image and environment of the destination offered which may have not developed like what they usually experience in their home country (Nielsen, 2002; Werner & Kai, 2005; Titeca & De Herdt, 2010; Ghosh, 2011). At such, this has lead places around the world to become a popular shopping destination thus attracting more travelers to come all the way to certain destination to shop.

One of the types of shopping tourism that has attract considerable attention throughout all these years is shopping at border areas, known as cross-border shopping that normally occur in between two different countries. This unique type of cross-border shopping already emerged quite some time at certain places in Malaysia and a lot of border areas has started to pick up the activities as part of their local attractions. In Malaysia, cross border includes Malaysia-Thailand border, which can be found in few

northern states in the west peninsular and Malaysia-Indonesia border as well as Malaysia-Brunei Darussalam border in the east part of the country. The most common and well-known shopping activities at the border town can be seen in Padang Besar that located in Perlis, Bukit Kayu Hitam in Kedah and Rantau Panjang in Kelantan. While in east Malaysia, shopping activities are seen to be quite active at Serikin that located in Kuching and Tedungan in Limbang, both in Sarawak. One of the interesting features that may be the reason for its attractiveness is people can actually cross border without the use of passport, provided that they remain in designated market area (Azmi, Sulaiman, Asri & Razali, 2015).

**Problem Statement**

An ongoing issue pertaining to border town shopping activities would be the slow improvement of facilities and whether the development of these shopping areas can benefit local communities or not. This is because of business conflicts between the local sellers and neighboring countries traders, like Thais in Padang Besar and Golok and Indonesians in Serikin is seen to be not proportionate. In Padang Besar for example, Amir Salim (2002) and Azmi et al (2015) has already highlighted in their study that entrepreneurs especially those involve with shopping and tourism activities in this place majority are not be of the local community. Most of these traders are outsiders that find business opportunities and gain profit from it. Furthermore, it is commonly known and mentioned in some other studies that increasing number of visitors to a certain places has brought significant economic benefit to the local (Hui & Wan, 2008; Mugizi, Ayorekire & Obua, 2017) Unfortunately, it seems that this is not the case for some places around the world and definitely not to these border town areas in Malaysia by looking on who monopolize the shops and markets. Moreover, most foreign traders in these areas are the people who are active and communicate more with tourist as compared to the local communities thus the image and intention for revisitation of these visitors will have to rely mostly on them.

**Literature Review**

Border Shopping in Malaysia

*Padang Besar, Perlis*

Padang Besar, a border town that located in Perlis, the smallest state in Malaysia is borders with Songkhla province in Southern Thailand. Being the border town in the most northern part of Malaysia, it is also an important stopover for routes stretch all the way from Singapore to Thailand, be it the rail or road system. Most of tourists that looking for adult entertainment that famous in Thai border towns will normally cross here while the shopping activities mostly take place in Malaysian territory (Azmi et al, 2015). There are quite a number of marketplaces around the Malaysian territory area, but the main shopping activities can be seen happen in Padang Besar Business Arcade Complex (PBAC). Another attraction for shoppers would be the Emas Kerajang Duty Free Complex (EK) and Warisan Limpahan Duty Free Shops (WL), which offer duty-free shopping. However, for Malaysian travelers who would like to shop at these free duty complexes are obliged to declare their intention at the Malaysian Immigration checkpoint.

The main attraction of Padang Besar would be the price of the products and most of the product available for sale are produced and brought from Thailand. These include foodstuffs, apparels, cooking utensils, imitation jewelry and handbags as well as cosmetics. Majority of the traders in Padang Besar shopping areas are also Thai nationals. The facilities and infrastructure around Padang Besar are reported to be unsatisfactory, inadequate and not well maintained (Amir Salim, 2002; Azmi, A. Hamid, A. Wahab, Ramli & Mohd, 2014). Though number of complaints keep on submitted to demand for improvements from the traders and tourism suppliers for better developments in the area, it was still receiving lack of attention from the related stakeholders.

*Rantau Panjang, Kelantan*

Kelantan, a state that located in the north-east of Peninsular Malaysia and bordered by Narathiwat province of Thailand to the north. Both towns are separated by a small river that known as Golok river. Sungai Kolok (pronounce as go lok) is a border town on Thailand side while the Malaysian border side is known as Rantau Panjang. Though it is not as developed as Padang Besar, Rantau Panjang is still popular among Malaysian for its shopping, food and entertainment at night (Hussin, Abdullah & Maamor, 2012). However, since the bombing of Muslim separatist in the northern Thailand started in 2005 and frequent natural disaster like flooding, the activities getting slower, but visitors seem not reluctant to come down

especially among the local Kelantanese and neighboring states like Terengganu and Pahang (Hussin et al, 2012).

Several shopping venues in Rantau Panjang area is seems to be selling goods from Thailand. According to study done by Hussin et al (2012) identified issues and problems faced by traders in Rantau Panjang duty free zone mainly are on the difficulties of local traders to compete with Thais traders who renting their business stalls the local citizens. In the same study done by Hussin et al (2012), it was found the about 77% of the premises in the duty-free zone were rented from the original owner without proper documentation and procedure known to the authorities. Thus, business also monopolized by Thai traders in this border town in Kelantan.

*Serikin, Sarawak*

Sarawak is another state that located at Borneo Island in Malaysia and bordered with Indonesia as well as Brunei Darussalam in the north. The small village of Serikin that located 65km from the capital city of Kuching and situated at the Malaysia-Indonesia border seen a thriving cross border trading activity throughout all these years. This small village will be transformed to a marketplace that flocked by high spirited traders from Indonesia who regularly cross the border every Friday evening as the market will only be opened on Saturday and Sunday. Research done by Awang, Sulehan, Bakar, Abdullah and Ong (2013) showed that most of the traders are Indonesians who comes from various part of West Kalimantan. About more than 85% of these Indonesian traders came either using their own cars, rental van or trucks and park at the Kalimantan borders. They took about four to eight hours drive going and coming back from Serikin town and they will repeat it every weekend without fail. Though most of these traders are coming from the undeveloped part of West Kalimantan, it did not stop them for being courageous and high spirit to carry out their business and communicate with the visitors, who majority coming from the West Malaysia (Muzvidziwa, 2001). Awang et al (2013) also mentioned in their study that there were very few of local seller that actually from Serikin and almost none from the nearby village as well.

*Community Participation in Cross Border Shopping*

The concept of community involvement in tourism especially the one involving two different countries in the border areas were less studied. There are few questions mentioned in the study by Tosun, Temizkan, Timothy & Fyall (2007) on how to emerge equal participation from both countries, who will help in the process and on to what extend for it to pass so as to become a reality. Similar questions were asked in a much more earlier studies involving the process of community participation to progress that normally differ according to different country and prevailing local conditions under which community involvement will be practiced (Tosun et al, 2007; Cassidy, 2011).

A study carried out by Myer-Ohle (2009) on the shopping activities in developing countries like Singapore showed that cross-border trade activities benefited the traders on both sides of the borders. Blatter (2000); Muzvidziwa (2001); Damon & Jeuring (2009); United Nations (2010) all agreed in their report study that cross-border trading contribute to the economic development of an area as well as bring the local people out from the cycle of poverty.

**Research Methodology**

This study started with an extensive literature review in an attempt to understand the shopping activities at the three major border town around Malaysia. Following the review, initial study was conducted to gain better information on the development of infrastructure and facilities that comes with tourism activities in these places, which further lead to the understanding of the location. The discussion from initial study then led to the design of the main study, including the context, the participants, data collection procedures and data analysis method in interpreting the qualitative data. Personal (one to one) in depth semi structured interviews with the locals and visitors were conducted to understand their perception towards the community participation and border shopping development at these places. There were total of 49 respondents being interviewed for this study at the three border towns; Padang Besar, Rantau Panjang and Serikin. 21 respondents (6 local community, 3 Thai traders and 12 visitors/shoppers) were interviewed in Padang Besar, 10 respondents (2 local community, 2 Thai traders and 6 visitors/shoppers were interviewed in Rantau Panjang while 18 respondents (2 local community, 6 Indonesian traders and 10 visitors/shoppers) in Serikin. The conversation during interview have been

precisely and carefully recorded which then analyzed using thematic analysis that examining the patterns between all of the border town included in the study.

Thematic analysis was applied to recognize and examine the patterns that appeared enclosed in the data sets (Braun & Clarke, 2006) which has been conducted at two levels for this study. Intercoder reliability test was carried out to prove the reliability of the thematic analysis. Based on Cohen's kappa (1968) index assessment, the intercoder reliability for this study is acceptable at 0.819.

**Findings and Conclusion**

The demographic profile of all the people who were being interviewed at all the three-border town. From the respondents, 73.4 per cent were females, and 26.5 per cent were males. Majority of the participants (47.14 per cent) were between 28 – 37 years old, and by 38 – 47 years old (45.71 per cent). For ethnicity, majority were Malay (57.14 per cent), followed by foreign traders who are Thai and Indonesian citizen (22.45 per cent), Chinese (9.86 per cent) and Indian (3.27 per cent). 100 per cent of the visitors/shoppers' motive coming to these border town is to shop and more than half (71.4 per cent) of the respondents (visitors/shoppers) had been to the particular border town more than once.

Table 1: *Result of the interview of trade participation*

| Question | Most commonly cited themes |
|---|---|
| Main motivation to do business in this area? | Better money as the exchange rate is higher (11 entries)<br>Earn so much as compared to working in hometown (9 entries)<br>Help to change lifestyle (8 entries)<br>Business is good every week (6 entries) |

**Determinants of Trade Participation in Border Town Area**

Respondents from all border town shopping areas, Padang Besar in Perlis, Rantau Panjang in Kelantan and Serikin in Sarawak who are among the traders were asked why they involve in doing business at the border town area. All mentioned that their main reasons are interested in business, prefer doing their own business and gain better income. This in line with the study done by Peberdy (2000); Hampton, (2010); Bruns, Miggelbrink & Muller (2011) in South Africa and Indonesia whereby their respondents are also primarily driven by opportunities to earn better income by doing own businesses. The following feedback from the traders were noted and demonstrates in Table 1.

*Business is good. Every week I can earn about MYR6000-MYR8000 by selling rattan mat, which is highly demanded by visitors coming from West Malaysia. Respondent 15 (Serikin Indonesian trader)*

*Selling 'kerepek' (Thai chips) in Padang Besar has helped me so much with my income and has change my family's life. I can easily earn up to MYR800 – 1200 per day. Respondent 17 (Padang Besar trader)*

Table 2: *Result of the interview for facilities development*

| Question | Most commonly cited themes |
|---|---|
| What did you think / rate the facilities development in this area? | Dirty toilets (36 entries)<br>Shops are hot (35 entries)<br>The stalls are poorly maintained (26 entries)<br>It was crowded (24 entries)<br>Poor infrastructure (19 entries)<br>Facilities were not improved but more stalls than before (19 entries) |

**Determinants of Facilities Development in Border Town Area**

Table 2 showed that majority of the respondents were not happy with the slow development of facilities in the shopping area. These responses appeared to be similar with study done by Amir Salim (2002) and Azmi et al (2014) where their respondents agreed that infrastructure of the shopping facilities are not adequate, not cleaned, and totally not in a satisfactory level. Though concerns have been raised in the past, lack of attention from the responsible parties has led to the same issue brought up today (Azmi et al, 2014). On the other hand, study done by Goh et al (2014); Azmi et al (2015), stated that majority of their respondents are quite optimist with the development of these shopping area by looking at the increasing number of visitors every year despite of the poorly maintained infrastructures. They also feel that border

town shopping had a great potential to be vibrant and to be developed as major tourist attraction in the country.

There is a need for stakeholders' participation in monitoring and came up with strategic evaluation that could attempts in establishing the balance of the area. Current visitors' perception remarks showed that there is a big gap between the facilities development compared to the robust growth of business stalls and shops in the border areas. Some feedback from visitor's perception remarks are quoted below:

*The tourism for Perlis depends mostly on this border town shopping thus the need for infrastructure and facilities to be improved soonest. Respondent 22*

*Stalls are too poorly maintained. Not fan inside the stall and here in Serikin the weather is hotter than usual. No development just more shops now. Respondent 34*

*The whole area was too crowded, and toilets are in bad condition. More shops now but facilities getting worse. Respondent 8*

Table 3: *Results of the interview for visitors' perception on local community involvement and participation at the border town*

| Question | Most commonly cited themes |
|---|---|
| Do you prefer to see more local traders doing business here? | Came to buy items from Thailand/Indonesia (28 entries)<br>Interesting to deal with foreign traders (22 entries)<br>Cheaper if coming from Thai/Indon (19 entries)<br>Different experience to see foreign traders (17 entries) |

**Determinants of Visitors' Perception on Local Community Involvement**

Cassidy (2011) highlighted that the experience of consumers in every shopping destination play an important part in economic development and social life. Therefore, destinations must take the opportunity to develop genuine and distinctive experiences that will add value into the journey taken by them and will help in tourism brand and positioning (UNWTO, 2016). All three-border town shopping area is in the territorial space that still within Malaysian boundary. However, all three experienced the influx of neighboring countries traders, Thais in Padang Besar and Rantau Panjang, Indonesians in Serikin that monopolizes the shops and stalls which seen to cause loses of ownerships for the local community. However, feedback from visitors showed that their main purpose coming to these border town areas are to purchase neighboring country goods and to deal with foreign traders.

*It was interesting to be able to shop in a different environment without you have to bring your passport. Respondent 3*

*Majority of the Indonesian sellers who are doing business here are very nice and it doesn't bother me that majority of the stall operated by them. Respondent 32*

*This is the reason I came to this market. I wanted to buy Thai food ingredients and I can only get it here, with a cheap price. It is also interesting to communicate with them. Respondent 20*

Table 4: *Results of the interview for determinants on local community participation*

| Question | Most commonly cited themes |
|---|---|
| Any benefit that you gain from the business activities in this area? | Rent out shops and house to foreign traders (7 entries)<br>Selling food and drinks to traders and visitors (3 entries) |

**Determinants on Local Community Participation towards Business Activities**

Earlier studies by Schoenberger & Turner (2008); Mat Som, Mohamed & Wong (2005) showed that the cross-border trading network is often a complex situation that practiced by people of the local communities and neighboring country traders. The study done by Mat Som et al (2005) have seen the growth of tourism related activities in the border market has increased the local participation in tourism. However, according to Suksuwan (2002), there is an obvious leakage of revenue when it comes to shopping activities as the neighboring country traders is seen to be benefiting more from the border town markets compared to the local traders.

On a different note, Tomari (2010) highlighted in his study that there is no other town in any country that could compete with the range of products at the border. Besides the interesting and wide

range of products, price is more likely be the main factors to select a shopping destination for any shoppers. Subramaniam, Devadason & Sundaraja (2008); Mat Som et al (2005); Kuncharin & Mohammad (2013) all agreed that the price of products in border land is highly competitive as most of the shopkeepers usually sell similar kind of products in the market.

The increasing number of visitors has always brought significant economic benefit to the local community. Feedback gathered from the three border town shopping areas showed that local community are getting their portion from the benefit of influx visitors into these border town from a different kind of sources. They getting profit from renting out their stall to the foreign traders, set up stall and leased it to these traders, renting out the open areas at their house compound for parking space, operating restaurants or food stalls, room for rental that highly required by the Indonesian traders every weekend to do business in Serikin and most importantly, charging entry to toilets for visitors. Some feedbacks from the local communities regarding their participation in the border town market are shown in Table 4.

*I set up stall and leased it out to Indonesian traders for MYR60 – MYR80 (USD 20 – USD25) monthly. I also open rooms in my house for rental to these Indonesian traders and they will pay me around MYR35 – MYR45 (around UDS10) per night. Respondent 37*

*We operate food stalls that cater not only for visitors but for the Thai traders as well. Respondent 22*

*We rent out our stall to the traders at the 'Horse Barn Marketplace' which they have to pay rentals on monthly basis that range from MYR12 to MYR165 (from USD3 to USD 45). Respondent 44*

**Conclusion**

This study examined the economic development of three major border shopping town in Malaysia. The findings are in accord with previous studies that relate the development of infrastructure and facilities in the border town market. This was initially pointed out by Azmi et al (2014), whereby there are still lot of improvement need to be taken care of by related stakeholders and action need to be taken as soon as possible as number of visitors are increasing every day causing the facilities at the market area getting unbearable hence making visitors, traders and local community feel uncomfortable during their visit.

Studies done by Myer-Ohle (2009); Mugizi et al 2017; Musadad, 2018 showed that cross border activities benefited the economy of community from both side of the countries. Though foreign neighboring countries traders seems to be the one earned the most from these cross-border businesses, but somehow the local communities were happy with the spilled over income from other sources that came along with these activities (Mat Som et al, 2005). Some may raise the question if it is better or worse that there were more foreign traders coming and doing business at the border town and local participation is only at a minimum level. Thus, from this study it could be argued that it is not a matter of better or worse as the former cannot be replaced with the latter looking at majority of visitors coming to the border town are looking for products that were brought in from the neighboring countries.

Figure 1 presents the study framework that emerged from the findings of this study. It proposes variables that can be studied in exploring the causes and impact for better economic development in border town area. For future research also, it may be insightful to investigate and compare in detail each of the activities, participation and issues arises between all the border town in Malaysia as this has becoming part of the important attraction in the country.

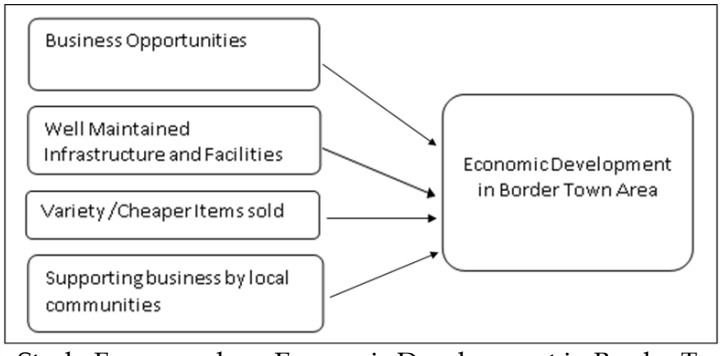


Figure 1: Study Framework on Economic Development in Border Town Area

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# Tourism to the Table Mountain national park: community beneficiation

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**Key words**
biodiversity, community beneficiation, conservation, protected areas, stakeholder perspectives, tourism development

**Abstract**

*The management of protected areas need to be done in a sustainable manner, which includes ensuring that various stakeholders' needs are considered. Park management need to work closely with these stakeholders particularly communities surrounding them to allow for opportunities that do not compromise the integrity of the area and contribute to local economic development. The objective of this study was to examine how local communities are benefiting from the management of Table Mountain National Park (TMNP). It also looked at the projects which the park has proposed to maximise community involvement as a way of ensuring that locals enjoy the economic spinoffs from the park. The study details partnership challenges between park and communities. Analyses were grounded on semi-structured interviews with the identified stakeholders with knowledge of how the park operates. Key findings indicate that TMNP strives to create opportunities for communities and these include; skills development and training, job creation, as well as entrepreneurial prospects to its neighbouring communities.*

## Introduction

Conservation efforts especially within protected areas can be successful when community benefits are maximised. Community members residing around the park's surrounds need to also reap the benefits from the tourism-economic activities which take place in protected areas. This is done for several reasons, including poverty alleviation, discouraging participation in illegal activities (i.e. poaching, fishing and logging) by community members, and providing a sense of ownership and support for all efforts aimed at conserving the biodiversity (Spenceley & Goodwin, 2007). It is therefore important to always review the level of community benefit to ensure that locals are fairly benefiting from protected areas' economic activities. Butler and Richardson (2015) contend that national parks attract millions of tourists each year, and contribute significantly to the tourism economy, hence, this research article aims to unpack how communities that are located adjacent to the Table Mountain National Park (TMNP) in Cape Town, South Africa benefit from the park (the stakeholders' perspective). The South African Government acknowledges the importance of protecting national parks hence designating them as protected areas, being done to ensure that both humans and the biodiversity live in harmony. Communities around the park need to be empowered to benefit from the economic activities since this is anticipated to generate a 'sense of ownership and a need to protect the park' (Mthimunye, 2017:1). Keitumetse (2011) refers to communities as carriers and immediate custodians of cultural resources in Africa; the same can be said about natural resources.

Many tourism businesses often gain enormous benefits (mainly economic) from natural and cultural resources, often belonging to local communities. Most of these benefits are enjoyed by businesses while local community members surrounding the parks are left with limited benefits from the natural endowments which they should fully own. This thus calls for a pragmatic management approach by various stakeholders to ensure that communities are involved in a way which ensures community beneficiation (Castro-Arce, Parra & Vanclay, 2019). In light of the above, sustainable management frameworks guided by national policies need to be implemented with emphasis on ensuring that locals do own and benefit from protected areas' activities. The United Nations Educational Scientific and Cultural Organisation (UNESCO, 2002) notes the existence of an imbalance of benefits between local communities

and the parks. This therefore calls for mutually beneficial linkages between various stakeholders to allow all players to fairly benefit from the management of natural resources (biodiversity).

In South Africa, national parks work as powerful tourist magnets drawing in huge numbers of tourists who come to experience the country's biodiversity (Saayman, Saayman & Rossouw, 2013). They further add that these protected areas act as major export earners and as such, are important part of the tourism industry. This is mainly because of their power to contribute a significant proportion of the national gross domestic product (GDP), foreign exchange earnings and employment figures (Saayman et al., 2013). Despite the tough economic times the South African economy faces, the country continues to receive much revenue from the management of protected areas for example, in the year 2017/18, over R2.1 billion (over US$137 million) total revenues was generated from the country's national parks (SANParks Annual Report 2017/18). The national conservation agency, the South African National Parks also referred to as SANParks, sees the importance of 'social sustainability' which is realised when local communities are successfully benefitting from tourism initiatives (Saayman et al., 2013:440). The World Wildlife Fund (2004) supports the need of ensuring that protected areas are managed in a sustainable way as this results in effective fulfilling of the objectives of biodiversity conservation, environmental management and the protection of the world's cultural heritage.

SANParks works as a system which has a vision to work closely with communities and ensure that the management of biodiversity is sustainable. This organisation has shown that it has significantly transformed from upholding a vision which solely focuses on environmental preservation and exclusion of communities surrounding the park, into a responsible practice that strives to connect with societies (SANParks, 2019a). Under the apartheid era (a time when South African laws segregated people based on race), no or very limited access to protected areas was permitted thus limiting community beneficiation from the natural diversity in their vicinity (Sibiya, 2017). During this era, the mission of SANParks mostly concentrated on maximising benefits to park management. However, the ending of the apartheid system brought with it many changes to the way protected areas were to be managed. This was informed by national policies with several amendments aimed to develop, expand, manage and promote a system of sustainable national parks that represents biodiversity and heritage assets, through innovation and best practise for the just and equitable benefit of current and future generation as indicated in the 2016/17 SANParks' Annual Report (SANParks, 2019b).

As a result, on average, many of the people living next to parks can be characterised as low-income earning households, with high levels of unemployment, high dependency on social grants and high reliance on subsistence agriculture and natural resources. SANParks' Table Mountain National Park has made a concerted effort from the mid 1990's to engage positively with local neighbours in order to build positive relationships. However, it was only in the Protected Areas Act Number 57 of 2003 where National Parks were officially defined as existing for sustainable use by broader society and where an emphasis was placed on their potential contribution to local economic development and the ecosystem goods and services that flow from them.

Saayman et al. (2013) note the change which national parks have gone through especially in their management and contribution to local communities. This has been made possible by the SANParks' National Conservation Agency, which strives to ensure that local communities surrounding these protected areas benefit from their management (Venter, Naiman, Biggs & Pienaar, 2008). These benefits should have the power to alleviate poverty, especially since most communities adjacent to national parks are rural with "poor quality socio-economic infrastructure and services, high rates of unemployment and high levels of poverty …" (Pelser, Redelinghuys & Velelo, 2013:1210). Some national parks especially in East Africa have pursued the profit-sharing approach as a strategy to achieve sustainable management of the parks (Tumusiime & Vedeld, 2012). The profit-sharing approach has been accepted globally as a key instrument for preserving protected areas including national parks. The tourism proceeds sharing approach seeks to ensure that various stakeholders share the responsibility of managing and conserving the world's biodiversity. These stakeholders include community, businesses, Non-Governmental Organisations (NGOs) and the government. Tumusiime and Vedeld (2012:15) note that the approach promotes "hybrid environmental governance" where responsibility and revenue is shared for the sustainability of the activities. Using the concept, local community members residing close to the parks receive a certain percentage from the proceeds which goes to the park.

National parks in South Africa are visited by millions of tourists, and therefore entrepreneurial opportunities and cultural tourism opportunities should be created. The United Nations Environment Programme World Conservation Monitoring Centre [UNEPWCMC] (2008) states that the level of community involvement varies greatly between individual protected areas, organisations and countries, and in relation to their management category and form of governance. In the case of an urban park, the relationship between conservation and the local community may be even tenser and should be managed in a more effective way (Saayman et al., 2013).

Natural diversity serves as a key drawcard for tourists to Southern Africa, particularly in South Africa's Kruger National Park and TMNP among other protected areas. The long-term conservation of this natural diversity occurs mainly in protected areas such as the TMNP which is managed by one of the biggest ecotourism product owners, SANParks, which currently manages 21 of South Africa's national parks, which are situated across South Africa, conserving the biodiversity, landscapes and cultural heritage of the country (Engelbrecht, 2011). However, Mearns (2002) notes that many conservation efforts from the late 1800s and early 1900s either displaced local communities or restricted their access to natural resources. This affected local communities' attitudes towards protected areas and only at a later stage were efforts put in place to rectify these conflicts (Snyman, 2014). The future success of conservation and ecotourism in many protected areas will depend on the attitudes and behaviour of communities living in or adjacent to these areas (Snyman, 2014), thus the need to continuously empower communities. Approaches are thus required that effectively engage local people in management and decision-making that enable their livelihood needs to be adequately met as it is important to link protected area management with the economic activities of locals (Bajracharya, Furley & Newton, 2006; Mearns, 2002).

In South Africa, the National Environmental Management Act (Protected Areas Act 57 of 2003) requires government-funded protected areas to provide 'benefits' to neighbouring communities and contribute to the development needs of poor communities outside of the reserve (Taylor & Atkinson, 2012). Saayman et al. (2013:440) state that the role and contribution of local communities in managing national parks has changed significantly over the past few years. This is due to a paradigm shift at the National Conservation Agency of SANParks from traditionally being a pure conservation agency to becoming a conservation agency striving to benefit and empower local communities. The management of the TMNP is informed by various SANParks and South African Government policies and management plans. The Planning Department is responsible for the management and updating of all policy documents (SANParks, 2015).

TMNP's primary purpose is to manage areas of important biodiversity, scenic resources and cultural heritage, including on the Cape Peninsula, while allowing for opportunities that do not compromise the integrity of the area and contribute to local economic development (TMNP Management Plan, 2008). Malan (2009) states that in the context of co-operative environmental management, concepts such as inter-governmental relations, partnerships, collaboration and co-management are brought into consideration, thus emphasising the importance of working together and soliciting public input to manage the environment in a sustainable manner.

The SANParks Management Plan Policy Framework (2006) sums up by stating that the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons. SANParks recognises that parks must serve societal values and that they need to be part of and interrelate with the broader landscape and socio-economic context within which they are situated (City of Cape Town, 2015). TMNP is a people's park meaning it considers the local communities in its mandates (City of Cape Town, 2015). Interest in the management of the park ranges from individuals, entrepreneurs and recreational user groups to environmental and social pressure groups, local, provincial and national government departments (City of Cape Town, 2015).

The objective of this study was to examine how local communities are benefiting from the management of TMNP. It also looked at the projects which the park has proposed as a way to maximise community involvement and ensure that locals enjoy the economic spinoffs from TMNP. The study also details partnership challenges between park and communities. Analyses were grounded on semi-structured interviews with the identified stakeholders with knowledge of how the park operates.

## Methodology

### 2.1) Study area, design and data collection procedure

TMNP is found in the Western Cape Province of South Africa, stretching from the Signal Hill in the north, and to the south, Cape Point which sits at the southeast corner of the Cape Peninsula (TMNP, 2008; Draft TMNP Management Plan, 2015). This park is South Africa's largest urban park, and includes a marine park (Saayman et al., 2013). The TMNP is unique as it includes one of the modern ''Seven Wonders of the World'' and being part of the Cape Floral Kingdom, which is the smallest floral kingdom in the world, but with over 8 500 plant species is the most diverse in the world, of which 70% are endemic (Draft TMNP Management Plan, 2015). TMNP is of international importance receiving over six million visitors annually, being a national and international tourist destination (Sibiya, 2017).

In 2004, the national park was subsequently changed from Cape Peninsula National Park to the TMNP and this was proclaimed on the 28th of May 1998 in terms of the National Parks Act (SANParks Stakeholder Engagement Report, 2015). The decision to establish the TMNP was made by South African lawmakers in April 1996 when the cabinet chose to appoint SANParks as the future management authority for the Cape Peninsula Protected Natural Environment (CPPNE) with the intention to declare it as a national park (Steven & Associates, 2006; TMNP Management Plan, 2008, Draft TMNP Management Plan, 2015). TMNP is part of the SANParks network which manages a system of parks which represent the indigenous fauna, flora, landscapes and associated cultural heritage of the country (SANParks, 2015). According to the National Environment Management: Protected Areas Act (NEM:PAA Act No.57 of 2003), TMNP should be managed according to the purpose for which it was declared which includes the area within, and conservation worthy land adjacent to the national park which must be managed to ensure the development of a prosperous, healthy, culturally rich and scenically attractive Cape Peninsula for the benefit of all residents and visitors and the optimal use of the areas unique set of natural and cultural resources (City of Cape Town, 2015). One of the Park's current intentions include allowing spiritual, scientific, educational, recreational and tourism opportunities which are environmentally compatible and contribute to economic development (City of Cape Town, 2015).

Figure 1 shows the map of TMNP area illustrating its expanse, and the suburbs in its three sections. The Northern Section is where the main tourist attraction, Table Mountain is found, with various more affluent suburbs on the coast from the Victoria and Alfred (V&A) Waterfront to Llandudno. On the other side of the Northern Section, suburbs such as Rondebosch, Claremont and Newlands are noted. The Central Section stretches from Hout Bay (with Imizamo Yethu), Chapman's Peak to Noordhoek on the coastal side while on the other side, one finds TMNP headquarters and other suburbs. The coastal towns of Muizenburg and Fish Hoek sit in the Central Section. Finally, the Southern Section of TMNP's stretch is surrounded by coastal suburbs including Simon's Town, Boulders Beach, Kommetjie, Scarborough and to the far south, Cape Point.

Figure 1: Map of TMNP area
Source: SANParks (n.d.)

The methodology assumed for the study followed the adoption of a qualitative approach, using in-depth, semi-structured interviews conducted with key stakeholders of the TMNP area. More specifically, eight stakeholders who had knowledge about TMNP's operation and those affected by the park were

selected for this study (see Table 1). These stakeholders included; two Municipal Councillors, Tour Operator/Local Guide, Conservation Officers, TMNP Area Manager, Project Contractor, and Community Liaison Officer responsible for conservation. By adopting a qualitative approach to the current research study, the researchers considered it appropriate to gain a complete overview of stakeholder perspectives, regarding the research topic at hand. Consequently, the stakeholders were purposefully selected by virtue of their characteristics, which had some bearing on their insights and experiences regarding the progress made since 1994 in relation to the management of TMNP and community beneficiation initiatives. Prior to commencing this study permission was sought from TMNP authorities which granted a licence to access the park and conduct the study (Research Permit - CRC/2016-2017/018-2016/V1).

| Respondent Identifier | Designation |
|---|---|
| Participant 1 | Conservation Officer – Youth Development |
| Participant 2 | Social Development Coordinator |
| Participant 3 | TMNP Area Manager |
| Participant 4 | Community Liaison |
| Participant 5 | Local Counsellor – Llandudno, Hout Bay, Hangberg and Imizamo Yethu |
| Participant 6 | Local Counsellor – Fishhoek |
| Participant 7 | Tour Guide/Tour Operator |
| Participant 8 | Contractor |

Table 4: The study's participants and designation
Source: Researchers' construction

All the interviews were conducted with the prior consent of the study participants. Each interview was conducted at a location chosen by the respondents, which was usually their workplace. Some respondents were comfortable with answering the questions by typing their responses and returning data via electronic mailing. The semi-structured interviews were guided by a set of questions relating to the topics identified through the literature review, although the interview procedure consisted of open-ended questions that allowed the interviewer to probe, or clarify issues raised, and to explore the particular areas of experience, or expertise of the respondents involved. The focus of the interview questions largely centred around community beneficiation in relation to the management of TMNP. The interviews lasted between 40 to 50 minutes. These interviews were digitally recorded and manually transcribed verbatim. Effort was made to ensure the validity and reliability of the data, by means of constantly checking the interview transcripts, as well as continuously comparing them to the interview recordings and field notes made during the interview. A thematic presentation of the results is outlined in the following sections.

## Findings

### 3.1) Community projects and involvement

In trying to ascertain level of community involvement in the park's activities, the researchers asked the participants about their involvement and the projects they were involved with. To further get a sense of community benefit, the respondents were also asked to indicate whether locals were involved in some of those projects. It was revealed from the study that local community members were involved in some of the projects in the TMNP. One excerpt to confirm this was the following "*I run the Junior rangers and 2 eco-clubs. Previously we had the 'Kids in Parks programmes' which brought 500 kids to the park for 3-day stays (over 5 weeks)*" (Conservation Officer - P1). The respondent was however reluctant to disclose the exact communities which were involved in the mentioned project. The purpose of involving communities in the Park project was to ensure that access to the park was permitted and promote sustainable living and career development.

Community members coming from different areas bordering the Park including; Sea Point, Camps Bay, Constantia, Mitcheles Plain, Hangberg, Llandudno, Hout Bay, Masimpumelele, Langa, Ocean View, Imizamoyethu and others further away are empowered through getting training as seen in the study's findings "*… offer training to SMMEs on how to start businesses, several businesses including emerging small ones are supported … they also receive useful information, assisted to get permits to do business in the park*" (Community Liaison Officer – P4). These members also participate in various projects such as the alien-vegetation clearing initiative among others. The Park's commitment to keep the park beautiful, clean, ensuring safety and security is made possible through the community's involvement in Park's affairs. They also help to raise awareness about the importance of biodiversity conservation.

The researchers also wanted to establish how the Park works with local community members. The results from the study showed an agreement between participants that communities surrounding the Park are involved in some projects which are initiated by SANParks. However, from the responses, it was noted that the projects were not only limited to communities adjacent to the Park. Other communities including Mitchelles Plain, Langa, Khayelitsha and Gugulethu for example were also involved and benefiting from TMNP. School children are brought into the Park by buses, so as to learn more about conservation of nature. The Expanded Public Works Programme (EPWP), a government initiative aimed at reducing poverty in the communities that border the park was one of the programmes identified by the respondents. This programme seeks to offer training and create opportunities mainly targeting the following communities; Masiphumelele, Red Hill, Imizamo Yethu, Hout Bay, Ocean View, Westlake, Loyolo as well as other areas on the peninsula (SANParks, 2019). Through the EPWP, "*…training and setting up of SMMEs*" has been possible (Conservation Officer: Youth Development - P1). One contractor who is working in EPWP projects had this to say "*I have been trained by the Park in giving first aid; HR management and financial management. With my salary I have bought myself cars; built a house and I support my family*" (Contractor – P8).

The study participants were also asked if they were aware of any entrepreneurial opportunities available for communities close to the park. The Conservation Officer indicated that there were efforts by the Park to develop and register small businesses. However, the other participants were aware of locals who run SMMEs including catering service at their meetings and events. Some community members run small transport businesses and are contracted by the Park to offer transport services. In addition, there is the training of tour guides and these come from the adjacent communities.

**3.2) Community beneficiation from Park**

Local community who share geographic proximity with protected areas must accrue the economic opportunities and benefits (Means, 2012). The opportunities and benefits are particularly significant in Africa, where local communities near and on boundaries of protected areas are often vulnerable with high rates of poverty, unemployment, illiteracy and distorted patterns of land use (Naughton-Treves, Alix-Garcia & Chapman, 2011). Naughton-Treves et al. (2011:1319) note the blame that is usually placed on protected areas for increasing poverty in the tropics "because they prevent local access to resources", thus presenting hardships during times of crisis. The poor usually view conservation of protected areas as a move by parks to allow the wealthy foreign visitors to enjoy from their resource. This triggers resentment which should be managed in a strategic way for example ensuring that local communities also reap the economic opportunities and benefits from the protected areas. It should also be remembered that communities surrounding parks used to obtain resources such as wood; grass, herbs and sometimes meat through hunting before these areas were fenced as parks. Their access is now limited and controlled in most instances.

With regards to the TMNP, results indicate that local communities have received a number of benefits from conservation, including improvements in access to the Park. The TMNP is an open access park where communities come and go as they please, as the Park is not fenced. Infrastructure has been improved in the Park especially the footpaths and these helped in promoting local jobs. This is a conservation effort as many visitors to the Park usually hike up the mountain.

Locals are also involved in setting up of infrastructure that is used by local people, that is, stalls, restaurants, arts and craft markets. Maintenance of infrastructure is done by local community members and they are also involved in a number of projects including alien clearing/cleaning, beach cleaning and for these projects to go ahead sustainably, local contractors are preferred.

Some of the benefits which locals enjoy including getting discounts to use some of the Park's facilities. The study also revealed that school groups are given free access to the Park which is aimed at raising awareness of conservation and exposing them to the country's biodiversity. Other benefits which were cited by the study's participants included:

Free permit to collect wood in their bakkies

Locals can also come to harvest reeds and for this no permit is required

Free access in the heritage month September as a way to promote locals to come and experience the protected areas.

### 3.3) Partnership challenges between Park and communities

A number of challenges are experienced when it comes to the management of protected areas which presents some complexities on the partnerships between communities and the Park. From the current study, poverty featured very prominently as one challenge affecting communities on the boundaries of the Parks. TMNP is surrounded by several communities which are both affluent and poor. The affluent areas on the boundaries of TMNP include the following suburbs: Camps Bay, Llandudno, Sea Point and the Fish Hoek fishing village, among others. On the other side there are poor townships, for example Imizamo Yethu and Ocean View, with large populations contained in smaller areas. Usually the expectations of these groups (rich and poor) vary which at times makes the partnership between the parks and community a bit challenging. Highlighting the differing expectations from the rich and the poor communities surrounding the Park, the Local Guide, also a resident of Imizamo Yethu indicated that locals "*expect the Park to give more land for housing …*" whereas on the other hand residents from the richer suburbs such as Llandudno "*… would strive to do anything possible to ensure the Park is conserved*". There is one challenge noted that those residents staying on the boundary of the Park "*… have a tendency of encroaching the land and at times destroying the demarcated boundary into (sic) the Park area*" (Contractor – P8). Consequently, this creates huge tension between the Park and communities. It has been noted that communities closer to the Park live with limited amenities and services, high levels of unemployment and poverty (Pelser et al., 2013) and this generates higher expectation by community members especially the creation of jobs.

The use of the Park by the poor and rich communities generally differ with the wealthy using it for nature walks, dog walks, camping, picnic, sport (jogging, quad biking and cycling) among other uses. Conversely, the poor communities use the Park to obtain natural herbs especially traditional healers and herbalists (*sangoma*) as well as Rastafarian. These uses may conflict with each user's interest for example as highlighted by the TMNP Area Manager (P3) who views the "*affluent suburbs prefer peaceful and quieter environments*" and this may not be the case with those who use the Park for spiritual connection especially those who conduct religious activities in the protected areas. An example of a suburb in close proximity to the Park was given, "*… the affluent residing in Camps Bay always complain of high noise levels from those who use the Park for their spiritual awakening … they sing loudly during the night and at times beat drums which is so disturbing to them*" (TMNP Area Manager – P3). Several religious groups are renowned for using the Park for spiritual purposes which poses a problem to those with a different belief. It was also revealed from the interviews that there seems to be no formal community-use agreements for the use of biological resources within the Park. Conversely, there are numerous traditional practices and religious services that are conducted in the Park. Because there is no official record of these people who come to use the Park for religious as well as traditional purposes, it becomes difficult to monitor the activities. However, informal records of the extensive medicinal use of many of the plant species from the Park do exist.

It was also indicated that it is quite difficult for local community members to access business opportunities which limits their potential to benefit from the Park. Therefore, more sustainable ways of ensuring that community members benefit from opportunities need to be devised for example empowerment through proper training can be expanded. This training may include aspects on "*how to start and successfully run a business thus encouraging entrepreneurial skills*" (Conservation Officer – P1).

This study has revealed that visitor numbers to national parks has risen and the numbers continue to grow. However, with the 'open access' nature of TMNP, it has become difficult to collect exact figures relating to visitor numbers to the Park, however statistics exist only for the gated entry points. For 2017, visitor numbers had grown as indicated "*… visitor fluctuation but has increased to 4.8 million …*" (TMNP Area Manager – P3). The Park now has also open access which was not the case during the apartheid era. This has made it hard to collect statistics of exact numbers of people who use the Park. Many picnic sites for example Oudekraal and Newlands are accessed by community members as well as tourists and it is difficult to keep a record of these numbers. In terms of facilities, "*the Park offers accommodation and camping facilities for use by various people*" (TMNP Area Manager – P3). "*The urban parks are accessed freely while others an entrance fee is charged*" (Local Counsellor – P5).

### 3.4) Entrepreneurial opportunities

There are several entrepreneurial opportunities which have started and are linked to the TMNP and these include community projects to develop and uplift skills. Catering was one of the business

opportunities presented to locals by the Park. When the Park has 'important days' such as hosting of Park events and activities, meetings, workshops, seminars and even conferences, local people coming from adjacent communities provide catering service. Some arts and craft markets run/operated by locals are benefiting from the selling of artefacts in the Park. In addition to business opportunities presented to local community members, a Contractor (P8) who was resident in a suburb adjacent to the Park talked about SANParks' contribution in uplifting community members through "*skills development*". The contractor indicated that through the Park's initiative of empowering and ensuring that locals benefit from the Park, training in various projects is offered. In her personal account, she was pleased because of the vast entrepreneurial opportunities which were presented to her "*I got trained as a tour guide and now work running walking, hiking, and nature guide tours to visitors … I also managed to get registered a caterer and know of others who provide catering service to the Park…*" The Cape Town Environmental Educational Education Trust (CTEET), an organisation that works with TMNP and various conservation organs in Cape Town has embarked on various programs all aimed at 'changing lives through nature' (CTEET, n.d.). CTEET acknowledges the challenges faced by the youth especially the astonishing high unemployment rates (48.0%) and through their initiatives, several have been helped. Training and development programs and initiatives are undertaken to ensure that young South Africans get the skills required by industry (CTEET, n.d.).

There are also commercialisation initiatives including the public-private partnerships (PPP), which presents entrepreneurial opportunities to locals. PPP occurs when the state work closely with private companies or individuals in the management and conservation of the Park and this is viewed crucial for South Africa's national parks (Doke, 2018). PPP has long been recognised as an important model for the growth of the tourism industry. Through PPPs, additional revenue is generated, and this goes a long way in conserving protected areas. Other uses of the funds generated from the PPP include funding some of the underperforming state assets, assisting to facilitate rapid infrastructure delivery as well as leverage private capital and crucial expertise (Doke, 2018). As of 2017, SANParks had over 45 PPPs in operation, and these present opportunities to private partners, for example permitting access to state property for agreed periods of time, thus allowing business and entrepreneurial activities to take place (Javan, 2017). The model is viewed as a sustainable risk management strategy whereby potential risks are transferred to the private sector and allows SANParks to focus on its core function of wildlife conservation.

Highlighting the importance of the PPPs in the TMNP, the contractor testified that these have benefitted locals in several ways including "*… allowing local private companies as well as individuals an opportunity to use existing Park buildings and infrastructure on lease basis*" (Community Liaison – P4). TMNP has in place formal management agreements and leases which allow the private sector to conduct sustainable businesses within the Park. The businesses particularly SMMEs are assisted in a number of ways including information dissemination and enabling them to operate efficiently. Most stakeholders agreed that the Park is very supportive as a way of encouraging entrepreneurship. The view denoting TMNP's support of local businesses came out in the interviews for example, the Community Liaison (P4) explained, "*… the Park has been instrumental in developing and registering several SMMEs.*" It is also important to note that the Park presents vast business opportunities for locals and for these to be exploited, permit application need to be undertaken. In trying to promote the entrepreneurial spirit among locals, the process is simplified with much support given thus giving more locals venue into businesses in the Park. The Contractor (P8) also stated that community members who want to work as contractors need to register in the city of Cape Town's data base. This will place them in better chances of being selected when opportunities come.

Aliens invasive plant species, which are considered one of the biggest threats to biodiversity needs to be cleared for various reasons. These plant species have the capacity to destabilise riverbanks, are flammable and cause fires, interfere with waterways and have adverse impact on the indigenous fauna (Gurevitch & Padilla, 2004; South African National Biodiversity Institute, 2019; McDonald, n.d). Alien clearing has been spearheaded as a biodiversity management way to reduce the impact of these species. TMNP undertakes the alien clearing programme in collaboration with the department of Water Affairs and Forestry (SanParks, 2019). This programme employs between 300 to 350 people coming from the surrounding communities. Other alien clearing initiatives are being undertaken in the indigenous Afromontane forests. The TMNP Area Manager revealed how the alien plant species were destroying the

indigenous fauna and he proposed for the involvement of more stakeholders in the clearing exercise and coming up with solutions. There was a general agreement in the findings that the alien cleaning exercise and coastal clean-up projects have enabled locals to work in these projects.

**3.5) The park and community involvement**

The study also sought to find out the interactions between the Park and local communities. It was noted from the study that most communication is through community structures and Park forums which were established to ensure that there is clear information flow. Meetings between community leaders or representatives and Park officials are held periodically (some quarterly while others every two weeks) so that community members can get an update of the Parks' activities and projects. It is in these meetings that "*problems and possible engagements are discussed … leading to solutions to problems and all this aimed at ensuring that communities surrounding the Park are happy …*" (Local Councillor – P6). Various methods are used to link with community members including electronic mailing especially with community representatives, notices of upcoming meetings are displayed on notice boards, and at times information is relayed via the telephone. Interactions between Park and community members provides the opportunity for input from both sides within reasonable timeframes and emphasise sharing of information. Permitting local participation and involvement in key decisions and projects usually recognises the value of all knowledge, as well as the diversity of values and opinions that exist between members. In addition, when local community members are given the platform to interact with the park, it enables feedback to be provided and would demonstrate how community input have been considered in the decision-making process. In this study, it was noted that there are established communication channels between the Park and community members and mostly '*community forums*' were used. Cohen, Dengate, Morrell and Lee (2015) note the critical role the media plays in the management of protected areas. They argue that the media can be used to achieve conservation objectives (Cohen et al., 2015:443). Protected areas managers usually use media (both traditional and modern) to reach a wider audience with conservation messages as well as raise awareness and garner co-operation from the public. In addition to using the traditional media platforms to reach various audience, TMNP management, use the 'modern media' including Facebook, Whatsapp, Podcast, Instagram, Twitter, YouTube, blogging to reach communities with messages which help foster relationships and support for conservation.

Examining how the TMNP involve communities in the management of the Park, the responses varied from but reflected that there was involvement. There is the public participation process which is an initiative by the Park management to ensure that communities are part of the decision-making. It includes 'clear information flow' where "local people are informed about what is happening or going to happen" (Social Dev Coordinator – P2). In addition, community members need to be made aware of how the Park is managed for as noticed in the following except "*… Park management plan communicated to all communities we work with so that they know where we are coming from and going … this affords us a chance to listen to their concerns and we try to be accommodating …*" The Community Liaison Officer (P4), added that "*When the Park management plan was developed, community members were engaged, allowing their questions to be answered and clarified*." The projects which are run in the Park are managed by local community members with 'project advisory committee' involving members from various organisations such as local councillors, community leaders, SANParks and Department of Environmental Affairs representatives.

The study provides a basis for future research on the interactions between protected areas, and the adjacent communities, particularly benefits to locals. This would establish the overall value of these areas in promoting conservation of biodiversity. The involvement of local community members in Park activities and conservation programs has proved successful in several protected areas in South Africa and beyond. Community members as custodians of the natural biodiversity can fully support conservation effort when the benefits from these resources are realised, therefore it is imperative to find ways of maximising community benefits as means to achieving sustainable conservation. Future studies should therefore be expanded to include more stakeholders, especially locals from communities surrounding the Park. The current study was limited to only eight key informants. Since the study's focus was on community beneficiation, the 'voices' and views of these community members could have provided a richer picture regarding the benefits from TMNP. Considering the above, the authors recommend a multi-stakeholder (including residents from both the richer and poorer suburbs) study on community beneficiation as this is anticipated to provide interesting study constructs.

**Conclusion**

From the stakeholder perspective, the TMNP is doing the best they can to involve communities in the Park's issues. Information is well communicated through the already existing systems. It is also interesting to note the existence of entrepreneurial opportunities for communities surrounding the Park. These has helped locals in several ways including offering opportunities for jobs and subsequently earn an income. The authors of this article believe that more can still be done to create even more entrepreneurial opportunities for people. The EPWP initiative has done well in providing jobs to locals and in creating business opportunities for locals. It is also true that the cultural aspect of these locals has not been explored to the full. The area is visited by millions of tourists annually, and tour operating businesses can bring tourists to local communities to explore their culture. This could bring more benefits to locals, as they would understand tourism as well as conservation principles.

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# Canada and China FTA: Distribution of income with an energy input

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**Keywords**
Canada, China, free trade, income distribution

**Abstract**

*Purpose of the Paper: A free trade agreement between Canada and China is currently under consideration. This paper analyzes the short-run distribution of income in Canada resulting from such an agreement using the Specific Factors model of production and trade. Five labor inputs, energy, and capital in four sectors of the Canadian economy are included in the study.*

*Methodology: We estimate changes in outputs and factor payments, given exogenous price changes resulting from free trade. The link between international trade, outputs, and factor payments, is based on the well-known Hecksher-Ohlin (H-O) model of trade. The relationship between trade and factor payments is embodied in the Stolper-Samuelson (1941) theorem and its generalizations that trade-induced output price changes have a magnification effect on outputs and factor payments. Abundant factors gain while scarce factors lose from more free trade.*

*Key Findings: Model results suggest that Canadian workers and capital owners will benefit with higher wages and return to capital in three of the four sectors of the Canadian economy included in the study. Thus, timely implementation of trade adjustment assistance to support workers and capital owners in the losing sector, who may become unemployed due to trade-related issues, is critical to mitigate any adverse result from the FTA.*

*Main Contributions: The main contribution the paper makes is its attempt to identify potential short-term winners and losers resulting from the Canada-China FTA. It is critical in any trade negotiation, for countries to have a support mechanism to address the initial negative shock that a free trade agreement may cause. Thus, identifying losing sectors is a good starting point.*

*Originality: To my knowledge, the Specific-Factors model of production and trade has not been used to study the potential impact of a Canada-China FTA on the Canadian economy. This paper could be a good motivator for more comprehensive studies.*

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# Social Investing, Ethical Mind-sets, and Nudges: A Neuro-economic Investigation

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**Key words**
Neuro-economics, Social Mindsets, nudges, social investing

**Abstract**

*With the advent of social and impact investing in the financial markets, investment choices have become increasingly complex. Investors often consider a wide range of social factors, in addition to financial return, when making their financial decisions. Pilaj (2017) has called for increased focus on testing these mixed financial and social motives of investors, and whether nudges can be effective in nudging investors towards social investments. Motivated by this call, we draw upon lessons from behavioural economics (and in particular, social preference theory) in order to develop neuro-economic tests of investors' social and financial mind-sets. We focus on two main research questions: a) How heterogeneous are (social-) investors, in terms of the unconscious weightings that they place upon financial and social returns? Can investors' mind-sets be placed upon a continuum from focussing on social returns, through mixed motivations/weightings, through to focussing on financial returns? b) Can investors be nudged along this financial-social continuum?*

*Our neuro-experiments provide affirmative answers to these two questions. We thus provide policy implications regarding nudges towards social investment. Practically, we suggest the development of a phone application that integrates real-time stock-tracking with nudges in order to inspire socially responsible investing; banks would play a key role in encouraging its download. Nudges can help to overcome the conflict between social and financial returns.*

# Scope and modalities of restructuring state owned enterprises in India

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**Keywords**
Restructuring, Reforms, State Owned Enterprise, Sickness, Economic development, Ownership

**Abstract**

*State Owned Enterprises (SoEs) play a prominent role in the industrial and overall economic development of a developing country. India opted for mixed economy framework soon after the independence, which provided space for both the SoEs and the private sector. The private sector was, however, not as matured and vibrant at the time of Independence as today. SoEs had therefore, to step-in for a quick catch-up with the developed countries. From hindsight, it is apt to agree that the SoEs in India played the historic role in the economic development of the country.*

*The present paper tries to discuss the role of SoEs in promoting economic development, reasons for their failure, restructuring mechanisms, policies for reviving and key challenges faced by these enterprises.*

## SoEs and Economic Development

State Owned Enterprises (SoEs) were set up to serve the broad macro-economic objectives of higher economic growth including self- sufficiency in production of goods and services, long-term equilibrium in balance of payments and low and stable prices meeting certain socio-economic obligations. During the first five-year plan there were only five enterprises with an investment of Rs 29 crore. SoEs were established in dominant sectors such as petroleum, coal, steel, mining and transport & logistical services. Constantly the number and the investment in these enterprises increased to 339 enterprises with Rs 13.73 lac crore[3]. Several greenfield projects were initiated which were categorized as essential goods and services. These enterprises were under pressure to meet the competition and to achieve goals. The gross revenue from operations of SoEs has increased by 10 per cent recording their contribution of around nine per cent to GDP during 2017-18[4].

SoEs had their heyday between 1960s and 1990s during which period they had an astronomical growth not only in terms of numbers but also in terms of investments. As on April 1, 1961 there were 47 SoEs with an investment of Rs. 948 crores. There has been multifold increase in the number of SoEs, their paid-up capital, contribution to GDP, gross value added, etc. The SoEs stood at 339 with an investment of Rs 2.49 lakh crore showing an increase of 7.68 per cent during 2017-18. SoEs contribution to economic development is determined by the number of enterprises, sectoral presence, investments, contribution exchequer, market capitalization, employment generation, net value addition, foreign exchange earnings, etc. There has been an increasing trend that has been recorded in terms of investment by 10.24 per cent, total income by 11.61 per cent and capital employed by 6.87 per cent. Table 1 depicts the growth of investment from 2011-12 to 2017-18.

Table 1: Growth in Financial Investment

| Particulars | Total Investment (Rs. in crore) | Increase over previous year (%) | Enterprises (Nos.) |
|---|---|---|---|
| 2011-12 | 7,29,298 | - | 260 |
| 2012-13 | 8,45,334 | 15.91 | 277 |
| 2013-14 | 9,92,095 | 17.36 | 290 |
| 2014-15 | 10,95,554 | 10.43 | 298 |

[3]Public Enterprise Survey, Department of Public Enterprise, Government of India, Volume 1, 2017-18 pg 1
[4]Public Enterprise Survey, Department of Public Enterprise, Government of India, Volume 1, 2017-18 pg 7

| | | | |
|---|---|---|---|
| 2015-16 | 11,61,018 | 05.98 | 320 |
| 2016-17 | 12,45,819 | 07.30 | 331 |
| 2017-18 | 13,73,412 | 10.24 | 339 |

SoEs contributes to the Central Exchequer by way of dividend payments, interest on government loans and payment of taxes and duties. Table 2 depicts SoEs contribution to the exchequer from 20014-15 to 2017-18. It is evident that there has been an increase in the dividends paid, interest earned, and taxes paid in the form of excise duty, custom duty, corporate tax, service tax including GST.

Table 2: Contribution to Central Exchequer

*(Rs.in crore)*

| Sr. No. | Particulars | 2017-2018 | 2016-2017 | 2015-2016 |
|---|---|---|---|---|
| 1 | Interest on Central Government Loans | 391 | 477 | 7,483 |
| 2 | Dividend on Central Government Equity | 42,312 | 45,196 | 42,027 |
| 3 | Central Sales Tax | 1,182 | 4,743 | 3,663 |
| 4 | Central Excise | 1,77,843 | 1,90,622 | 1,39,602 |
| 5 | Customs Duty | 13,624 | 12,196 | 9,952 |
| 6 | Corporate Tax (incl. Fringe Benefit Tax) | 51,364 | 52,957 | 42,827 |
| 7 | Dividend Tax | 13,586 | 14,221 | 11,398 |
| 8 | Other Taxes and Duties | 17,521 | 30,409 | 11,869 |
| 9 | Service Tax | 2,527 | 9,992 | 7,019 |
| 10 | Non-Tax Revenue | 2,099 | - | - |
| 11 | Goods and Services Tax (CGST+IGST) | 27,604 | - | - |
| | Total | 3,50,052 | 3,60,815 | 2,75,840 |

Internationalisation has encouraged SoEs to earn foreign exchange. SoEs has a gross foreign exchange earnings of more than 1000 crore. Out the 15 SoEs, 13 have shown an increase in years over the last year. SoEs provided employment opportunity to more than 14,66,694 people as on 31.03.2018. Employment in SoEs is spread across managerial/executive, supervisory and non-executives in corporation, the offrole include casual and daily employees and contract. The on-role employees are 10,88,140 employees with a share of 74 percent in the total employees in SoEs. The unorganized sector with off role employment is occupied by 26 percent in the total employees of SoEs. Table 3 depicts the employment details of SoEs in India.

Table 3: Break-up of Total Employment

| Category | Sub-Category | No. of employees | | %Change |
|---|---|---|---|---|
| | | 31.03.17 | 31.03.2018 | |
| Managerial/Executives | | 265484 | 266478 | 0.37 |
| Supervisors | Unionised | 76931 | 79096 | 2.81 |
| | Non-Unionised | 28063 | 29629 | 5.58 |
| Workers | Skilled | 566505 | 521778 | (7.89) |
| | Unskilled | 198692 | 191159 | (3.79) |
| Casual/Daily Rated Workers | | 30638 | 40060 | (30.75) |
| Contract Workers/Employees | | 336780 | 338494 | 0.51 |
| Total | | 1503093 | 1466694 | (2.42) |

The Net value addition by SoEs increased from Rs 6.92 lakh crore in 2016-17 to Rs 7.17 lakh crore. The share of net value addition to GDP stood at 4.28 per cent during the same year. The Table 4 details the component of NVA in CPSEs (Rs in crore).

Table 4: NVA in SoEs

| Sl. No | Net Value Addition | 2017-18 |
|---|---|---|
| 1 | Profit Before Tax (PBT) | 187697 |
| 2 | Interest | 53303 |
| 3 | Indirect Taxes and Duties | 305997 |
| 4 | Salaries and Wages | 157621 |
| 5 | Rent and Royalty | 12626 |
| | Total | 717244 |

**Review of related studies**

The phenomenal increase in the number of SoE reform programmes in both developed and developing economies has generated a lot of research interest. The bulk of the research efforts, however, are intuitive, mainly theoretical and country specific. They address many questions and majority ones being: why governments have opted for reforms, how reforms were implemented, the degree of implementation and the problems encountered (Onis, 1991; Ramandaham, 1989). While many of these studies are useful to policy makers to carry out successful state enterprise reform, they do not address how privatization and reforms have affected the performance of divested firms and they do not highlight the outcomes. Very few studies analyse the impact of public enterprise reform on profitability, productivity, exports, budgetary impacts, etc. In a study, Bishop and Kay (1988) compared the performance of a number of privatized firms in the United Kingdom (shipping, airline, gas, telecom, oil and automobile industry) with another set of firms under state control (in rail, steel and postal sector) using several indicators, including revenue, employment, profit margin and total factor productivity. The World Bank (1996) conducted a very innovative study on the political economy of state enterprise reform and investigated the economic problems that arise when governments own and operate enterprises that could be managed by the private sector and the political obstacles to reforms. Barnett (2000) investigated the relationship between macroeconomic parameters and privatisation of SoEs. According to the study the reforming SoEs through privatisation, transferring the proceedings of privatised SoEs to budget would help in domestic financing. This would help the economy to overcome large fiscal deficit. Balbuena (2014) in the OECD working paper discussed the SoEs governance reforms and challenges across Southern African Developing Community region. The report provided facts and figures aiming to improve corporate governance of SoEs. These studies throw light on reforming of SoEs including revival, restructuring, and privatization. These are relevant for developing and developed economies.

**Reasons for failure of SOEs**

Sickness is a universal phenomenon. Sickness is a symptom of ailment and not an ailment. During 1970, there were 22,500 sick units in India which grew some ten times over a decade. Many financial institutions resources are locked up in sick units, large, medium and small. The incidence of sickness, quite understandably, has been a cause of considerable concern to the government, financial institutions and banks.

Sickness in SoEs has been a continuing concern of the Government. The reason for sickness varies from enterprise to enterprise. In some cases, the cause of sickness is inception, historical, economical, market conditions, etc. Due to these reasons some SoEs have been incurring losses continuously for the last several years. The problem of sickness in SoEs is addressed by the administrative Ministries/ Departments in the Government by evolving appropriate need-based strategy concerning these enterprises. The accumulated losses in these sick enterprises have surpassed their net worth. The various reviews identified the two reasons for sickness are financial and operational. The financial and operations reasons include higher that prudent level of leveraging for the industry, project cost overrun, funds diversion out of the project, funding of long term assets with short term funds, bunching debt servicing obligations, new project coinciding with a downturn in the industry, operating profits insufficient to serve debt, very high level of receivables, inadequate debtor recoveries

It is interesting to mention that as a part of restructuring exercise and to fight for successful existence in the global market, the merge of Air India and Indian Airlines, Rashtriya Ispat Nigam Ltd and Steel Authority of India Ltd and Oil Group Companies were considered. The Indian Post is an excellent example of undergoing restructuring to come back with a big bang to take on private sector couriers and couriers from abroad such as DHL. The Indian Railways are not lagging and giving a tough fight to the private sector Airlines.

The following matrix categorizes the SoEs basing on the type of sickness, causes of sickness and response strategies:

| Type of sickness | Diagnostic status | Basic Cause (s) | Response strategy |
|---|---|---|---|
| Genetic | Decision Failure | Varied technologies, economics or management related issues | Restructuring with heavy or critical inputs |
| Structural | Intrinsic | Decisions on location feed stock, technology product | Restructuring or management interventions |
| Operational | Acquired | Management failure, lack of | Needs management interventions |

| | | | |
|---|---|---|---|
| | | leadership faculty HRM, | |
| Policy Linked | Based on parameters | Conditions imposed by policy decisions | Policy change or adjustments |
| Environmental / Exogenous | External Factors | Industry, location | Needs management and policy interventions |

**Restructuring of SoEs**

Restructuring is the modern mantra for survival of SoEs. This is an approved strategy to revive the operations of an entity and make it profitable once again or decide to close in case it can't be revived. The other techniques that have been adopted by most of the enterprises is mergers or acquisitions. Organizations need to adopt a result-oriented approach that not only keeps the organization on the move but also enables it to target a new destination or higher goals. Hence restructuring is a continuous process driven by the corporate vision. Corporate restructuring is the act of partially dismantling or otherwise reorganizing a company for the purpose of making it more efficient; more profitable; attain greater efficiency; adapt to new markets; liquidating projects obsolete and unviable in some areas; redirecting assets to other existing or new areas. SoEs are going for diverse type of restructuring such as manpower, operations, strategic, financial and organizational restructuring including setting up of joint ventures.

The Reserve Bank of India was constantly monitoring the industrial sickness in the country. During the year 1975 RBI has appointed a study group. The Government of India has constituted an Experts Committee during 1981 to examine the industrial scenario in the country and recommend suitable remedies, therefore. Based on the recommendations of the Committee, the Government of India enacted a special legislation known as the Sick Industrial Companies (Special Provisions) Act (SICA), 1985.

The SICA[5]1985 was amended in the year 1991 bringing industrial public sector enterprises under its purview. SICA defined sick enterprise, '*if at the end of any financial year, it has accumulated losses equal to or exceeding its entire net worth*'. The main objective of SICA is to determine sickness and expedite the revival of potentially viable units or closure of unviable units. It was expected that by revival, idle investments in sick units will become productive and by closure, the locked-up investments in unviable units would get released for productive use elsewhere. Such companies are required to be referred to the Board for Industrial and Financial Reconstruction (BIFR) for formulation of rehabilitation/ revival plan. As per Department of Public Enterprises Resolution dated 6th December, 2004, a company will be considered 'sick' if it has accumulated losses in any financial year equal to 50% or more of its average net worth during 4 years immediately preceding such financial year and a company which is a sick company within the meaning of Sick Industrial Companies (Special Provisions) Act, 1985 (SICA).

According to Companies Act 2002, a sick company is defined as one *"which has accumulated losses in any financial year equal to 50 per cent"*. An enterprise remains healthy if it operates in reasonably favorable environment and has an efficient management. When these conditions are not satisfied the enterprise is likely to become sick. Sickness is caused by unfavorable external environment and managerial deficiencies.

Change in fiscal and government policies to face new challenges and meet new financial requirements due to deregulation, decontrol, withdrawal of government patronage, competition is the main reason for reforms in the public enterprise system. Due to liberalization, privatization and globalization the expanded markets have given highly competitive environment to these enterprise to 'perform' or 'perish'. Technology revolution has become lifeline for all corporate resulting in more investments in IT and related infrastructure and making people familiarize in the latest. Customer delights bringing to the fore a new concept as to how to understand and fulfil the needs and expectation of the customer. SoEs were segregated into high priority and non-priority enterprise basing on the model for restructuring. Box 1 describes the business model classifies SoEs into high and non-priority enterprises.

| Box 1: Revival Mechanism | |
|---|---|
| High Priority SoEs | Non-priority SoEs |
| Strategic objectives, national interest and economically viable | Short and medium plan for sustenance |
| Business model for government policy convergence | Performance efficiency benchmark operations, technology adoption, business strategy |
| Strategic disinvestment and joint ventures | Desirable short and medium market share |

[5]Muralidharan, S. (1993), Handbook of Industrial Sickness, Vidhi Publications, New Delhi

The BIFR was set up in January 1987 and functional with effect from 15th May 1987. The Appellate Authority for Industrial and Financial Reconstruction (AAIRFR) was constituted in April 1987. Government companies were brought under the purview of SICA in 1999, the SoEs whose accumulated losses are equal to or have exceeded their net worth may be referred to BIFR. BIFR grants immunity from legal sanctions to the company arising from proceedings from executive of decree against property, recovery, etc. BIFR sanctions suitable revival / rehabilitation schemes for revival, closure, partial closure, etc. Table 3 depicts the SoEs registered with BIFR. It is evident that for the last twenty-four years i.e. from 1992-2007, 65 SoEs have been referred to BIFR and there were no references from 2008-2016. BIFR disposed more than 50 cases through sanctioning revival schemes, declaring 'no longer sick, dismissing the cases as non-maintainable de-registration and recommended for winding up.

Table 3: Year-wise Registrations of SoEs with BIFR

| Year | No. of CPSEs | Year | No. of CPSEs | Year | No. of CPSEs |
|---|---|---|---|---|---|
| 1992 | 31 | 1998 | 2 | 2005 | 2 |
| 1993 | 2 | 1999 | 3 | 2006 | 1 |
| 1994 | 4 | 2000 | 1 | 2004 | 4 |
| 1995 | 2 | 2001 | 1 | 2007 | 1 |
| 1996 | 2 | 2002 | 2 | 2008 - 16 | 0 |
| 1997 | 4 | 2003 | 1 | Total | 65 |

Table 4 depicts the status of SoEs which were registered with BIFR under various categories of revival. Out of the 65, 18 SoEs were recommended to windup/ closely followed by revival of 13. It is interesting to note that ten SoEs showed growth rate.

Table 4: Status of SoEs registered with BIFR (as on 31.03.2016)

| Sl No. | Particulars | Number |
|---|---|---|
| 1 | Winding up recommended and closed | 18 |
| 2 | Revival Scheme sanctioned by BIFR | 13 |
| 3 | Draft Rehabilitation Scheme (DRS) awaited | 12 |
| 4 | Declared no longer sick | 5 |
| 5 | Dropped on net worth becoming positive | 5 |
| 6 | Winding up recommended | 4 |
| 7 | Dismissed as non-maintainable | 3 |
| 8 | Deregistered with BIFR/Others | 2 |
| 9 | Stay by AAIFR | 1 |
| 10 | Remanded by AAIFR | 1 |
| 11 | Pending determination of sickness | 1 |
| | Total | 65 |

It is evident from the above table (Table 4), 65 SoEs were referred to BIFR of which 40 were in operation. The accumulated losses of sick operating SoEs during 2007-08 to 2015-16 is Rs 51,670 crore. Andrew Yule, Hindustan Insecticides, Project & Development India, Scooters India Ltd and Vignyan Industries Ltd does not have accumulated losses. Table 5 shows the no of operating sick SoEs registered with BIFR, year-wise accumulated losses, total number of loss making SoEs and aggregate loss.

Table 5: Sick and Loss making operating SoEs

| Year | No. of operating sick SoEs registered with BIFR | Accumulated losses of sick operating SoEs (Rs in crore) | No. of loss making SoEs, during the year | Aggregate loss, (Rs. in crore) |
|---|---|---|---|---|
| 2007-08 | 46 | 72820 | 54 | 10303 |
| 2008-09 | 46 | 68577 | 55 | 14621 |
| 2009-10 | 46 | 62828 | 60 | 16231 |
| 2010-11 | 45 | 65146 | 62 | 21817 |
| 2011-12 | 45 | 65642 | 64 | 27683 |
| 2012-13 | 45 | 70918 | 79 | 28562 |
| 2013-14 | 44 | 55507 | 70 | 21341 |
| 2014-15 | 39 | 56065 | 76 | 27498 |
| 2015-16 | 40 | 51670 | 78 | 28756 |

*(Source: Public Enterprise Survey 20015-16, Vol 1, Department of Public Enterprise, GoI)*

The streamlining the mechanism for revival / restructuring of SoEs for winding / closure, etc was intended to facilitate multiple mechanisms exist for restructuring / revival of SoEs. Government has taken

steps to make the mechanism and process for revival/restructuring of SoEs time bound, comprehensive, performance driven and efficient. The Government decided to remove the multiple layers in decision making to ensure timely revival/restructuring of sick SoEs, revival/restructuring of sick/incipient sick enterprise is to be merit based, considering strategic, national and business concerns of the SoEs.

The Companies Act, 2013, Chapter XIX refers to Revival and Rehabilitation of Sick Companies whereas Chapter XX refers to Winding up. The decision whether a company has become a sick company would be taken by the National Company Law Tribunal. The administrative Ministries/ Departments must keep track of the debts of SoEs and take advance action to avoid a situation where the SoEs may be considered fit to be declared sick entity as per provisions of the Companies Act, 2013. The concerned Administrative Ministries /Departments are responsible to monitor sickness of SoEs functioning under them and take timely redressal measures with the approval of the Competent Authority. The administrative ministry analyses the performance of the enterprise within six months from the closure of annual accounts. The enterprise is considered weak or sub optimal performing basing on criteria discussed in Box 2.

| Box 2: Criteria for declaring SoE as Weak / sub-optimal Performer |
|---|
| Turnover or operational profit has declined by an average of 10 per cent in the last three years |
| Profit before tax is less than income from the other sources |
| Trade receivables and inventories are more than 50 per cent of net worth |
| Claims against the company, not acknowledged as debts, are more than its net worth |

The administrative Ministry would put the weak enterprise under 'observation and intensive review' to arrest the early sign of weakness. The Ministry would also nominate an independent member on the board to review and undertake corrective measure to improve financial performance of the enterprise. The administrative Ministry would inform Ministry of Finance on the revival / restructuring mechanisms of the enterprise. The Ministry of Finance would consider the enterprise for the revival / restructuring mechanisms. The Ministry decides keeping the public interest in making the process, time bound and performance driven.

**Conclusion**

Reforms and Restructuring has been fuelled by variety of forces like global competition, technological breakthroughs, managerial innovations, regulatory changes, transformation and formerly centrally planned socialistic economies and expansion of international trade. It has led to dramatic improvement in corporate performance. The strategic movers of turnaround management are touched in the context of complex sick organizations in general and transport undertakings in specific. Key insights are drawn from functional as well as operational point of view to explain the complete process and develop insights specific to the context. The move contributes to devise, develop and implement turnaround strategies for organisations especially in the Indian scenario. SoEs are expected to run on commercial lines, the financial appraisal continues to be an important yardstick to measure the performance of these enterprises. An analysis of financial performance of these enterprises with reference to some important ratios such as profit before interest and tax to capital employed, sales to capital employed, etc has been attempted. Because the SoEs must discharge a number of socio-economic obligations, generate employment opportunities, public exchequer, management development, development of backward regions, employment generation, employee's welfare measures, foreign exchange earnings, there is a need to revive them.

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# Remittances and economic growth in Sub Sahara African countries: A pool mean group approach

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**Key words**
capital formation, economic growth, pooled mean group, remittances, and sub-saharan Africa

**Abstract**

*The study investigated the impact of remittances on the economic growth of 29 Sub-Saharan African countries with Pooled Mean Group and Mean Group estimators under Autoregressive Distributive Lag model. Hausman test was used to determine which estimator is the most appropriate. The result of the Pooled Mean Group showed that remittance has a positive and insignificant impact on growth in the long run, while the error correction equation indicates that remittance has a negative impact on growth in the short run, foreign direct investment and capital formation contributes positively to growth both in the long run and short run.*

## Introduction

The demand for additional resources to compliment the developmental strides of most developing nations of the world has result to increase in flow of financial resources from developed countries to that of the developing countries. Remittance has remained the most stable source of foreign capital inflow as against FDI and Aids. Over the years the level of poverty and hardship in most of these developing nations fuels the need for citizens to migrate to a more developed nation for greener pasture. This, however, is to enable them to improve the quality of their life and that of their relations at the home country. And so, to achieve this, migrants working abroad will have to remit their earnings to home country thereby improving the life of those in the receiving country.

Many researchers in different continent of the world have tried to empirically investigate the impact of remittance on the growth of the receiving country but came up with conflicting results. Many believe that remittances positively affect economic growth but differ in term of the channels through which remittances affect economic growth. Barajas et al. (2009) argued that remittances can affect economic growth positively by accelerating the rate of capital accumulation in the receiving country. Similarly, Giuliano and Ruiz-Arranz (2009) opined that remittances positively impact economic growth by improving the financial sector development. Ramey and Ramey (1995) noted that since remittances exhibit lower volatility as against other foreign capital inflows like foreign direct investment and portfolio investments, it may result to a positive impact of remittances on economic growth as it will reduce volatility given changes in the economic realities. Bayar (2015) asserts that remittances may impact positively on the rate of economic growth by stimulating aggregate demand. He also noted that since this can result to increased importation, the net effect of the increase in the aggregate demand occasioned by remittances becomes vague.

There are others who argue that remittances negatively impact economic growth. Among those that believe that remittance impact negatively on economic growth is Lopez at al. (2007) who noted that exchange rate appreciation is one of the channels through which remittances impact negatively on economic growth. They argued that exchange rate appreciation may decrease the competitiveness of the domestic economy and thereby reducing export and increasing import. Nyamongo et al. (2012) opined that remittances affect economic growth negatively due to information asymmetry. This arises since the remitter does not know where and how the recipient uses the remittances. And so, the recipient may not employ the remittance in productive investment activity, instead the recipients see the remittances as an

alternative to labour income and hence they increase their leisure time, and this affect economic activities negatively.

Various studies have tried to investigate the impact of foreign capital inflow on economic growth in Sub-Saharan African countries but relatively very few studies have looked at the impact of remittances alone on economic growth of Sub-Saharan African countries. It is against this background that this study seeks to evaluate the impact of remittances on economic growth of the sampled countries in SSA during the period of 1994-2016 by employing PMG estimator under ARDL model. The rest of the study is organized as follows: the next section 2 introduces the trend of remittances in SSA countries with their main specifics. In Section 3 we introduce our dataset and variables. Section 4 shows the findings and results. Section 5.1 discussed and summarized key findings. Finally, section 5.2 concludes the paper and states final remarks.

## 2. Literature review

### 2.1 Theoretical Background

Across the world, the personal remittances received through official channel amounted to about 536.989 billion US dollars in the year 2016, while the amount of remittances that entered Sub-Sahara Africa (SSA) for the same period amounted to about 37.20006 billion US dollars and this however, represent a total of approximately 7% of the global remittance flows in 2016. The flow of remittances into SSA has followed an increasing trend over the last five decades, with Nigeria standing as one of the major recipients of remittances in SSA. Out of a total of 37.20006 billion US dollars that flowed into SSA, about 19.6 billion US dollars was received in Nigeria in 2016. This represents a total of about 52.78% of the total remittance inflow to SSA in 2016 and 3.67% in the entire globe thus making Nigeria one of the major recipients of remittances in the world.

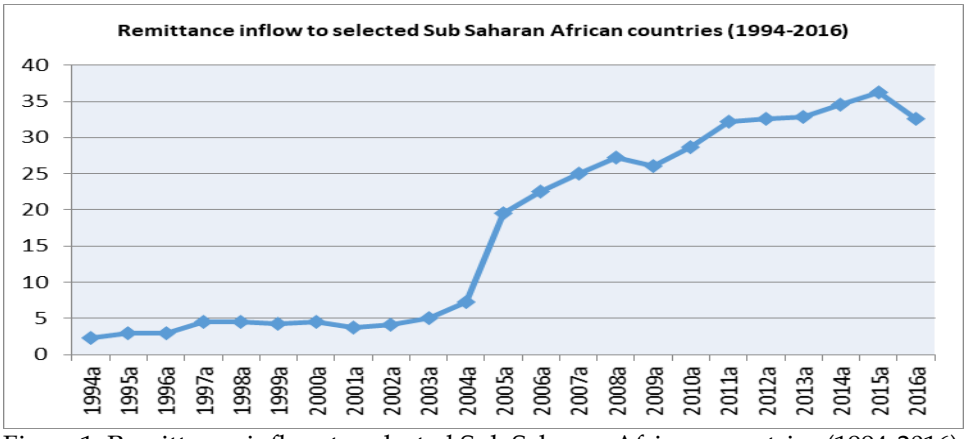


Figure1: Remittance inflow to selected Sub Saharan African countries (1994-2016)

The volume of personal remittances that flowed to SSA countries has continued to witness an upward trend as shown in figure 1 above. From 1994 to 2004 the flow of personal remittances increased from 2.23274[a] billion US$ to 7.262003[b] billion US$ respectively and this represent a total of about 225.25% increase. The continent continued to receive significant inflow of remittances that from 2005 to 2015 a total of 19.56227 billion US$ and 36.27182 billion US$ respectively was received representing an increase of about 85.42% within a period of 11 years. The inflow of remittances in the continent declined in 2016 from 36.27182 billion US$ in 2015 to 32.64738 billion US dollars. Even with decline the continent was considered to have received significant inflow of remittances and it still represented a total of 7% of the global flows of remittances.

Table 1: Remittance inflow (Current US$million) to selected Sub Saharan African countries in 2016

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Benin | 207.0751 | Mauritius | 1.294258 | Guinea | 52.17078 | Sierra Leone | 48.16369 |
| Botswana | 24.62251 | Mozambique | 93.37269 | Guinea-Biss | 93.27819 | South Afri | 755.434 |
| Burkina Faso | 405.6754 | Namibia | 66.47871 | Kenya | 1744.639 | Sudan | 153.4115 |
| Cape Verde | 212.0651 | Niger | 181.6368 | Lesotho | 343.6558 | Swaziland | 98.42104 |
| Cameroon | 241.6098 | Nigeria | 19635.57 | Madagascar | 250.4663 | Tanzania | 411.2264 |
| Cote d'Ivoire | 341.963 | Rwanda | 172.5188 | Malawi | 34.44282 | Togo | 351.2333 |
| Ethiopia | 772.2359 | Senegal | 2015.863 | Mali | 936.8297 | Ghana | 2979.934 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Seychelles | 22.08702 | | | | | | |

Source: World Bank Data Base

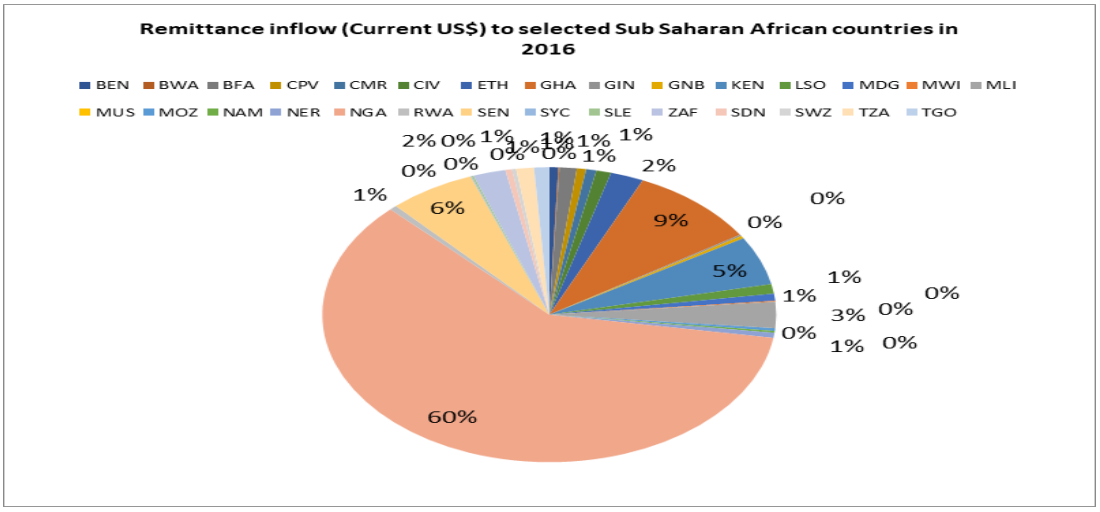


Figure 2: Remittance inflow (Current US$) to selected Sub-Saharan African countries in 2016

From figure 2 above 60% of the total remittances inflow to SSA were received in Nigeria, making the country the largest recipient of remittances in the continent for the year 2016 with a total of 19.64 billion US$, this was followed by Ghana with a total of 2.98 billion US$ representing a total of 9% of the aggregate inflow of remittances in the continent for 2016. Senegal is the third largest recipient of remittances in the year 2016 with a total of 2.02 billion US$ amounting to 6% of the total remittance inflow among the selected countries in the continent. Apart from Mali, Ethiopia, and South Africa that received 3%, 2%, and 2% respectively for the year 2016, the rest of the selected countries in SSA received remittances inflow of 1% or less than one percent of the total inflow to the continent.

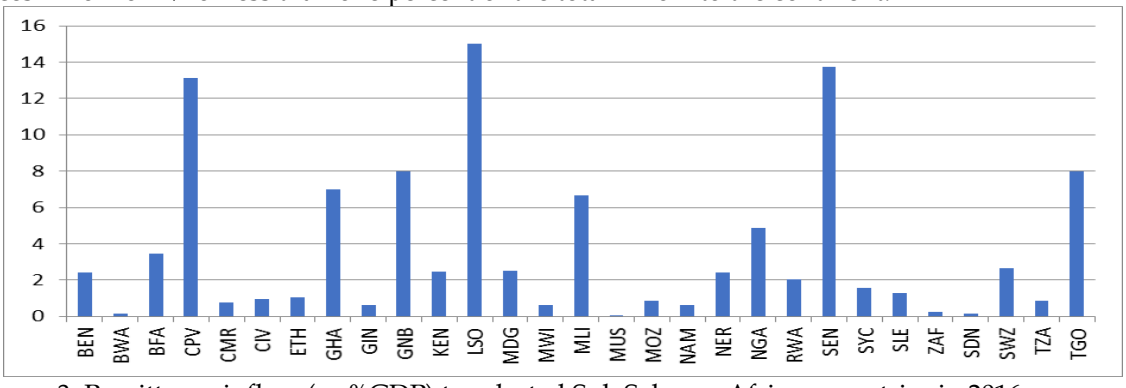


Figure 3: Remittance inflow (as %GDP) to selected Sub Saharan African countries in 2016

The inflow of remittances as a percentage of GDP as shown in figure 3 above indicates that Lesotho has the highest remittances inflow as a percentage of GDP with 14.998% of their GDP received as remittances in the year 2016. This was followed by Cape Verde and Senegal which received a total of 13.110% and 13.728% respectively of their GDP as remittances in the year 2016. Similarly, Ghana, Guinea-Bissau, and Togo also received an average of 6.98%, 8% and 7.98% respectively of their GDP as remittance inflow in the year 2016. Apart from Mali and Nigeria which also received up to 6.67% and 4.85% respectively of their GDP as remittances, the rest of the countries under review received remittances as a percentage of GDP that ranges between 3% to less than 1% in the year 2016.

**2.2 Positive effect of Remittances on Economic Growth**

Various researchers have investigated the effect of remittances on economic growth and ended with various conclusions. Among those that are of the opinion that remittances contribute positively to the growth of the economy are discussed below. Rehman and Ahmad (2016) investigated the impact of foreign capital inflow on economic growth of 21 developing countries for the period of 1990 to 2013 employing Pool Mean Group estimation technique and found that remittances and FDI have a positive

and significant impact on economic growth in the long run among the countries under consideration. External debt and ODA were shown to have a negative and significant impact on economic growth. Yaseen (2012) in a study of Middle East and North African (MENA) countries for a period of 2000-2010 employing Fixed Effect model indicates that remittance inflows have a positive and significant impact on economic growth for the period under consideration. Pradhan et al. (2008) employing a panel data of 39 developing countries for the period of 1980 to 2004 examined the impact of remittances on economic growth using panel regression found that remittance contributes positively to economic growth. Fayissa and Nsiah (2010) studied the impact of remittances on economic growth and development among 36 countries in Africa for a period of 1980-2004 using a panel regression analysis, the result indicates that remittances exert positive and significant effect on economic growth of the countries under study. Giuliano and Ruiz-Arranz (2009), looked at remittances, financial development and economic growth of 100 developing countries for the period of 1975-2002, using panel regression model they opined that remittances has a positive impact on the economic growth of the selected countries. Nyamongo et al. (2012) in a similar study also looked at remittances, financial development and economic growth among 36 African countries for the period of 1980-2009. Adopting panel regression model, they opined that remittances has a positive and significant impact on economic growth.

In a study of South Asian countries, Cooray (2012) investigated the impact of remittances on economic growth using panel data analysis, the result indicates that remittances have a positive and significant impact on economic growth. However, Ramirez (2013) investigated the role of financial and institutional variables in enhancing the impact of remittances on economic growth of Latin America and the Caribbean, adopting a panel cointegration and FMOLS method, the result indicates that there is a positive and significant impact between remittances and economic growth. Nsiah and Fayissa (2013) examined the impact of remittances on economic growth in Africa, Asia, and Latin American-Caribbean countries for a period of 1982-2007, employing a panel cointegration analysis and FMOLS on a sample of 64 countries and found that remittances contributed positively and significantly to economic growth among the countries under study. Nwaogu and Ryan (2015) in a similar study concluded that remittances positively and significantly impact on the economic growth of 54 African countries and 34 Latin American and Caribbean countries included in their study. Salahuddin (2013), Salahuddin and Gow (2015) in a separate study investigated the link between remittances and economic growth in Bangladesh, India, Pakistan and the Philippines employing panel cointegration test and pooled mean group (PMG) regression and concluded that remittances contributes positively to the economic growth of the selected countries. Senbeta (2013) investigated the effect of remittances and capital accumulation of 50 countries for a period of 1970-2004 using panel regression analysis, the result indicates that there is a positive and significant impact between remittances and capital accumulation of the selected countries. Zizi (2014) and Imai et al (2014) in a separate study looked at the link between remittances and economic growth of Central and Eastern European countries, as well as 24 Asia and Pacific countries respectively and concluded that remittances contribute positively to economic growth of the selected countries.

Javid et al (2012) examined the impact of remittances on economic growth and poverty reduction of Pakistan economy for the period of 1973 to 2010 through the instrumentality of ARDL model and found that remittances have a positive and significant impact on economic growth. They also noted that remittances contribute significantly to poverty reduction in the economy. Hussain and Anjum (2014) for the same economy showed that remittances have a positive and significant impact on economic growth. Similarly, Kumar (2013) also adopted ARDL cointegration model to analyze the impact of remittances on the economic growth of Guyana economy for the period of 1982-2010 and opined that remittances has a positive and significant impact on economic growth. Meyer and Shera (2016) examined the impact of remittances on economic growth of six high remittances receiving countries, Albania, Bulgaria, Macedonia, Moldova, Romania and Bosnia Herzegovina during the period 1999–2013 using fixed and random effect model and the result indicates that remittances has positive significant impact on the economic growth.

**2.2 Negative effect of Remittances on Economic Growth**

Shafiq et al (2012) in a study that examined the role of foreign remittances and economic growth in poverty alleviation in Pakistan adopted VECM so as to capture the long run and short run relationship, and found that remittances and economic growth has a negative impact on poverty alleviation in the long run. Karagoz (2009) investigated the impact of workers' remittances on economic growth of Turkey

employing OLS regression model on a data range of 1970-2005 and found that remittances inflow has a negative and significant impact on economic growth of Turkey for the period under study. Barajas et al. (2009) investigated the effect of remittances on economic growth of 84 countries for a period of 1970-2004 adopting panel regression analysis and concluded that remittances negatively impact on economic growth of the countries under study. Nkoro and Furo (2012) investigated the relationship between foreign capital inflows and economic growth in Nigeria and found that remittance which is one of the components of capital inflow has a negative and significant impact on the economic growth in Nigeria. They also found that FDI and Foreign aid has a positive impact on economic growth in Nigeria. External debt which was also included in their model as one of the components of foreign inflows was shown to have a negative effect on economic growth. Akpan et al (2014) using dataset from 1970-2012 examined the relationship between remittances and agricultural productivity indicators in Nigeria and the result showed that there is no significant relationship between remittances and agricultural GDP, agricultural productivity index and crop productivity index for the period under study. Iheonu et al. (2017) investigated the impact of capital inflow on economic growth of Sub Saharan African countries for a period of 1985-2015 employing Pooled Mean Group (PMG) estimation technique, the result showed that remittances and FDI which are components of capital inflow has negative and significant impact on economic growth, while foreign aid was shown to have a positive impact on economic growth. Tolcha and Rao (2016) examined the impact of remittances on economic growth of Ethiopia for the period of 1981-2012 through the instrumentality of ARDL model and found that in the long run remittances has a negative and significant impact on economic growth.

**2.3 Causal Relationship between Remittances and Economic Growth**

Baryar (2015) examined the causal relationship between remittances and economic growth of transnational economies of the European Union for the period of 1996-2013, employing Dumitrescu and Hurlin (2012) causality test revealed that there is a unidirectional causality between remittances and growth with causation running from remittances to economic growth at one lag. The result also showed that there is a unidirectional causation between FDI and Economic growth with Growth running from FDI to economic growth at both two and three lags. Sami (2013) employed Vector Error Correction Model (VECM) and Toda Yamamoto (1995) Granger Non Causality test in examining the casual relationship between remittance, Banking Sector Development and economic growth in Fiji for the period of 1980-2010 and found that remittance inflow Granger causes banking sector development and not the other way round. The result also indicates that there is no causation between remittances and economic growth in Fiji for the period under study. Harsha (2014) opined that there is a positive direct and indirect relationship between workers remittances and economic growth in Sri Lanka economy in the long run. He also noted that in the short run, causation runs between remittances and economic growth either directly or indirectly. Different researchers in different continent of the world have investigated the direction of causation between remittance and economic growth and came up with various conclusions. Siddique et al. (2012), Olubiyi (2014), Nyeadi and Atiga (2014), in their separate study concluded that there is a unidirectional causality between remittances and economic growth with causation running from remittances to economic growth. Meanwhile in an independent research work, Jouini (2015), Kumar and Stauvermann (2014), Kumar and Vu (2014) and Siddique et al. (2012) opined that there is bidirectional causality between remittances and economic growth with causation running to both directions. On the other hand, Rao and Hassan (2011), Lim and Simmons (2015), and Ahamada and Coulibaly (2013) concluded that there is no directional causation between remittances and economic growth among the countries under study.

**3. Methodology**

**3.1 Dataset and Variables**

The data used in this research comes exclusively from the World Bank Database. The dataset comprises of annual GDP growth rate, Personal Remittances, Foreign Direct Investment, Gross Fixed Capital Formation, and External Debt all as a percentage of GDP.

Table 2 Variables descriptions

| Variables | Descriptions | Expected sign | Source |
|---|---|---|---|
| Growth | Annual GDP growth rate | | World Bank (2017) |
| REMTG | Personal Remittances inflow as % of GDP | + | World Bank (2017) |

| | | | |
|---|---|---|---|
| FDIG | Foreign Direct Investment as % of GDP | + | World Bank (2017) |
| GFCFG | Gross Fixed Capital Formation as % of GDP | + | World Bank (2017) |
| EXDG | External Debt Stock as % of GDP | + | World Bank (2017) |

Source: Authors' presentation

Table 3 List of Countries in the Dataset

| | | | | | |
|---|---|---|---|---|---|
| Benin | Cote d'Ivoire | Namibia | Guinea | Malawi | Swaziland |
| Botswana | Ethiopia | Niger | Guinea-Biss | Mali | Tanzania |
| Burkina Faso | Seychelles | Nigeria | Kenya | Sierra Leone | Togo |
| Cape Verde | Mauritius | Rwanda | Lesotho | South Afri | Ghana |
| Cameroon | Mozambique | Senegal | Madagascar | Sudan | * |

*Other countries were left out because of non-availability of data on them.

3.3 Model Specification

This study seeks to establish the impact of remittances on economic growth of SSA countries, and to achieve this, a recently developed Pooled Mean Group (PMG) and Mean Group (MG) which is based on panel Autoregressive Distributive Lag (ARDL) model was employed. The increasing availability of data which has resulted in both T and N becoming very large, led to the development of two different estimators by Pesaran et al. (1999). The mean group estimator differ from that of the pooled mean group estimator because in MG both the long run and short run coefficients are allowed to vary across countries while in PMG only the short run coefficient is allowed to vary across countries but the long run coefficients are assumed to be homogeneous. Meanwhile, the MG estimator drives the long-run parameters of the panel by averaging the individual countries long run parameters generated from the panel ARDL models. The panel ARDL model is specified as follows:

$$Growth_{it} = \alpha_i + \gamma_i Growth_{i,t-1} + \beta_{i1} REMTG_{it} + \beta_{i2} FDIG_{it} + \beta_{i3} GFCFG_{it} + \beta_{i7} EXDG_{it} + \delta_{i1} REMTG_{it-1} + \delta_{i2} FDIG_{i,t-1} + \delta_{i3} GFCFG_{i,t-1} + \delta_{i4} EXDG_{i,t-1} + \varepsilon_{it} \dots (1)$$

Where the variables remain the same as defined in the variable description, while i=1,2,3,…….N. and t=1,2,3,…….T. then the parameter for the long run is given as $\theta_i$

$$\theta_i = \frac{\beta_i}{1-\gamma_i} \dots\dots (2)$$

And so, the MG estimators for the entire countries in the panel will be given as:

$$\hat{\theta} = \frac{1}{N}\sum_{i-1}^{N} \theta_i \dots\dots (3)$$

$$\hat{\alpha} = \frac{1}{N}\sum_{i-1}^{N} \alpha_i \dots\dots (4)$$

The MG estimator which estimates separate regression for each of the individual countries in the group and calculate the coefficient of the long run by taking the unweighted mean of the estimated coefficient of the individual countries in the group is represented in the above equation. And so, the MG estimator does not apply any restriction in the long run coefficient. It therefore allows for heterogeneity of the coefficient in both the long run and short run. Meanwhile it is important to note that large series dimension of the data is one of the necessary conditions for the consistency and validity of the MG and PMG approach this is applied in this study which is met by large set of data generated for this study.

The next step is to estimate the PMG model which involves both pooling and averaging and allows for homogeneous long run coefficient and heterogeneous short long run coefficient. Following the ARDL model in equation 1 above, and assuming one as the optimal lag lent, we restate the error correction form of the equation as follows:

$$\Delta Y_{it} = \theta_i \left(Y_{i,t-1} - \beta_i X_{i,t-1}\right) + \sum_{j=1}^{p-1} \gamma_y^i \, \Delta(Y_i)_{i-j} + \sum_{j=0}^{q-1} \delta_y^i \, \Delta(X_i)_{t-j} + \mu_i + \varepsilon_{it}$$

Where Y= Growth, X= Vector of Independent Variables (REMTG, FDIG, GFCFG, EXDG)

γ and δ = short run coefficient of the dependent and independent variables respectively. β = the long run coefficient, θ = the error correction coefficient (this parameter is expected to be significantly negative to alien with the assumption that the variables will return to long run equilibrium given any

level of disequilibrium in the short run), i and t = country and time dimensions respectively, μ =group specific effect.

Meanwhile, having estimated the PMG and MG model, Hausman test was employed to determine which of the two model is the most consistent and suitable model in establishing the impact of remittance on economic growth in SSA countries.

### 3.3 Tests for Unit Root

Generally, a set of parameters are said to exhibit a long-run relationship if the variables are integrated of same order one I (1) (Asterious 2009). According to Nelson and Plosser (1982) in Das (2011) a macroeconomic variable with a large time period *T* is very likely to be characterized with unit-root process. And so, since our dataset includes a long time period (23 years), it is of necessity that we check the order of integration among the variables included in the model before proceeding to examine the existence of any long run relationship. Therefore, it is of imperatives that all the variables included in the model will be subjected to unit root test. The study however employed different types of unit root test techniques in other to ascertain the stationarity of the variables under consideration. Among the techniques used are, Levin, Lin & Chu test, which assumes of common unit root process, Im, Pesaran, & Shin, and Fisher Chi-square test which assumes individual unit root process.

## 4. Findings/Results

The analysis of the data began with a test for stationarity in other to determine the order of integration of the variables which were included in the model. This is imperative since it enables us to meet the minimum necessary condition for running an ARDL model. To be able to apply the ARDL model the variables in the model must all be integrated of either order zero or one that is I (0) or I (1). Unlike other long run models which expect all the variables to be integrated of order one for the model to yield a consistent result, ARDL model produces a consistent result with I (0) and I (1) variable. The result of the panel unit root test is presented thus:

Table 4: Panel Unit Root Test Result

| | | Growth | REMTG | FDIG | GFCFG | EXDG |
|---|---|---|---|---|---|---|
| LLC | Level | -11.105* | -3.2703* | -6.0163* | -0.40128 | 0.68748 |
| | 1st Diff | - | - | - | -15.062* | -14.4036* |
| Order of integration | | I (0) | I (0) | I (0) | I (1) | 1(1) |
| IPS | Level | -13.969* | -3.5809* | -8.786* | -2.0445** | 0.6798 |
| | 1st Diff | - | - | - | - | -12.6079* |
| Order of integration | | I (0) | I (0) | I (0) | I (0) | 1(1) |
| ADF-FCS | Level | 270.50* | 101.32* | 184.37* | 80.215** | 44.5628 |
| | 1st Diff | - | - | - | - | 226.984* |
| Order of integration | | I (0) | I (0) | I (0) | I (0) | 1(1) |
| PP-FCS | Level | 560.95* | 79.017* | 176.91* | 57.1606 | 33.1356 |
| | 1st Diff | - | - | - | 342.303* | 256.065* |
| Order of integration | | I (0) | I (0) | I (0) | I (1) | 1(1) |
| Breitung | Level | -8.3063* | -0.61736 | -4.8077* | 0.410511 | 1.07538 |
| | 1st Diff | - | -11.544* | - | -2.20146** | 10.6926* |
| Order of integration | | I (0) | I (1) | I (0) | I (1) | 1(1) |

Source: Authors computation, (Note: the above test was conducted under the assumption of intercept and trend. The values presented above are that of t-statistics. * and ** denotes significant at 1% and 5% respectively).

The result of the panel unit root presented in table 4 above indicates that Growth and FDIG variables are I (0) in all the five different techniques employed. Four out of the five test indicates that REMTG variable is integrated of order zero with only Breitung test indicating I (1). And so, based on the popularity of the result, we conclude that REMTG variable is I (0). The result also showed that GFCFG variable is I (1) among three of the five techniques while two of the techniques namely Augmented Dickey Fuller-Fisher Chi-square (ADF-FCS) and Philip Peron-Fisher Chi-square (PP-FCS) tests showed that the variable is I (0). We also relied on the popularity of the result to conclude that variable is I (1). The result of variable EXDG indicates that in all the method employed the variable is integrated of order one. This, however, suggests that GFCFG and EXDG are I (1) while Growth, FDIG and REMTG are I (0). The result

is consistent with the necessary condition for the application of ARDL model which allows for the inclusion of variables with I (0) and I (1) levels of integration in the long run model.

Table 5: PMG and MG Result

| Dependent Variable: Growth | PMG | MG |
|---|---|---|
| Independent Variables | Long Run Coefficients | |
| REMTG | 0.0104201 (0.30) | 1.547172(2.28) ** |
| FDIG | 0.0224142 (0.79) | -0.0785185(0.48) |
| GFCFG | 0.0410882(2.54) ** | 0.1232956(1.71) *** |
| EXDG | -0.009353(-1.89) *** | 0.0379583(0.66) |
| | Short Run Coefficients | |
| ECT | -0. 884859 (-17.04) * | -1.065982(-23.34) * |
| D(REMTG) | -1.202052(-2.05) ** | -1.778775(-2.59) ** |
| D(FDIG) | 0.0614322(0.71) | 0.1958635(1.34) |
| D(GFCFG) | 0.0881899(1.21) | -0.0132496(-0.15) |
| D(EXDG) | -0.1578694(-2.44) ** | -0.182009(-2.66) ** |
| Cons | 3.522541(10.48) * | 2.153982(1.43) |
| Number of Observation | | 638 |

Source: Authors' computation. Note: 1) *, **, and*** indicates significant at 1%, 5% and 10% respectively. 2) the values in parenthesis are z-statistics,

## 5. Discussion of the results and conclusions

### 5.1 Discussion of the results

The result of PMG and MG estimator presented in table 5 showed a variant result between the two estimators. The result of the PMG indicates that in the long run, remittances contribute positively to economic growth in SSA, though the effect is shown to be statistically insignificant judging by the value of the z-statistics. This result suggests that 1% increase in remittances will result to about 0.01% increase in growth. The MG estimator on the other hand, indicates that in the long run, remittances have a positive and statistically significant impact on the economic growth of SSA countries, suggesting that 1% increase in remittances will lead to about 1.55% increase in economic growth. The result of both the PMG and MG shows evidence of positive association between remittances and growth. The long run result produced by PMG also indicates that foreign direct investment has a positive but insignificant effect on the level of growth in SSA countries. This result ran contrary to the findings presented by the MG estimator which showed that in the long run, foreign direct investment has a negative and insignificant effect on the economic growth of SSA countries. The long run coefficient of capital formation for both the PMG and MG models indicates that capital formation has positive and significant impact on the economic growth of SSA countries. The result shows that External debt has a negative impact on economic growth in the long run using PMG estimator but under the MG estimator external debt was shown to have a positive impact on the economic growth of SSA countries.

The result of the short run dynamics indicates that the coefficient of error correction term is negative and statistically significant in both the PMG and MG estimation. This however suggests that any disequilibrium in the short run will be corrected in the long run. The result of PMG and MG also implies that 0.88% and 1.06% respectively of the disequilibrium in the short run will be corrected in the long run, meaning that the speed of adjustment is higher in that of MG model as against the PMG.

Contrary to the result of the long run in both PMG and MG the coefficient of remittances indicates that in the short run remittances has a positive and significant impact on the growth of SSA countries' economy. The PMG result indicate that foreign direct investment and capital formation in the short run has a positive and insignificant impact on economic growth, while external debt in the short run showed negative and statistically significant impact on economic growth for both the PMG and MG model. The result of the MG estimation showed that foreign direct investment impact positively on growth in the short run while capital formation impacts negatively on economic growth.

The PMG techniques assume homogeneity of the long run coefficient and this assumption cannot be validated before estimation, and on these bases, it becomes important to conduct a post estimation test. Meanwhile to test for the validity of this assumption, Hausman test was conducted and the rule is that if the long run homogeneity assumption holds then PMG is preferred over the MG model, but if the assumption cannot hold, then MG becomes the most appropriate model that will produce consistent

result. The result of the Hausman test indicates that the assumption of long run homogeneity holds for the selected SSA countries and based on this we adopted PMG as the most consistent and appropriate model.

The inflow of remittance into SSA countries contributes positively to the economic growth of the region in the long run as shown in the PMG result presented above; suggesting that increase in remittances inflow into the region will accelerate economic growth. This result corroborated the findings of other researchers (Ramirez (2013), Nsiah and Fayissa (2013), Giuliano and Ruiz-Arranz (2009), Fayissa and Nsiah (2010)) who in separate studies of different continents concluded that remittances has a positive impact on economic growth using different panel data methodologies. On the other hand, the result is contrary to the findings Barajas et al. (2009), Karagoz (2009), Shafiq et al (2012), Tolcha and Rao (2016) who in their study opined that remittances contributes negatively to economic growth.

**5.2 Conclusions**

Various researchers in the past have extensively examined the impact of remittance on economic growth but the results of their study are to some extent differ, owing to the short span of data employed or the issue of wrong specification of models and misapplication of techniques. To avoid this pit fall, this study employed significant large data span, adopted and effectively employed the panel ARDL model in evaluating the impact of remittances on economic growth Sub-Saharan African countries for the of 1994 to 2016. The analysis began with a unit root test in order to establish the order of integration among the variables. The result of the panel unit root test showed that growth, remittances, and foreign direct investment are I (0), while capital formation, and external debt are I (1).

Furthermore, the study employed PMG and MG estimator under ARDL model and established that there is strong positive evidence between remittances and economic growth in Sub-Saharan African countries. We also applied Hausman test in determining the most consistent and valid estimator among the PMG and MG, and the result of the Hausman test indicates that PMG is the most appropriate model. Based on the result of the PMG model, we concluded that remittances contribute positively to economic growth of Sub-Saharan African countries, though the effect is shown to be statistically insignificant.

Meanwhile, the continent has been attracting significant inflow of remittances up until 2016; more than 60 percent of the inflow of remittance into the continent is concentrated in few countries like Nigeria, Ghana, Senegal and Kenya. And so, to enhance the effect of remittances in the region, polices that will lead to financial system development should be put in place by these countries to enhance free flow of remittances into their domestic economy. This is important because sound financial infrastructures are necessary to effectively channel the positive effect of remittances on growth in Sub-Saharan African countries. Although it has been argued that even spending cash remittances on consumption will still contribute positively to economic growth, we recommend that recipients should invest in productive sector of the economy if the effect of remittances is to be significant in improving economic growth.

Efforts should be made by various government of the continent to ensure that illegal migration from the continent to other parts of the world should be minimized to reduce the incidence of forced labour without commensurate compensation among most of the migrants from the continent. Effective exchange rate policies should be adopted by different countries to ensure stable exchange rate, as the effect of remittances on economic growth is affected significantly by the state of exchange rate. Lopez et al. (2007) opined that remittances may have negative effect on economic growth due to exchange rate appreciation.

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# An evaluation of the management of micro and small enterprises (MSEs) in Zimbabwe: a case study of the manufacturing MSEs in Bulawayo urban

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**Keywords**
Micro and Small Enterprises (MSEs), unemployment reduction, manufacturing MSEs, Zimbabwe

**Abstract**

*The study evaluated the management of the Micro and Small Enterprises (MSEs) in Zimbabwe. The study was prompted by the often-perceived closing shop of these enterprises, disturbing entrepreneurship in the country and in Masvingo Urban in particular. From global perspectives on the role and contribution of the MSEs in leading the countries to meet some of their objectives of unemployment reduction, poverty reduction and economic growth and development, the MSEs are regarded as the veritable vehicles. Many countries of the world today rely on a vibrant MSEs sector. The manufacturing MSEs sector is viewed as the fulcrum for the general development of the economy. The study was a qualitative rooted in the interpretivist paradigm and was conducted in Zimbabwean manufacturing MSEs in Masvingo Urban in particular. A case study design was employed to allow for naturalistic methods of data generation. A sample of 10 managers and 10 owners of the manufacturing MSEs were selected to participate in the study.*

*A multi-stage maximum variation sampling technique was used to cater for the various products that are manufactured by the MSEs in Masvingo Urban. These were purposively sampled to select information rich informants to be included in the research. The participants were either responding to open ended questionnaire or semi-structured interviews. The major findings of the research were that the managers and owners of the manufacturing MSEs in Masvingo Urban lacked management practices that are critical for success and survival of the enterprise in the contemporary and turbulent business environment. The management practices that lacked were capital management, marketing, accounting, purchasing, networking and training and education in business management. Another important outcome of the study was that the MSEs lacked awareness about principled business management. The major issues related to awareness about principled business management were the four fundamental business management principles of planning, organising, leading and control (POLC). It also emerged that the managers and owners of the manufacturing MSEs were affected by the business environmental factors in the category of regulations and policy issues, competition, social, political and technological. Related to these factors were lack of adequate infrastructure, access to justice, discrimination and lack of power to protect intellectual property rights as issues of concern to the performance and management of the MSEs.*

*The study recommends that attempts be made by the Ministry of Micro, Small and Medium Enterprises Development to make sure that the owners and managers of the manufacturing MSEs access training and education in the area of business management. In fact, the ability of these firms to become renowned entrepreneurs relies upon the relevant education and Vocational Education systems to provide and equip the entrepreneurs. Manufacturing MSEs must form alliances to safeguard against discrimination access to justice and protection of intellectual property rights. These alliances assist in making the voice of the MSEs heard in the various quotas of the manufacturing industry.*

# Socio-economic developments under 'Belt and Road Initiative' of China: Regional and global dimensions (Pakistan, a case in point)

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**Keywords**
Connectivity, Business and Trade, Economic and Social Development

**Abstract**

*The fundamental theme of 'economic growth driven concept' introduced by China through 'Belt and Road Initiative' is to connect the business world in the contemporary environments of today and in times to come. Undoubtedly, we are passing through an age of technology dominance with economic capacities of the states playing the central role of bringing societies together. Business and trade are fundamental to all economic pursuits of communities and societies. The people being more quality consciousness are looking for better, affordable and easily available products. This implies that in times to come, firms producing goods and services would require to be more competitive, innovative and agile to come up-to the standards of consumers. That is possible when they are better connected in people to people as well as state to state dimensions especially on regional basis for sustaining growth of business and trade. We also understand that mutual working of states for business ventures brings diversities together and new alliances take place. The spirit behind Chinese Initiative of creating a network of roads and track appears to be idealized for mutual businesses where all stakeholders have win-win positions. The economic and social growth is the idea behind this initiative and countries especially those involved through corridors have very important roles to play for its ultimate success.*

*'Belt and Road Initiative, abbreviated as 'BRI' has two main components; one is 'Silk Road Economic Belt' and second 'Maritime Silk Road' covering land and sea voyage respectively (Zhai Kun, 2015). The main connecting nodes on SREB (Silk Road Economic Belt) includes Rotterdam, Moscow, Istanbul, Tehran, Dushanbe, Samarkand, Bishkek, Almaty, Huoerguosi, Urumqi, Lanzhou and Xi'an. On the other hand, MSR (Maritime Silk Road) covers Rotterdam, Duisburg, Venice, Athens, Nairobi, Colombo, Kolkata, Kuala Lumpur, Jakarta and Hanoi. In nutshell, we can say that BRI covers Europe, Africa, Eurasia, Middle east, South East Asia and East Asia. Pakistan becomes one of the connecting points of BRI through China Pakistan Economic Corridor (CPEC). As we know that communication infrastructure plays a vital role in development of a country through business and trade. Most of the developing countries especially in Asia suffer from insufficient communication infrastructure of any mode, may it be rail or road. BRI as planned, contains enough road and rail networks to connect regional economies to the outside world.*

## 1. Introduction

Networks of communications have always been fundamental to human growth in social and economic developments. This network facilitates people to people contacts, interactions for knowledge seeking and sharing of life supporting means. The phenomenon of facilitating human interactions will continue to be a prerequisite to all business activities as it has remained in the past since ages. Business and trade are basically exchange of expertise which is manifested in the shape of buying and selling of goods and services. In the business world, who produces the best with least cost of production, matters the most, to compete and succeed. Attaining high quality and spending minimum is fundamentally based on knowledge and skills matured over times. All the people living across the world in different parts enjoy the uniqueness in one or the other form; communication networks facilitate exchange of uniqueness for competitive prices.

The Chinese concept of BRI is based on providing connecting nodes to communities and societies at large for sustaining their business trade. Interaction amongst societies for boosting business ventures brings diversities together and a new culture of coexistence should fundamentally emerge. This new

culture is based on mutual benefits, business ethics and knowledge sharing. The spirit behind this initiative appears to be idealized for businesses serving the humanity more than ever before. The outline of the connectivity strategy is obviously China centric which is taking the initiative with large numbers of states forming parts of economic corridors. All economic corridors have their unique geo-strategic relevance to the world politics as well. It is difficult to delink politics from economic and social developments; so is the case of BRI where different regional and global powers look at it from their own perspectives.

## 2. Scope of the Study

The conference paper under the theme is a review study based on the secondary data of numerous recent thoughts on 'Belt and Road Initiative' and its wide range implication in regional and global perspectives. The study basically explores avenues of business and trade for the developing countries of Asia and other countries of the world in general. The paper entails connectivity as the main driving factor in this initiative of Chinese encompassing national, regional and global perspectives of different nations. It also explores BRI's importance related to infrastructural and industrial developments for economic growth and prosperity. Findings of the study are based on authors' own views drawing relevant inferences from past studies on 'Belt and Road Initiative' and 'Economic Corridors'.

## 3. Objectives of the Paper

To analyze the geo-economics and geostrategic relevance and importance of BRI for across the board business opportunities.

To examine the socio-economic relevance of BRI and its impacts on regional and global trade in times to come.

To explore business opportunities and growth prospects among developing countries within the wide umbrella of BRI.

## 4. Literature Review

### 4.1 Physical Dimensions of BRI

The two main dimensions of BRI include 'Silk Road Economic Belt' and 'Maritime Silk Road' abbreviated as SREB and MSR respectively in this paper. These two prongs as shown on the map below (Figure-1), originate from comparatively better developed population nodes from northwest, then spreads out to engulf most parts of the developing societies and finally converge to complete the loop on eastern side of China. The two wings embrace large numbers of countries in regional and ultra-regional dimensions; in its ultimate form, it would impact the whole world and have global imperatives. The combination of two wings makes a connecting loop of business nodes like Rotterdam, Moscow, Istanbul, Tehran, Dushanbe, Samarkand, Bishkek, Almaty, Huoerguosi, Urumqi, Lanzhou, Xi'an, Duisburg, Venice, Athens, Nairobi, Colombo, Kolkata, Kuala Lumpur, Jakarta and Hanoi as shown on the map. Looking at the convergence of geographical and geostrategic relevance of this great initiative, one finds it connecting strategic business centers of Europe, Africa, Eurasia, Middle east, South East Asia, South Asia and East Asia. Rest of the Globe is then connected and covered indirectly. This is how it becomes regional in perspective and global by implication.

### 4.2 Map of BRI

**Map Showing Connectivity of BRI (SREB and MSR)**

Key: Shown with blue and brown colors are MSR and SREB respectively

**Figure-1: Outline Map of Connectivity (BRI)**

Source: Map of BRI by McKinsey Company available at https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/one-belt-and-one-road-connecting-china-andthe-world and Wall Street Journal at http://www.silkroutes.net/OBOR/9MapWallStreetJounal.jpg, referred 25 November 2018

4.3 **Economic Corridors**

The two strategic prongs of BRI are mutually connected through six horizontal bars like CPEC (China Pakistan Economic Corridor), NELB (New Eurasia Land Bridge), CMREC (China-Mongolia-Russia Economic Corridor), CCWAEC (China-Central Western Asia Economic Corridor), CICPEC (China-Indochina Peninsular Economic Corridor) and BCIMEC (Bangladesh, China, India, Myanmar Economic Corridor) as shown on the map below in Figure-2. Like Pakistan finds geographic harmony and geostrategic relevance with BRI through CPEC and geopolitical coherence with China; all other countries have uniqueness and relevance linked with China. The corridors have diversity of communication network including road and rail links. The network of roads and tracks under CPEC as planned has the potentials of providing multiple connecting points with Afghanistan, Central Asian Republics, Russia and India in times to come. Geographically, CPEC is almost in the middle of the two belts as mentioned above. This is how, it becomes pivotal to the entire strategic venture of the Chinese Government. The nodal point on southwestern land tip of CPEC is Gwadar Port which enjoys a commanding position to all seaborne activities in Indian Ocean, Persian Gulf and Arabian Sea. In most part of Pakistan, roads and tracks as part of CPEC, pass through barren land and predominantly least developed population centers. Similarly, the northeastern tip of CPEC also hosts comparatively less developed and least developed parts of China. Similar is the case of other parts of different states forming part of BRI economic corridors.

**Map Showing Six Economic Corridors**

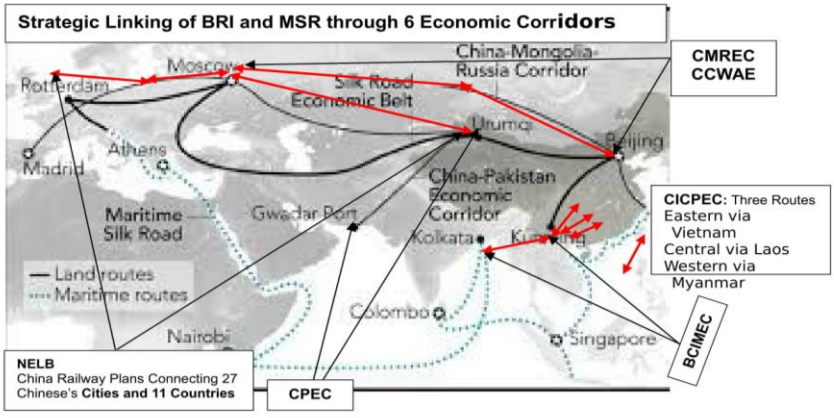



**Figure-2: Economic Corridors of BRI**

**Source**: Map of Economic Corridors, McKinsey Company available at https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/one-belt-and-one-road-connecting-china-andthe-world and Wall Street Journal available at their website http://www.silkroutes.net/OBOR/9MapWallStreetJounal.jpg reference taken on 25 November 2018

4.4 **Pakistan China Economic Corridor (CPEC)**

Pakistan becomes part of BRI through China Pakistan Economic Corridor (CPEC) and because of its geo-political contiguity with China. We understand that communication infrastructure plays a vital role in business developments of a country. Pakistan, contrarily, suffers from insufficient communication infrastructure of any mode, may it be rail or road. CPEC as planned, contains enough inland road and rail networks to connect local economies across the country and then to the outside world. The project has already simulated the economic development in Pakistan which signifies the brighter business growth prospects in future. CPEC route begins from Kashgar, situated on historical silk route and considered as a gateway to Central Asia and it ends on seashore of Gwadar city, projected to be the future trading hub of the world.

CPEC covers impassable mountains of Pakistan's Balochistan Province, its rugged terrain which is devoid of water and other life supporting commodities. Gwadar to Kashgar link provides communication network which includes road as well as rail, abundant avenues of entrepreneurships, access to educational facilities even in far off areas and mind opening looks of modern lives. Its achievement is possible through a long-term planning and people centric developments. CPEC like other economic corridors is projected as the hope for the economic revival for Pakistan. Economic depravity could be one of the major causes of instability in a country.

## Analysis and Conclusions

### 5.1 Conceptual Domains of BRI

China comprising 20 percent of world population is fast emerging world's largest economy. It does not appear to be far away to materialize i.e. becoming leading economy when we look at the Chinese resilient leadership and their national priorities / pursuits in discovering and developing new technologies. BRI conceptualization is indicative of their realization that fast-paced developments are possible only through the connectivity of economic nodes of the world. The concept of BRI is a strategic shift of China to connect it with Asia, Europe and Africa and in the process, develop infrastructure to boost economic growth of the regional countries through mutual cooperation and creating win-win situation for all the stakeholder (Hali, Shukui and Iqbal, 2013). BRI is being funded by Asian Infrastructure Investment Bank (AIIB) which has over fifty signatories. In this way, it spreads the risk among the partner countries. The initiative contains various mega projects, but its strength lies in Maritime Silk Road (MSR) and Silk Road Economic Belt (SREB). BRI has numerous projects connecting Baltic Sea with Pacific Ocean through a network of roads, rails and sea communication for trade. China being pivotal to the project finds its future in connecting east and west and retaining the central place of steering global businesses.

### 5.2 Financial Resource Mobilization

The approximate costs of BRI is $21.1 trillion which is going to make development avenues in developing countries and global connectivity in its entirety. If you look at the number of countries; it is going to have an impact on 65 economies, having more than 80 per cent of the world's population (McBride 2015). MSR will originate from Guangxi Zhuang Autonomous Region of China and connected through various seaports in South China Sea, Andaman Sea, Bay of Bengal, Arabian Sea and Persian Gulf. It will ultimately terminate at Baltic Sea. The second main project of BRI; SREB includes communication infrastructure comprising rails and roads. It connects China-Mongolia-Russia Land Corridor, China-India-Bangladesh-Myanmar Corridor, China- Central Asia-West Asia Corridor, and China-Pakistan Economic Corridor. It follows old Chinese saying which says that 'If you want to be rich, you must first build roads. The financing agencies include Asia Infrastructure and Investment Bank (AIIB), New Development Bank (NDB), Silk Road Fund, China-ASEAN Interbank Association and SCO Interbank Association.

### 5.3 CPEC

Within BRI, all economic corridors have their own relevance of uniqueness; in this paper we have taken CPEC as a case in point to draw relevant lessons. CPEC occupies central place because it connects landlocked countries with sea in addition to its connectivity with BRI. It provides connectivity to China with deep sea water port at Gwadar. For the manifestation of CPEC, China has resolved the issue through investment of $46 billion in the development and its early operationalization. CPEC passes through the entire length and width of Pakistan thus accelerating its economic growth enormously. Fearing China's influence in geo-economic dimensions as projected outcome of BRI, it is facing criticism from competitors. Looking at the geographical relevance CPEC to warm waters, one finds that without CPEC, the China's initiative of BRI remains inconclusive. Therefore, materialization of CPEC within the folds of BRI, having drawn sizable criticism, has become debatable inside and outside Pakistan. Similar is the case of other economic corridors within their respective domains. CPEC as conceived, links one of the most underdeveloped areas of Pakistan with much needed infrastructure. Like Chinese Xingjian, it would specifically provide poverty reducing mechanisms for Pakistan's Balochistan and Khyber Pakhtunkhwa provinces.

### 5.4 Business and Economic Development Avenues

Region of South Asia, Western China and Central Asia are confronting sever challenges related to regional politics, security and socio-economic developments. The fact remains that societies gain, maintain and sustain peace and stability amongst themselves and outside through social harmony, political integration and mutually benefiting distribution of economic resources. People attain and maintain their living standards in comparisons with others. It is the principle of equity which is carried forward knowingly or unknowingly. Pakistan's Gwadar to Kashgar initiative is based on areas which are deprived of necessities of lives in this era of modern developments. Based on number of reasons, it has become one of the most volatile regions now. There is perceived interference of other competitors and stakeholders.

The leading narrative is low development pace due to economical incapacities over the years. Similar is the state of other developing countries of the region namely India, Bangladesh, Sri Lanka, Maldives, Bhutan and others alike which are linked with BRI in one or the other way. They are constrained to international business due to restricted connectivity, domestic and regional politics. BRI is promising in many dimensions, all-encompassing its social, political and economic outlooks with especial advantage to region economies; those who wish to excel in producing quality products and making business, not playing politics.

**5.5 Economic Dimensions of CEPC**

Like other economic corridors, CPEC has a critical geo-economic and geostrategic significance in the region. It is a pacesetter for regional and ultra-regional economies for transporting their businesses across global dimensions. With specific reference to China, which is one of the largest global economies, CPEC provides a cost-effective energy transportation route. Presently, almost eighty percent of Chinese shipment from Middle East and Africa passes through Strait of Malacca to reach eastern coastline of China. After getting Gwadar – Kashgar connectivity which is actually materialization CPEC project, extra distance of 13000 km will shrink to mere 2500 km (Khan, Ali, & Marwat, 2016). Gwadar as gateway of energy trade becomes the starting points for shipment to China which ends on the ancient trading hub of silk route, Kashgar. Pakistan has pivotal role under CPEC due to its geographical relevance; on its western side it has energy exporting nations whereas on eastern side majority of the countries are energy scarce. Trading activities from Middle East, Central Asian Republics and Africa will have input and output of goods through the international seaports of Pakistan; Karachi Port, Gwadar Port and Port Muhammad Bin Qasim all three are linked to CPEC route. Western side of CPEC conjugates with Afghanistan, Tajikistan, Kyrgyzstan, Kazakhstan and northern side Russia - Mongolia whereas in southwestern side, it links with India. CPEC's geographical location makes it a trading frontier for reaching markets of Central Asia and Europe through land transportation. CPEC, thus must play dominant role as a bridge in exploiting energy and developing markets in Central Asia, South Asia and West Asia.

**5.6 CPEC and BRI**

The central point of CPEC and its connectivity with BRI happens to be the port city of Gwadar, Pakistan which is situated on the oil transportation choke point; the Strait of Hormuz. The strategic importance of Gwadar from all dimensions like economic and geopolitical has attracted global power players for joining new trading blocks of the developing nations. This new global economic integration with the incorporation of Eurasia, South Asia, China, Russia, Africa and Middle East will strengthen the sustainable peace efforts in the region. Trade facilitating activities of CPEC will increase the demand of consumer goods, tourism, hotels, resorts, health, education, construction, housing, and consultancy and other tertiary industries. In this case, the main beneficiary would be China, however other developing countries of the region are going to benefit through inter-connecting trades and knowledge sharing. Entrepreneurs belonging to developing countries would benefit through early mover advantage by investing in expected growth-oriented opportunities. Export-led economic growth will speed up after the commencement of production from Export Processing Zones (EPZ) and Special Economic Zones (SEZ) in some countries like Pakistan. International bigger businesses will give opportunity to local firms to initiate joint ventures and business cooperation to utilize each other's core competencies in terms of raw material, expertise and technology. Gwadar port is currently handling around 1 million tons of cargo whereas the planned cargo handling capacity for future is 300 to 400 million tons annually. Mega projects in Pakistan have attracted sizeable foreign direct investments especially for electricity generation plants, road transport infrastructure and upgrading the railway line between the port megacity of Karachi and the northwest city of Peshawar. In this way all countries connected through economic corridors of BRI are likely to become future business hubs. It will be able to generate enormous investment opportunities for locals and foreigners in business ventures like hotels, motels, travels, tourism, seafood / fruits processing, construction, telecommunication, port related infrastructure developments, warehouses and rental services etc.

**Opportunities and Challenges**

**6.1 Viability of Economic Corridors**

Economic corridors as integral parts of BRI are not limited to energy transportation and economic needs of China only; these link other social development issues which need to be settled for regional stability. According to Chou & Ding (2015), Chinese western region Xinjiang is suffering from violence and ethnic conflicts and has direct links with regional disturbance. Central Asia and South Asian regions have strategic value for China as the roots of violence in Chinese territory belong to the politically and economically weak neighboring countries. Collapse of USSR in late 1980s, left behind impoverished and politically unrepresented Central Asian Republics which subsequently became the nurturing grounds for regional terrorism. Xinjiang at times, face violence due to anxiety emerging out of unequal distribution of resources for collective social developments. Chinese government envisioned development of its western region with its inclusion in CPEC though development of special economic zone in Kashgar, infrastructure development, social welfare and environmental protection projects. In this way, economic corridors are going to play vital role in sustainable peace process for the region through cross borders economic cooperation.

**6.2 Economic Benefits of CPEC**

Taking example of CPEC for Pakistan, it is a hope for economic revival of the country. GDP growth targeted for year 2025 is 8% by the government statistics (Statistics Division of Pakistan Report 2017). Despite slower economic activities at the present, the growth prospects of Pakistan are very high in times to come. CPEC is predicted to have significant impact on trade of Pakistan as sustainable and high international trade is one of the symptoms of the economically growing country. The target of increase exports from present $25 billion to 150$ billion in year 2025 shows the growing trend in trade and economic activities of the country. The trade prospects of Pakistan would improve due to free trade agreements with China signed in year 2006. In Pakistan, development of Special Economic Zones (SEZs) as part of CPEC will play a supporting role in economic uplift of the country through generation of jobs and business opportunities. SEZs offers special fiscal incentives which include tax omission for ten years and importing capital goods will be duty free. Government of Pakistan has identified thirty-four economic zones and twenty-nine industrial zones in different part of the country (Ali, et al., 2017). These zones will meet the future requirements of producing goods and services thereby creating jobs and competitive Small to Medium Enterprises. Creation of export processing zones would enable local industries to grow in collaboration with international companies. However, it needs safe and secure environments to do business for sustainable growth of local business and industries.

**6.3 Small and Medium Business Enterprises**

BRI and economic corridors provide abundance of opportunities for small and medium capacity investors for all Asian countries and African and European states in general; however, from geo-political perspective, it appears that there are barriers which need amicable resolves. These barriers include security apprehensions, misnomer of power balance and personal ego of leaderships for gaining domestic political mileages. This study concludes that these apprehensions could be resolved through dialogues under regional leaderships. BRI and its grand connectivity designs should serve the small to medium businesses of national statures to succeed. Its entanglement in political and geo-strategic mileages would be devastating for communities and states.

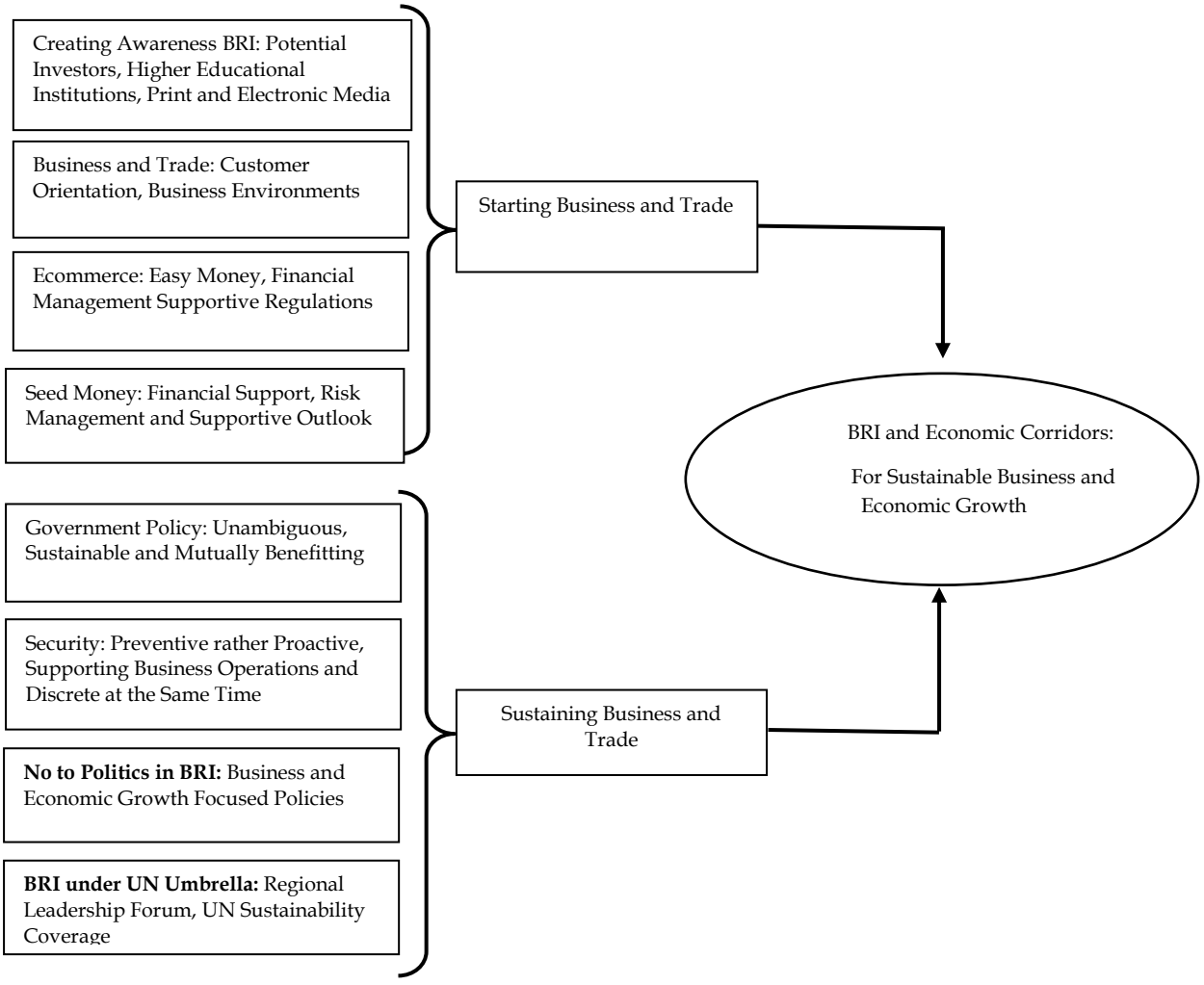
**6.4 Chinese Role in Regional Development**

China provides that kind of regional leaderships for all related countries to set aside their political motives and see the whole issue from economic points of view. Insufficient awareness regarding corridors for example, is creating skepticism and fear of extinction to smaller domestic businesses due to technologically advanced and cost-efficient Chinese manufacturing companies in coming times. That is going to force the industrialists of developing countries like Pakistan to compete in quality and price. The point to note here is that one cannot demarcate distinct boundaries of political, economic and social design. They all are linked with each other and either supporting or contracting in manifestations. The countries have differences on ideological, political and cultural grounds and for their resolution, there is a need of regional leadership. Such leadership would require a leading role to focus on business and trade for the well-being of the people.

### 6.5 Proposed Model for Developments through BRI and Economic Corridors

According to the proposed model as given below, business facilitation and sustainability would lead the geo-political aspiration of the societies. Governments of all the countries need to ensure the support at every level by conducting seminars and media awareness campaigns. The study materials on BRI and economic corridors needs to be introduced at higher education institutions to explore new business opportunities in changing regional trade scenario. Entrepreneurial projects at university level require to be linked with financing facility to turn ideas into earning realities.

Business and Economic Development Model for BRI and Economic Corridors




**Note:** The diagram shall be explained during presentation

### Conclusion

BRI and economic Corridors are to boost business and trade among countries and create environments of tolerance, peace and harmony among societies of diverse outlooks. Social developments leading to better living conditions and bringing happiness will facilitate in eradicating destabilizing notions. The extension of economic corridors would enhance mutual trade through elaborate transportation network to all countries of Asia, Africa and Europe giving them sense of cohesion. It will bring in new trading blocs where people have more opportunities for joint ventures with international companies and local industries to compete in the global market. Survival of our future generation depends on the success of connectivity projects like BRI and economic corridors.

Geographical spread of BRI and economic corridors reflects China's vision of economic growth though linking of European and Asian markets. China is good at exploiting the natural resources including barren lands and countries like Pakistan can benefit from this expertise for economic uplift of its

people. Historically, the performance of agriculture sector of Pakistan has not been very promising; for example, it has grown at a meagre average rate of 2.4% since 2011-12 (Pakistan Economic Survey of 2017-18).

At the same time Pakistan needs to careful of making contracts with China keeping in view its peculiar socio-cultural imperatives. The critical aspects include financial benefits trickling down to the poor people, adherence to international regulations and domestic taxation system playing fair with local firms as well. Chinese investment should not simply be an opportunity to earn quick returns but to cultivate a long-term partnership based on mutual benefits. It has been estimated that the growth in Chinese agriculture contributed to reducing poverty four times compared to other sectors. According to data of World Bank, in China, the share of people living below poverty line of $1.90 decreased impressively from 67% in 1990 to 0.7% in 2015. In Pakistan there are 7.7 million extremely poor people living on $1.90 a day. Agriculture development in Pakistan with the assistance of Chinese can resolve the problem at faster pace.

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# An empirical analysis of oil price and exchange rate: evidence from the selected oil exporting and oil importing countries

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**Keywords**
Oil price, exchange rate, oil-exporting countries, oil-importing countries

**Abstract**

*This study investigates the impact of oil price on the exchange rate by incorporating the economic indicators (Inflation, Money supply, and Net trade), financial indicators (Interest rate and Stock market index) and US factor (Implied volatility index), the researcher attempts to identify the relationship among these variables on the exchange rate. The Ordinary least square method was performed to meet the purpose of this study by using the monthly time series data technique for the period August 2005 to December 2016 and the sample countries are selected from oil-exporting (Russia, Canada, and Malaysia) and oil-importing countries (China, India, and Japan). The findings reveal that an increase in oil price oil-exporting countries (Russia, China, and Malaysia) currency will appreciate and oil-importing (China and India) countries will also appreciate except Japan currency. The evidence from China and India portray a theory that developed by Krugman (1983) and Golub (1983) where an increase in the oil price oil-importing countries experience appreciation in the exchange rate and vice versa due to wealth transfer. Thus, in order to formulate and implementing economic policies the government should consider the impact of oil price specially the exchange rate policies since the impact is significant.*

## Introduction

Oil price is subjected to change by several factors and lead the world economy to move in different direction for both oil-importing and oil-exporting countries. It is also can lead to a domino effect on macroeconomics and financial variables, especially on the exchange rate fluctuation. The empirical evidence stated that as an increase in the oil price would affect the economic and financial condition to change in many ways. Basically, any changes (increase) in oil price would affect the country's wealth through the trade channel by transferring the wealth from oil importing to the exporting countries. Hence, the exchange rate would fluctuate as the oil prices increase or decrease (Tuhan et al, 2013). Generally, research on oil price has been found a mixed result with regards to its different effect on the exchange rate movement experienced in both oil importers and exporters countries (Zalduendo, 2006; Kutan and Wyzan, 2005; Koranchelian, 2005; Spatafora and Stavrev, 2003; Lizardo and Mollick, 2010; Akram, 2004; Habib and Kalamova, 2007; Bjornland and Hungnes, 2008; Gauthier and Tessier, 2002). Apart from the debate, the impact of oil price on the exchange rate was found not consistent with the theory introduced by Golub (1983) and Krugman (1983) namely Trade Channel Impact and suggested that oil exporting countries would experience appreciation in currency if the oil price increase.

Apart from the focus variable (Oil Price), economic and financial variables also would directly contribute to the relationship towards the exchange rate. Economic variables such as Inflation (Simpson et al., 2005: Hsing, 2007), money supply (Hushmand et al., 2012), and Net trade (Gondaliya and Dave, 2015), ware found inconclusive findings and therefore no clear consensus is provided to explain the relationship between Exchange rate and oil price with other economic indicators. Plethora studies have been conducted on financial variables such stock market index (Bhattacharya and Mukherjee, 2003), Interest rate (Kanas, A., 2005) and many others and yet there are no solid clear consensus findings pertaining its relationship.

There are numbers of scholars have examined the influence of inflation, interest rate, money supply, net trade and stock market towards the exchange rate. However, less attention is devoted to the impact of oil price movement in the exchange rate market by incorporating the economic, finance and US

factor to the model. The impact of oil price can be further explained by the Law of One Price theory, which was introduced by Blomberg and Harris (1995). The theory suggested that the linkage between the exchange rate and oil price volatility is justified when the international market is efficient and no barriers of trade. Furthermore, the same product that will be sold at the same common-currency price in different nations. Therefore, this study attempts to investigate whether the oil price effect exchange rate alone or indirect effect with a presence of both macroeconomic and financial factors.

Despite of plethora studies on oil prices are concerned, issues on the gap pertaining to its relationship towards an exchange rate are still questionable among the scholars. Most of the literature ware focused either on single or several oil-importing and oil-exporting by using time series data or panel data. Previous literature also focused either using economic and financial variables separately. The literature generally concentrates on this area, in fact, the link between oil price and exchange rates is influenced by economic variables and financial variables. In addition to these factors, the researcher also considers US factor as proposed by Yang et al., (2017), since both of crude oil prices and exchange rate are quoted based on US dollars. Thus, this study is expected to contribute the body of knowledge, where this study includes oil price to the model and incorporating the financial, economic variables and US factor to the model.

**Theoretical Review**

**The Law of One Price**

Blomberg and Harris (1995) introduced the Law One Price (LOP) theory that can be utilized to explain the linkage between the exchange rate and oil price. The international market must be efficient, no barriers of trade and the same product will be sold at the same common-currency price in different nations. US dollars is usually used for the crude oil price.

According to Yang et al., (2017), the LOP can be expressed as:

$P^* = e + P$ (1)

Where;

$P^*$ = oil price in units of foreign currency

e = nominal US dollar exchange rate (foreign currency per unit of US dollars)

$P$ = oil price in US dollars

Equation 1 presents, the crude oil price in the foreign country would decrease due to a decrease in e (nominal US dollars exchange rate), a decrease in the foreign currency would increase the crude oil price in the US dollars. While the remote money devalues to the US dollar. Rise in the crude oil price in the US dollars would lead to purchasing power and oil demand of foreign consumers increase.

In general, the price of goods is made up of traded and non- traded goods. The home and foreign countries consumer price indexes can be Illustrated as follows;

$p = (1 - \psi)\, pT + \psi p^N$ (2)

$p* = (1 - \psi\, *)\, p^* + \psi^* p^{N*}$ (3)

Where;

$p^T(p^{T*})$ and $p^N(p^{N*})$ = Price of traded and non-traded goods for home country

($\psi^*$) = weight of the expenditure share of non-traded goods in the home country

The nominal exchange rate can be constructed by Combining Eqs. (1) to (3).

$e = (p^{N*} - p^N) + (1 - \psi^*)(p^{T*} - p^{N*}) - (1 - \psi)(p^T - p^N)$ (4)

When weights of the expenditure share of non-traded goods ($\psi \approx \psi^*$) is similar in the home and foreign country, same goes to the changes in the oil price of non-traded goods in the home and foreign countries caused by the cost-push effect. The effect of oil price can be seen by the home country price of traded goods is corresponding to the relative price of traded goods in a foreign country. In this way, an increase in the oil price could raise the relative price in the home country if it's oil-importing country and to a greater extent than the price of traded goods in the foreign country. Therefore, the home country would experience depreciates. Conversely, an increase in oil price causes the home currency to appreciate if the home country is an oil-exporting country. Effect of oil price on exchange rates can be rebuilt by included Is this part of the financial variables into the model to form an alternative model. Assume m(m*) is the nominal demand for money in the home (foreign) country dependent on the price level p (p*), real income y(y*), and interest rate i(i*). From both home and a foreign country, assume that the effect these

three variables on money demand is similar, based on the interest rate parity condition, Eq. (1) can be reconstructed to represent the nominal exchange rates:

$$e = (m* - m) + (y - y*) \quad (5)$$

Eq. (5) obliges crude oil price as an extra-logical variable to clarify its impact on the exchange rate (Lizardo and Mollick, 2010). This model can likewise be considered as a basic long-run monetary model for exchange rate determination. Consequently, by treating oil-importing country and oil-exporting country differently the researcher can examine the dependence structure at the reliance structure of the crude oil price and the exchange rate at different circumstances.

**Literature Review**

Some early studies on oil prices and exchange rate have been discovered by the Amano and Van Norden (1998). The study claimed that both oil importing, and oil exporting countries seemed to support the relationship between oil prices and exchange rate in the long run. These findings also are consistent with both theories developed by Krugman (1983) and Golub (1983), Another prominent study develops by Yang et al (2017) have used a robust analysis using wavelet coherence analysis and found not consistent results as prescribed by both theories. Based on this study Mixed findings can be generated as the oil exporting countries produce negative in the relationship between oil prices and exchange rate, meanwhile, the oil importing countries showed uncertain relationships. Interestingly, another latest study conducted by Ahmad and Hernandez (2013) and Lizardo and Mollick (2010) revealed that the effect on exchange rate can be found only in oil exporting countries and not for the oil importing countries, another justification the absence of its relationship is due to different approaches in assessing its relationship as mentioned by Buetzer et al (2012)

As stated earlier, economic variables were also can be considered as the contributor for the direct effect of exchange rate movement. An established paper published by Simpson et al (2005) dictated that when both oil-importing and oil-exporting countries would be having a similar direction and remain the low level of the inflation rate, the domestic country will experience appreciate the exchange rate. The monetary policy tools can be determined using the interest rate (Dominqueez, 2006) which also is yet to a general conclusion. Mc Pheron and Rakovski (1998) found no relationship between Interest rate and exchange rate using vector autoregressive model (VAR) in Kenya while a study conducted by Husmand et al (2012) dictated that Interest rate has a positive relationship with the exchange in the long run and short run effect using lag monetary policy. An opposed finding, can be seen in the studies conducted by Rahman and Uddin (2009) and Bhattacharya and Mukherjee (2003) with no relationship between interest rate and stock market index in south Asian countries and these studies also supported study by Yang et al, (2017) which the result is consistent in the finding.

**Data and methodology**

The main data consists of oil prices and the exchange rate based on selected oil importing (Japan, China, and India) and exporting (Russia, Canada, and Malaysia) countries. Other variables such as the economic (Money supply, Inflation, and Net Trade), financial (Interest rate and Stock Market) and US factor (Implied Volatility Index) are used in this study using data stretching from August 2005 to December 2016 in monthly basis. The sample selection selected based on the highest importing and exporting oil countries, except Japan and Malaysia. The researcher distinguishes between oil importing and oil exporting countries in the dataset as Eq. (4), which shows the currency in the oil-dependent countries reacts more sensitively to the changes in oil price (Yang et al., 2017). The dataset contains monthly data observations from August 2005 to December 2016, expressed in percentage data to obtain a return series for comparison of the finding. The data obtained from DataStream, FredEconomicdata, Data Stream and Bloomberg. Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) test unit root test was used to determine the order of integration of the variables used in the analysis and to avoid the spurious results. Besides that, Ramsey reset test show the p-values are not significant at 5 percent level which indicates the data are correctly specified and OLS estimation can be used.

In regressing multiple regression or simple models, Ordinary Least Square (OLS) can be carried out to run the model constructed. The lease square function is created to identify the relationship between the dependent variables and independent variables. The relationship can be expressed as below:

$$Y_t = \beta_0 + \beta_1 Z_{1t} + \beta_n X_{nt} + \varepsilon_t \quad (6)$$

Where $Y_t$ is exchange rate, $Z_{1t}$ is represented of focus independent variables which are oil price, $X_{nt}$ is the others factor that explains the exchange rate, which is inflation, money supply, net trade, interest rate, stock market index and implied volatility index. $\beta_0$ represent constant parameters and $\varepsilon_t$ are the error term. The sign of coefficient $\beta_{nt}$ are expected to be positive, in the regression analysis, monthly data will be used in order determining the regression coefficients. The Empirical model developed by the researcher is contrasting with the others published researches such as Yang et al. (2017) and Volkov (2016). The researcher includes economic and financial variables as the independent variables which include Inflation, Net Trade, Money supply, Interest rate, Stock market price, Implied volatility index and main independent variables Oil price. The coefficient sign of oil price is expected to be positive for oil importing which indicate depreciate in domestic currency, while for oil-importing the sign expected to be negative. This is due to the demand for foreign currency will increase if the price of oil increase then the domestic currency theoretically should depreciate for oil importing countries. Thus, if the sign of the coefficient is positive and statistically significant it will imply that the domestic currency will depreciate.

**Data analysis and empirical results**

The general findings suggest that all the variables stationary at level, except for China variables which are Interest rate, Money Supply, and Stock market index that stationary at first order different. The diagnostic check result indicates the data suffer from serial correlation, heteroscedasticity. Thus, the researcher using the HAC(Newey-West) covariance method in order to treat the problems. Besides that, Ramsey reset test confirm that the variables are correctly specified.

| | Oil-Importing | | | Oil-Exporting | | |
|---|---|---|---|---|---|---|
| Country | Japan | China | India | Russia | Canada | Malaysia |
| Variables | Coefficient | | | | | |
| Inflation | 0.2253 | 0.0243 | 0.1136 | 1.7878*** | 0.0038 | -0.0030 |
| | (-0.5575) | (0.0772) | (0.1287) | (0.7635) | (0.3730) | (0.0033) |
| Money supply | -51.5182*** | 0.0134 | -0.2324*** | 0.0140 | 0.9672** | -0.0025 |
| | (-4.3751) | (0.0231) | (0.0744) | (0.0958) | (0.3816) | (0.2013) |
| Net Trade | -0.0023 | 0.0091** | 0.0051 | -0.0154 | 0.0006 | 0.0002*** |
| | (-0.0038) | (0.0041) | (0.0316) | (0.0131) | (0.0013) | (0.0001) |
| Interest Rate | -8.3100 | -0.1494 | 0.0535 | 0.0358 | -0.0091 | -0.0028 |
| | (-0.0008) | (0.3236) | (0.0279) | (0.0331) | (0.0095) | (0.0117) |
| Stock Price | 1.9163 | -1.6607 | -3.1735 | 0.0840 | 0.0283 | -0.2171*** |
| | (-5.4602) | (1.7252) | (2.9634) | (0.0721) | (0.0367) | (0.0578) |
| Implied V. | -0.0620 | -0.0114 | 0.0920** | 0.1077 | 0.1897*** | 0.0001 |
| | (-0.0515) | (0.0084) | (0.0357) | (0.0968) | (0.0373) | (0.0006) |
| Oil Price | 0.0037 | -0.0167** | -0.0327* | -0.2693*** | -0.1045*** | -0.0002 |
| | (-0.0213) | (0.0071) | (0.0160) | (0.0477) | (0.0169) | (0.0002) |
| C | 0.3053* | -0.0941* | 0.5000 | -0.6795 | -0.4744* | 0.0040* |
| | (-0.1776) | (0.0857) | (0.3646) | (0.5344) | (0.2679) | (0.0024) |
| R-squared | 0.5576 | 0.083935 | 0.3944 | 0.4242 | 0.5428 | 0.2604 |
| Adjusted R-squared | 0.5336 | 0.033837 | 0.3615 | 0.3930 | 0.5180 | 0.2203 |
| F-statistic | 23.2305*** | 1.675435* | 12.0015*** | 13.57712*** | 21.8777*** | 6.4881*** |

Notes: ***, **, * Indicates significance at the 99%, 95% and 90% level. Standard error is given below the coefficient the parenthesis.

Table 4.1: Results of Regression for Both Oil Importing and Oil Exporting Countries. Dependent variable: Exchange Rates

Table 4.1 shows the result of the OLS regression analysis for both oil exporting and importing countries. The coefficient sign for oil prices in most sample shows a negative relationship between the oil prices and exchange rate in both oil importing and exporting countries and significant at 99% confidence level except for Japan and Malaysia respectively. A negative sign implies that an increase in oil price will

lead to appreciate in the exchange rate in domestic currency for both oil importing and exporting countries. R-squared for all sample is between the range 0.8 to 54.28 percent and consider as low power of explanatory due to other omitted of other independent variables.

**Discussions and conclusions**

This paper attempts to determine the relationship between the oil price and exchange rate by incorporating the economic, financial and US factor into the estimated model. The theoretical perspective explains that the role of oil prices in explaining exchange rate movements was introduced by Golub (1983) and Krugman (1983) is intertwined by its relationship in nature. Golub (1983) and Krugman (1983) explain that oil prices rise in the oil-exporting country may experience appreciation, while for the oil-importing country may experience depreciation in the currency. However, there was contradict result between oil exporting countries and oil importing countries, where all oil-importing countries (Russia, Canada, and Malaysia) consistent with the theory but surprisingly two of oil-importing countries (China and India) are not following the theory except Japan. This study consistent with Yang et al, (2017) where the impact of oil price on the exchange rate is negative for oil exporting countries and for oil-importing countries there is an uncertain relationship. The impact of oil price on the exchange rate is positive for Japan while China, India, Russia, Canada, and Malaysia there was a negative that indicates increase in oil price the currency will appreciate caused by wealth transfer from oil-importing countries, since coefficient sign for Russia, China, and Malaysia have found negative, the result consistent study by Akram (2004) where the oil-exporting country which is Norwegian experience depreciation in the currency when the oil price increase. In addition, a study by Yang et al, (2017) found that oil price is a significant factor in determining the exchange rate as stated in table 4.1, and there was a negative relationship between oil price and the exchange rate for oil-exporting countries. However, the relationship is weak for Japan and Malaysia, this is because the dependency on Crude Oil is less for these countries. Increase in oil price will cause–the China and India currencies to appreciate which is against with existence theory, this is due to, these countries revalue its currency in order to gains the purchasing power because of these countries are the highest oil-importer in the world. Apart from that, it can be assumed that since the net trade show a positive sign the currency will be depreciated. However, by theory if the export increases the currency should be appreciated, however, the currency is depreciated, this is because those countries wanted to increase the level of its product competitiveness in the trade market. This result indicates that these countries control their currency in order to gains the benefits from the trade market. Thus, it can be concluded that the findings on the intertwinement impact of oil price toward the exchange rate would give a practical implication to policymakers and traders in terms of designing the effective fiscal policy and monetary policy for both oil-exporting and oil-importing countries.

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# Diversification of the economic base in the UAE

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**Key Words**
**Economic development, Entrepreneurial ecosystem, Innovation Policy, United Arab Emirates**

**Abstract**

*This paper discusses the implementation of the national innovation policy in the United Arab Emirates. The country is in transformation from a resource-based economy to a knowledge-based economy, and innovation and renewal of the economic base are among the key attributes to this transition. The visionary leadership of the country has made significant investments in developing innovation policies and strategies for nurturing innovation and entrepreneurship in the country, and this paper discusses the status of the implementation of these strategies to date. The paper will apply actor network analysis in describing the national entrepreneurial ecosystems and compare the ecosystems to earlier documented state of the art systems in literature, and global benchmarks. The paper applies institutional theory in describing the inhibiting factors for the development, namely the cultural, institutional and cognitive factors prevailing in the UAE. It further analyses the existing ecosystems, and the specific characteristics and strengths that the UAE can draw on and leverage in the implementation of the strategy. The paper concludes that local culture and tradition play a major role in the initiation of entrepreneurial activities in the UAE. Development is path dependent, and the context works in the favor of incremental innovations. The country has invested in the resources ad capabilities that enable innovation, but to date the exploitation of these resources has been limited. The paper makes recommendations for improved use of these investments. The paper increases understanding of the context related enablers and obstacles to the implementation of the policy in the UAE and contributes to innovation policy and entrepreneurial ecosystem literature with a case study from a less published context. On practical level, the paper increases awareness of the UAE entrepreneurial opportunities, and can help increase investments and start up activities in the UAE.*

## The Introduction

Innovation has been recognized as the key attribute to growth especially during times of rapid change, because it provides more efficient and effective procedures and tools to run different industries (Škerlavaj et al., 2016). Innovation is a two-way process, in which businesses advance by creating new product and processes, while public sector works on providing the necessary enabling conditions (Edquist, 2011). Kogabayev and Maziliauskas (2017) describe innovation as central for the development of any economy and economic activity. Innovation on national level is a long and cumulative process including a considerable number of decisions with long term impacts on the national development, resulting in the dynamic growth of the economy, increasing employment opportunities, and creation of pure profit for business (Kogabayev & Maziliauskas, 2017). In knowledge economies the most impactful innovations are science based and enhance social activities and apply social production (Kogabayev & Maziliauskas, 2017).

Innovations are increasingly created in collaboration and co-creation between various organizations, which together exist and evolve in an ecosystem of mutual interdependencies. The emergence of such dependencies inherently leads to changes in the roles and dynamics among the participating firms and government organizations. Dynamics and corporate strategies in engaging in such ecosystems or platform based production has been studied extensively in recent years, However, most studies have failed to recognize the importance of the adaptation to the existing institutional environments, or alternatively, the need for institutional change in the ecosystem of the involved organizations and actors.

Research has tended to focus on impartialness and neutrality of the institutional environment rather than on the dynamism and change, how the prevailing arrangements, norms, values and beliefs either enable or hinder the successfulness of service development projects and the implementation of the

finalized and commercialized service (Gronum et al., 2012). Due to its constructive impact on information flows, trust-based behaviour is cited as a crucial factor in enhancing open innovation through inter-firm collaboration (Pittaway et al., 2004, Gronum et al 2012) and a fundamental reason for longevity for inter-firm networks.

The operating environment is specifically important for SMEs seeking to exploit their explicit knowledge (Jørgensen & Ulhøi, 2010). Gronum et al (2012) study the impact of innovation breadth on firm performance and, subsequently, the impact of network heterogeneity and strength of network ties on firm performance for SMEs. Results confirm that both innovation breadth and networking activities have a subsequently positive impact on SMEs' performance (Baldwin & Gellatly, 2003).

Majority of companies in the UAE are SMEs, so the focus on enabling environment for this sector is of essence in Arab Emirates' context. There is limited research focusing on innovation in the Arab world, and the root causes of the low rates of innovation. Iqpal (2011) argued that Arab countries apply certain systems of innovation but there are many factors that weaken this compared with other countries. Ababneh & Hatamleh (2013) stressed that Arab countries differ from other countries, including in the level of science, technological development and technological capabilities, all of which affect the level of innovation. Badran and Zoubi (2010) concluded that there are some systems that stimulate innovation in the Arab countries, but these are often poor, and affected by many factors that reduce their effectiveness, such as poor infrastructure, low technological achievement index, and weak capacity.

This paper analyses the factors enabling, hindering innovation, and the implementation of the national innovation policy in the UAE. The analysis is performed through investigation into the entrepreneurial ecosystem in the country with actor network analysis (ARA), including analysis of the key stakeholders (actors), their relationships and activities. The paper reviews the earlier research on entrepreneurial ecosystems and identifies the factors that are specific to the UAE context. The paper gives recommendations on enhancing the ecosystem efficiency and targeting of the support instruments, as well as increase awareness of the context specific variables in the UAE. The paper contributes to the academic discussion on entrepreneurial ecosystems, and specifically on ecosystems in emerging economies in the middle of societal and economic transition. The paper will support policy makers in adjusting support instruments for the implementation of the national innovation agenda, as well as help assess the status of the implementation of the UAE innovation policy. The paper increases awareness of the UAE entrepreneurial ecosystem and opportunities for new companies and investors in the region. The paper further initiate's discussion on the role of culture, cognition and legal frameworks in ecosystem based economic production.

**Literature review**

Innovation reduces the cost of undertaking tasks and provides new and different ways to perform a task already performed by an existent process (Melchor, 2013). Innovation is important in a dynamic technological phase as it leads to more efficient and proactive procedures and tools to run various industries. The most successful economies in the world are driven by technological advancement that is enhanced by innovation. According to Matta and Ashkenas (2003), the reasons why many ideas and innovations have failed over the years vary depending on the scale of the implementation, the location and the time involved. This again highlights the importance of the local context, and the quality and amount of interaction among local stakeholders.

The following chapters will focus on entrepreneurial ecosystem as the vehicle to deliver the needed socio-techno-economic transitions needed for effective implementation of innovation policies. The chapter first discusses the entrepreneurial ecosystem literature on global level, and later the national level in the United Arab Emirates.

**2.1 Entrepreneurial ecosystems**

Context plays a pertinent role in ecosystem situating the entrepreneurial phenomenon in a broader field that incorporates temporal, spatial, social, organizational, and market dimensions of context (Zahra, 2007; Zahra et al., 2014).

Too often context is "taken for granted, its influence underappreciated or…controlled away" (Welter, 2011: 173-174). Consequently, it leads to a generalized model of entrepreneurship. Recent literature on entrepreneurship has stated that context plays a pivotal role in the success of entrepreneurial

activities and should not be treated as a simple control variable or a proxy. This has led to a call for a deeper examination of the cultural, social, political, and economic structures and processes associated with location. A context like location is not a cause of particular entrepreneurial practices but rather reflects a much more complex influence on entrepreneurship (Johannisson, 2011).

Entrepreneurial ecosystems focus on the cultures, institutions, and networks that build up within a region representing the values and priorities of an institution or the government. Entrepreurial ecosystems consist of the relevant government institutions, innovators, educational institutions, anchor companies, local SMEs and startups. Also, the legal framework, the culture, norms, values, basically the whole socio-techno-economic regime, plays a role in the way the entrepreneurial ecosystem is structured and operates. This can be organic, self-emerging system, or a purpose-built operation. There is a need to develop knowledge and improve the environment within the public sector, and this has provided much opportunity for creativity and innovation (Kozáková, 2013). The trend is that government takes an active role in stimulating entrepreneurial ecosystems in developed countries.

The ability of organisations to effectively participate in these ecosystems has been identified as a key ingredient for open innovation for the following three reasons put forward by Konsti-Laakso et al. (2012):

1. The network is vital for the development of internal innovation capability to consult with other actors in the process (Jørgensen & Ulhøi, 2010).

2. The network is necessary to involve external partners to help promote the development of R&D ideas (Tidd, Bessant & Pavitt, 2009).

3. Other firms need to be involved during the implementation of new innovation (Tidd, Bessant & Pavitt, 2001; Prahalad & Ramaswamy, 2004).

On national level, government institutions define and instrument innovation policies that stipulate national innovation priorities, strategic objectives and means to measure progress. The most commonly used measurement framework is the Global Innovation Index by INSEAD. The framework defines a number of domains needed for successful innovation ecosystems and means to measure these dimensions. This framework is used also in the United Arab Emirates. The national innovation policy stipultes target areas for innovations, which are then measured by the Global Innovation Index. The focus is on creating environment that is conducive of innovations, especially on home grown innovations as opposite to the legacy of importing innovations to the UAE.

**2.2 Entrepreneurial ecosystems in the UAE**

In the last decade, the UAE has experienced very rapid growth in its economy. The GDP jumped from 510 billion dirhams to 1.47 trillion dirhams in 2014. In 2015, GDP reached 1.8 trillion dirhams, a growth of 3.6%. The country is paying significant attention to the non-oil sector to support the national economy and to compensate for the low performance of the oil sector (Ministry of Economy, 2017). The UAE has joined the innovation trend, as detailed in the national innovation agenda and knowledge society development goals. His highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai launched a National Innovation Strategy on October 2014 with the aim of making the UAE one of the most innovative nations in the world. The first priority is to establish a stimulating environment for innovation in the form of supportive institutions and laws. The main purposes behind encouraging innovation can be summarised as implementing a sustainable investment plan in the UAE's human capital, driving economic development away from the oil sector, enhancing the UAE's global competitiveness and introducing corporate methodologies and a culture for innovation (UAE Innovation strategy).

The national innovation strategy includes numerous short terms and long-term goals, specific activity lines and clear key performance indicators to evaluate the implementation and impact of the activities. The principal approach for the implementation of the strategy is through government lead public private partnerships and consortium research. In majority of cases the context is smart city development with concrete and direct benefits to local businesses and citizens.

The UAE is an oil-producing country, and it is currently impossible to develop this industry effectively without innovation (Indradewa, Tjakraatmadja, & Dhewanto, 2017). At present, innovation programs are stimulated by the government in seven different sectors, including renewable energy, transportation, education, health, water, technology and space (UAE Cabinet, 2018). The UAE

government has included innovation and innovative development in the curriculum for students and schoolchildren to enrich the national culture (EduKid, 2016). This means that, in the long term, innovation will be encouraged even more in industry and private enterprises. A recent national innovation strategy aims to position the UAE as one of the top twenty most innovative countries in the world by 2021 (vision2021, 2016). This comprehensive strategy is designed to serve as an engine for the growth and the development of distinctive skills and capabilities across the country. In 2016, the UAE was ranked 41st in terms of its total innovation capabilities (INSEAD, 2015). In the same year, the government of the UAE launched Dubai Future Accelerators to drive innovation in healthcare, transportation, renewable energy, sustainability, education, security, and urban planning. This position today is 37th.

The government invested significantly in sectors such as information and communication technology (ICT) and non-oil industries to create a knowledge-based economy (El-Sokari, Van Horne, Huang & Al Awad, 2013). The UAE government is putting USD 1.2 billion into these initiatives (Schilirò, 2015). The country is moving toward a knowledge-based economy by establishing an environment and culture that fosters innovation and builds innovative capabilities. There are already a number of success stories of innovative projects in the UAE, including projects that have solved problems and reduced government expenditure.

Overall the Arab countries are not well prepared to deal with the challenges of innovation. First of all, there are fewer researchers in the Arab world than elsewhere (Twati & Gammack, 2006). Global innovation indicators show an average of 3.3 researchers with doctorate and master's degrees for every 10,000 people in the workforce of Arab countries (Nah & Tan, 2016). There has also been a continuing legacy of dependency and underdevelopment in the region resulting in distorted development progress, and a focus on consumption instead of production (Hill, Loch, Straub, & El-Sheshai, 1998). Studies have suggested that the Arab countries lag behind mainly because of their attitude towards innovation and technological development (Boeing, 2013). In the past, entrepreneurs and private owners in Arab countries have focused mainly on non-innovative or zero-risk investments (Blanchard & Allard, 2011). Arab organizations do not face much competition to encourage innovation (Rudowicz, 2016). Local inestors did not invest in industrial sectors that involved a significant amount of risk, innovation and application of technical knowledge (Nakata, 2009). Investment tendencies have, however, transformed significantly more recently.

**Research methodology**

The authors take a qualitative approach to data collection and analysis, studying non-numerical or unquantifiable elements such as words, feelings, emotions, or sound. These methods are used to identify trends in thought and opinions, and to examine problems more deeply. They are used in situations that involve unquantifiable data such as the meaning of certain behaviors (Cooper, Schindler, & Sun, 2006), (Creswell and Clark, 2007). The outcomes of qualitative research are often not conclusive and may not automatically be used to make generalizations, because they may have been developed subjectively. These methods are, however, essential to provide a broad base of insight (Creswell & Clark, 2007). Special efforts will be made to make conclusions based on broad data collection and pattern building among the research group and making use of grounded theory approach (Strauss & Corbin, 1990).

This paper builds on conceptual literature review. The articles have been selected in google scholar with search words of innovation policy in the UAE and entrepreneurial ecosystem. Interesting findings have been followed further and enriched with deeper reading into the articles that were cited in the primary data sources. In the future research, the objective is to make thorough content analysis to determine patterns, meaning, and inference of purpose from texts, often alongside examination of statistical relationships between variables (Johnson & Onwuegbuzie, 2004), and bibliometry to reveal patterns in scholarly communication. In the future work, the data will be enriched using the case study protocol, as described in Yin (2014). Case study method is used to describe the characteristic of a particular organization or phenomenon under study. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used (Yin, 2014). The analysis begins by developing theory-based framework for the critical capabilities for innovation. This exercise will allow us to develop categories of innovation characteristics which will

further strengthen the analytical structure of the analysis and produce compelling analytical conclusions to rule out alternative interpretations (Yin, 2014).

In academic literature Value network analysis (Halinen & Törnroos, 2005) is a popular method for ecosystem mapping. The ARA model traces the different actors in the network, their roles, and finally activities within the network. This division will be used to map the actors in the UAE context based on the future case studies. However, the investigators acknowledge that the framework has been criticized for the lack of attention to external linkages. Therefore, the analysis is complemented with other methods.

Institutional theory (Scott, 2004) is used as a framework for presenting the results in clear and structured way. This theory divides barriers and inertia in implementing changes and innovations into cultural, cognitive and legal barriers. The entries falling into the category of legal factors include issues that relate to laws, the legal system, and the practical interpretation of laws. Cultures provide people with ways of thinking--ways of seeing, hearing, and interpreting the world. Thus, the same words can mean different things to people from different cultures. Understanding and appreciating these "cognitive constraints" constitutes a critical success factor innovation. On normative side the main barriers included the scarce use of public demand as a tool to support innovation, and the existence of alternative-to-classic-procurement. This includes cognitive barriers of lack of competences and knowledge.

**Findings/results**

The literature review revealed several means to support innovation ecosystems in the UAE context. These include the need to focus on reducing potential risk by removing ambiguity and better assessment of opportunities, as well as starting to promote entrepreneurship within or through large organizations. Enabling legal and regulatory environment with sufficient policy and program coordination and conducive laws and regulations, and stimulation of Entrepreneurship Culture and strengthening business support services (Fontana et al, 2012).

In academic literature entrepreneurship ecosystems are treated as value creation systems, they are not networks nor industry working groups (Lamberton & Rose, 2012). Ecosystems are systemic interlinked networks of components that facilitates and generate innovations and focuses on developing the underlying factors determining innovation capacity in ecosystems. Their survival and growth capacity cannot be reduced to the characteristics of single participants (Franke & Shah, 2003). There is a small but quickly growing body of research on platform-driven ecosystems (see e.g. Deschryvere 2014). The results so far and the tentative pre-published results show that:

1) open, approach to ecosystem creation can predict regional economic growth two years in advance,

2) different ecosystem tools need to be taken for different maturity levels of the ecoystem (coordinating at an early stage, complementing at a mature stage), and

3) ecosystems where 'dominant design' or 'big 5' overtake real competition tend not to produce socio-economic prosperity (micro- or macro-market domination replace the favourite choice of the users) (Chen et al, 2011). Policy propositions include e.g. for public funders to only support ventures that strive to change the old ecosystem.

There are several means to measure entrepreneurial ecosystems. Global Startup Ecosystem Ranking 2015 publishes an index ranking ecosystems along five major components: Performance, Funding, Talent, Market Reach, and Startup Experience. Global startup ecosystem index identifies actionable areas based on 9 key factors: Performance, Funding, Talent, Resource Attraction, Market Reach, Startup Experience, Global Connectedness, Corporate Involvement, and Founder Issues.

Global Innovation Index provides a comprehensive assessment of national innovativeness focusing on knowledge inputs and outputs. OECD publishes annually global innovation index, and world bank tracks entrepreneurial activity with its' indexes. All indexes conclude that entrepreneurial activity is directly related to national competitiveness and growth.

On practical side, Global Start up ecosystem consortium has collected practical activities that have been listed among best practices in the most successful entrepreneurial ecosystems as i) build innovation centers (as opposed to research facilities which typically lack commercial focus), ii) increase cross-border collaboration, iii) reform education policies to keep pace with the knowledge and skills required for young people to participate in the emerging 'third-wave industrial revolution', iv) promote the successes of domestic entrepreneurs to foster an entrepreneurial culture, v) recognise which start-ups are more likely

to succeed and channel the resources to them instead of trying to support as many start-ups as possible, vi) combine financing with commercial mentorship, and vii) support the government in creating a modern workforce for the future.

**Entrepreneurial ecosystem in the UAE**

The authors reflected the global best practices to the UAE context in an effort to derive context specific factors and opportunities for improving the systems based on this global benchmarking. Entrepreneurship is still a new and emerging profession in the UAE. According to Global entrepreneurship barometer (2016), the Total Entrepreneurial Activity score for the UAE was at 4% among the lowest in the world. The implementation barriers for the new policies are well known, and described here using institutional theory-based framework (Scott, 2004, Kraft et all, 2007):

| |
|---|
| Cultural Barriers: |
| UAE nationals still have high dependence on Public Sector for Employment with more than 90% of the employed nationals work in the public sector. |
| Youth (15-35 yrs) represents 42% of the UAE's national population. With less public sector jobs youth unemployment rate in the UAE has risen to 18% |
| Women have bias to family commitments and limited work hours |
| The UAE culture has high power distance, collectivistic traits and masculine attributes |
| Fear of failure is strong |
| Cognitive Barriers: |
| Curriculum based entrepreneurship education is limited |
| There are few local role models |
| Business support services are underdeveloped |
| Local peer networks and associations are limited |
| Legal Barriers: |
| Anti-bankrupt laws are severe |
| Challenges obtaining visa |
| Cost of registering a legal entity |
| Requirements for local partners |

Table 1. Barriers for innovation in the UAE

Addressing these challenges requires a holistic approach to developing the UAE entrepreneurial ecosystem as a whole. The term 'entrepreneurial ecosystem' describes the role of independent factors working together to enable entrepreneurs and allow innovation to occur in a sustained way in a particular location (Hwang & Horowitt, 2012). However, analyzing how they develop differently in different places can enable policymakers and business leaders to provide a more supportive environment (Spiegel, 2017). Such ecosystems consist of tangible elements like regulatory environment, local institutions, universities, standardization bodies, large anchor companies, small and medium size companies and business support organizations, as well as intangible elements like cultural self-confidence, competences, attitudes, norms and values.

**Discussions and conclusions**

The objective of this paper was to increase understanding of the dynamics between the institutional, cultural, social, political and economic actors, structures and relationships that constitute the local entrepreneurial ecosystem in the UAE and propose means to enhance the effectiveness and innovativeness of these systems.

Studies have shown that innovation is directly related to and influenced by national culture, which can either encourage or hinder innovation. Culture has a significant influence on the capacity of a society to innovate. Research suggests that Arabs have a low tendency to take risks and a fear of change. Development in many Arab countries is therefore very slow compared to other nations.

In addition to the entrepreneurs' life stages, the analysis needs to also take into consideration the lifecycle of the local ecosystem. Life cycle model helps to measure the performance and stage of ecosystems to provide local stakeholders with strategic guidance on focus areas at every growth stage. This knowledge empowers regions everywhere to take timely, informed actions that guide the most impactful use of limited local resources, and to propel through the lifecycle's four phases: Activation, Globalization, Expansion, and Integration.

The stage of entrepreneurial ecosystems can be measured using various maturity models. In business ecosystem maturity model, the stage is defined by six characteristics. The following table applies these dimensions to the UAE entrepreneurial ecosystem.

| Strategic Dimension | The UAE Ecosystem Situation |
|---|---|
| Strategy & stakeholder engagement: ecosystem awareness, partnership and adaptation strategy, stakeholder participation, public engagement | The awareness and engagement of the various ecosystem actors is in a high level. National policies are clear and vigorously implemented top down. Less bottom up and civic initiatives. |
| Community support: developer programs, education, accessibility, community engagement | There are several support mechanisms and funding for startups is available. However, this is typically reserved only for local Emirati innovators, which leaves foreign nationals without support. |
| Ecosystem openness: value chain positioning, cross sector awareness and support, open sources strategy, openness of business models | Ecosystems are typically vertical with little cross-sector analysis and open innovation. This is changing through consortium research initiatives by the government. |
| Technology advancement: technical richness, simplified complexity, technical readiness | Technological readiness is good by legacy systems that have been sourced internationally. Local production is still to pick up in this respect. |
| Marketplace mechanism: monetization mechanism, business models, privacy, security and trust, legislation | Local business environment is vibrant with high level of competition, clear business laws and political stability. Very attractive market due to the location and access to the other GCC countries. Local market small. |
| Technology inclusivity: Supported standards, devices, interoperability, validation, verification, testing, certification | Technology inclusivity is still developing. There are several initiatives for the use of latest AI models and data-based optimization technologies. In addition, investment in research are immense. |

Table 2. The UAE entrepreneurial ecosystem maturity analysis

It is particularly important to create an environment supporting innovation in small- and medium-sized enterprises, because of their business prominence and substantial economic benefits in Arab countries. National governments need to consider whether changes are necessary in education, technologies, ICT-related financial incentives, and social awareness. Below listed selected practical recommendations for the UAE context, derived from the international benchmark ecosystems including Silicon Valley and London.

Innovative financing approaches to technology infrastructure should be developed from sources including government budgets, revenues from telecommunications monopolies, investors, and international financial institution projects. These can include competitive subsidies, aggregate demand, and private funding guarantees. Administrative barriers should be removed to encourage funding. The Arab countries support a legacy of extensive bureaucracies and administrative operations and administrative reforms ae called for. Public–private partnerships should benefit from local and national cultural, social, and traditional values, as these can affect funding priorities and approaches. Governments should innovate by engaging in productive practices that could help national development.

National authorities should enable competition to encourage private sector innovation. It is also important to share regulatory and legislative data emerging from technological innovation. The recently developed Arab Regulators Network is considered to be a promising new regional project that is addressing data exchange across the entire Arab region. Support for the development and innovation in Arab countries is needed. There is currently a shortage of accurate data for research. Governments should enable business opportunities such as offshore call centers. National authorities aim to support a number of characteristics that stimulate innovation, including organizations with both public and private membership, financial incentives, innovation levels, and liberalization-based flexibility.

Limitations and direction for future research

The research will help to increase investment opportunities in Arab countries. It will also help to sensitize governments and organizations in the Arab world to improve innovation by influencing cultural change. The research can be used by policymakers to guide the innovative practices that are needed to create and sustain Middle Eastern economies. Economists and managers of organizations in the Arab world as a guide to help them create modern organizations that emphasize the active role of employees in

the innovation process can also use it. Companies around the world that seek to invest in Arab countries will benefit from this research by obtaining information about the cultural barriers that can hinder innovation.

The major theoretical implication is increased understanding of the UAE innovation context, and the characteristics and maturity of the local entrepreneurial ecosystems. This research study contributes to current knowledge by suggesting areas of further study in the UAE context. It also presents a study of a less published case context for the literature base on entrepreneurial ecosystems.

The limitation of the study is the lack of empirical evidence. This is the planned next phase of the research. The authors will investigate local ecosystem actors and representative cases in order to collect evidence to support the literature-based analysis of the local ecosystem maturity and development pathways.

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# Government strategy and policy in social conflict resolution in Luwu and North Luwu Regencies, South Sulawesi Province, Indonesia

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**Keywords**
Social Conflict, Stages of completion, Strategy and Policy

**Abstract**

*Research on Government Strategy in Social Conflict Resolution in Luwu and North Luwu Districts of South Sulawesi Province is a study that is intended to find out why the strategies and policies for resolving social conflicts that have occurred have not been able to be resolved completely by the local government. In terms of the government's duty to guarantee the creation of security in the community. Therefore, it is important to do research to reveal what is the cause. To find answers to these problems, further research problems are formulated, namely, what causes social conflict to occur, how the efforts and stages of conflict resolution are carried out by the government, what are the inhibiting factors so that conflicts are often repeated, and what strategies and policies are used in resolving conflict.*

*The research approach used to answer these problems is a qualitative approach using the method of collecting in-depth interview data as primary data originating from various key informant sources. While secondary data uses data sourced from various types of documents for supporting primary data.*

*The results of the study show that the causes of social conflict in Luwu Regency and North Luwu in South Sulawesi Province were due to fights between young people from different villages. The fight then turned into an offense between ethnic / tribal migrants with ethnic / ethnic groups who were not immigrants. In a situation of conflict that is not resolved properly, it is then used by actors who have other agendas for their personal and group interests, so that the causal factors then shift to certain business and political interests. The stages of resolving social conflicts carried out by the government are initiated by enforcing the law, then preventing the escalation of conflict escalation, mediating parties in conflict, mutual understanding, forming joint forums, and making programs that are expected to divert attention from the desire to conflict. Constraints are faced so that conflicts often occur because solidarity between each party in conflict is very strong, involvement of community leaders is still lacking in conflict resolution, there are still provocateurs, political interests that exploit social conflicts, and conflict resolution is seen by the conflicting parties as yet unfair*

*The strategies and policies used in resolving social conflicts are by referring to the government's mission objectives which are translated into the regional organizational strategic plan (OPD) which is creating a sense of security to the community. The strategic plan is followed up with various programs and activities of each Regional Device Organization. The policy used by the regional government in overcoming the social conflict that occurs is to confuse the Law Number 7 of 2012 concerning Social Conflict Handlers and the implementing regulations of the Law through Government Number 25 of 2015. As the Regional Government then follow up with the Regent's Decree North Luwu Number 188.4.45/180/ II /2017; Number 188.4.45/1/2018; Number 188.4.45/133/ II / 018; and Number 188.4.45/104/I / 2018 with the aim of streamlining the resolution of conflicts that have occurred as well as in efforts to prevent further social conflicts.*

# Asymmetric impact of government spending behaviour on growth of national income and unemployment in Africa

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**Keywords**
Economic growth, Fiscal Expansion, Government Spending and Unemployment

**Abstract**

*This study examines the impact of government spending behaviour on growth of national income and unemployment in Africa. The study used a sample of 40 countries covering from 1970 to 2017. Dynamic panel models were employed and the result of Hausman test showed that Pooled Mean Group (PMG) estimator is preferred for the National Income Model and Unemployment model. The study found that increasing government spending has strong positive influence on growth of national income and negative influence on unemployment among African countries while reduction in government spending has significant negative influence on growth of national income and significant positive influence on unemployment of the countries. However, the positive changes in government spending of African countries has stronger influence on growth of income and employment than reductions in the government spending. This implies that government intervention in Africa is crucial for making available huge investments that could spur growth in income and creation of employment. The study recommends increasing government spending that could accelerate economic growth and create employment opportunities. This is because, private investors are seen incapable of making massive investments that could bring out higher growth of national income and employment. The study also recommends powerful fiscal instrument such as progressive tax system that could bring about an equitable distribution of income and wealth.*

## 1.0 Introduction

Government spending is an expansionary fiscal policy instrument or tool used by governments in achieving desired macro-economic objectives or goals. Keynes (1936) created macroeconomic framework that focuses on stabilisation policy and suggested that spending is a public good that benefits everyone especially in times of recession, and that aggregate level of government spending helps to control aggregate demand (Sammut, 2014). However, there has been a debate concerning government involvement or government spending behavior in economic system and its outcome on an economy since the Keynesian and Neo-Classical periods (Prasetyo & Zuhdi 2013). Prior to the Keynesian thought, the classical economists believed that an economy can always be at full employment state, but the classical thought lost its stands during the great depression of the 1930s (Attamah, Anthony & Ukpere, 2015). Thus, despite the debate, the assertion that government expenditure contributes positively to economic growth has become an accepted premise in most economies (Prasetyo & Zuhdi, 2013).

Recently, unemployment is viewed as one of the most intractable problems facing developing countries. It has become a cankerworm that is eaten deep into the fabric of developing economies. It is referred to the condition and extent of joblessness within an economy, and is measured in terms of the unemployment rate, which is the number of unemployed persons who are willing and able to work divided by the total labor force (Egbulonu & Amadi, 2016). Over the years, unemployment has increased in the region. According to International Labour Organisation (2019), unemployment in Africa increased from 6.4% in 2008 to 6.7% in 2010 and 6.9% in 2017 respectively. It has been seen as a social and economic malady. It affects the standard of living of people in the economy. To Egbulonu and Amadi (2016), insecurity, insurgency and terrorism as well as militancy, kidnapping, sea piracy and pipeline vandalism is as a result of the high rate of unemployment in the region. According to Englama (2001), the issue of persistent unemployment is now frightening considering the fact that it is widening poverty, misery, and social unrest, ethnic cum religious crisis, robbery, kidnappings, terrorism and other social vices. Conversely, national income from some of these African countries have been on the rise without improvement in the level of unemployment in the region.

Hence, in an attempt to reduce unemployment, increase income and encourage employment generation, fiscal policy tool such as government spending has been used by most developing countries such as African countries. It is against this background that this study examines the asymmetric impact of government spending behaviour on growth of national income and unemployment in Africa. This is to account for the exact impact of positive and negative changes in government spending of African countries on national income and unemployment. The objective of this study therefore is to provide a framework that will fill the existing empirical gap and to assess the exact impact of negative and positive changes in government spending on national income and unemployment in Africa.

The rest of this paper is organised as follows; section 2 discusses literature review. Methodology is presented in section 3 while section 4 presents, discusses and interprets the empirical results. Section 5 offers conclusion and policy recommendations.

## 2.0 Literature Review

This section focuses on both theoretical and empirical literature. The study adopts the Keynesian theory which explains the relationship between the variables of interest. Keynes theory asserts that increases in government spending leads to high aggregate demand and rapid growth in national income (Keynes, 1936). He favored government intervention to correct market failures, criticize the classical economists and argues that we are all dead in the long run (Keynes, 1936). Keynes rejected the idea that the economy would return to a natural state of equilibrium. Instead, he envisaged economies as being constantly in flux, both contracting and expanding. In response to this, Keynes advocated a countercyclical fiscal policy in which, during the boom periods, the government ought to cut spending, and during periods of economic woe, the government should undertake deficit spending. Keynes categorized government spending as an exogenous variable that can generate economic growth instead of an endogenous phenomenon. He believed the role of the government to be crucial as it can avoid depression by increasing aggregate demand and thus, switching on the economy again by the multiplier effect. It is a tool that bring stability in the short run, but this need to be done cautiously as too much of public expenditure lead to inflationary situations while too little of it leads to unemployment (Keynes, 1936). According to Keynes' theory of the fiscal stimulus, an injection of government spending eventually leads to added business activity and even more spending. The theory proposes that government spending boosts aggregate output and generates more income. Wagnerian theory however focused on the view that increase in national income causes more government spending (Bataineh, 2012; Ahmad & Loganathan, 2015). According to Wagnerian approach, the share of government spending increases with growth in national income (Kumar, Webber & Fargher, 2012).

Several studies have examined the relationship between government expenditure and economic growth. For instance, Kimaro, Keong and Sea (2017); Dudzevičiūtė, Šimelytė and Liučvaitienė (2017); Bojanic (2013); Kapunda and Topera (2013); Taiwo and Abayomi (2011) and Wang (2011); and Beraldo, Montolio and Turati (2009) conclude that increasing government expenditure spurs economic growth. But other studies like Carter, Craigwell, and Lowe (2013); Chang, Huang and Wei (2011); and Nurudeen and Usman (2010) demonstrated that increasing government expenditure reduces economic growth. A similar study was carried out by Kimaro, Keong and Sea (2017) using panel analysis of Sub-Saharan African low-income earner in analyzing the impact of government expenditure and efficiency on economic growth. The study showed that increasing government expenditure accelerates economic growth of low-income countries in Sub Saharan Africa. Holden and Sparrman (2016) also attempted the effect of government purchases on unemployment in 20 OECD countries covering 1980 to 2007. The study found that increase in government purchases reduce unemployment.

## 3.0 Research methodology

### 3.1 Model Specification

Using the Keynesian aggregate demand which can be written as:

$$Y = C + I + G + (X - M) \quad (1)$$

Where Y is the Aggregate income, C is the Consumption expenditure, I is the Investment expenditure, G is the government expenditure, X is the exports and I is the Imports. Assuming that aggregate demand can be represented by GDP at purchaser's prices, consumption expenditure by household final consumption expenditure, Investment expenditure by gross capital formation, government expenditure

by general government final consumption expenditure and exports minus (-) imports for net trade in goods and services. But given that African countries are opened economies, the study incorporated foreign direct investment inflows and exchange rate as explanatory variables for the national income model. The model can be rewritten in a functional form and assuming the asymmetric effect of government spending on growth of national income as:

$$GDP_{it} = f(GSP\_POS_{it}, GSP\_NEG_{it}, HCE_{it}, GFCF_{it}, TBAL_{it}, FDI_{it}, EXR_{it}) \quad (2)$$

Where GDP= Gross Domestic Product at current purchase prices, GSP= Government spending, HCE= Household consumption expenditure, GFCF=Gross Fixed Capital Formation, TBAL=Trade balance, FDI= Foreign Direct Investment and EXR =Exchange rate.

The functional model of the asymmetric effect of government spending on unemployment can be written as:

$$UEM_{it} = f(GSP\_POS_{it}, GSP\_NEG_{it}, HCE_{it}, GFCF_{it}, TBAL_{it}, FDI_{it}, EXR_{it}) \quad (3)$$

Where UEM= unemployment rate.

Transforming the equation (2) and equation (3), the model can be rewritten stochastically as:

$$GDP_{it} = \beta_0 + \beta_1 GSP\_POS_{it} + \beta_2 GSP\_NEG_{it} + \beta_3 HCE_{it} + \beta_4 GFCF_{it} + \beta_5 TBAL_{it} + \beta_6 FDI_{it} + \beta_7 EXR_{it} + \eta_i + \nu_{it} \quad (4)$$

$$\ln UEM_{it} = \beta_0 + \beta_1 GSP\_POS_{it} + \beta_2 GSP\_NEG_{it} + \beta_3 HCE_{it} + \beta_4 GFCF_{it} + \beta_5 TBAL_{it} + \beta_6 FDI_{it} + \beta_7 EXR_{it} + \eta_i + \nu_{it} \quad (5)$$

Where

$\ln$ =Natural Logarithm.

Following dynamic linear panel model in an autoregressive form such as:

$$y_{it} = \alpha y_{i,t-1} + \beta' x_{it} + U_{it} \quad (6)$$

$$U_{it} = \eta_i + \nu_{it} \quad (7)$$

Applying the above typical linear dynamic panel model to equation (4) in assessing the asymmetric impact of government spending behaviour on growth of national income in Africa, the model is re-stated as:

$$GDP_{it} = \beta_0 + \delta GDP_{i,t-1} + \beta_1 GSP\_POS_{it} + \beta_2 GSP\_NEG_{it} + \beta_3 HCE_{it} + \beta_4 GFCF_{it} + \beta_5 TBAL_{it} + \beta_6 FDI_{it} + \beta_7 EXR_{it} + \eta_i + \nu_{it} \quad (8)$$

While applying the above typical linear dynamic panel model to equation (5) in assessing the asymmetric impact of government spending behaviour on unemployment in Africa, the model is re-stated as:

$$UEM_{it} = \beta_0 + \delta GDP_{i,t-1} + \beta_1 GSP\_POS_{it} + \beta_2 GSP\_NEG_{it} + \beta_3 HCE_{it} + \beta_4 GFCF_{it} + \beta_5 TBAL_{it} + \beta_6 FDI_{it} + \beta_7 EXR_{it} + \eta_i + \nu_{it} \quad (9)$$

Where

| | | |
|---|---|---|
| $\beta_0$ | = | Intercept |
| $\beta_1 - \beta_7$ | = | Parameter Coefficients to be estimated |
| $\eta_i$ | = | Individual Specific Effect or Fixed Effect |
| $\nu_{it}$ | = | An idiosyncratic error |

The error correction version of the equation (7) yields the following:

$$\Delta GDP_{it} = ec_{i,t-1} + \sum_{j=1}^{p} \delta_i \Delta GDP_{i,t-j} + \sum_{j=0}^{q} \beta_{1i} \Delta GSP\_POS_{i,t-j} + \sum_{j=0}^{q} \beta_{2i} \Delta GSP\_NEG_{i,t-j} + \sum_{j=0}^{q} \beta_{3i} \Delta HCE_{i,t-j} + \sum_{j=0}^{q} \beta_{4i} \Delta GFCF_{i,t-j} + \sum_{j=0}^{q} \beta_{5i} \Delta TBAL_{i,t-j} + \sum_{j=0}^{q} \alpha_{6i} \Delta FDI_{i,t-j} + \sum_{j=0}^{q} \alpha_{7i} \Delta EXR_{i,t-j} + \eta_i + \nu_{it} \quad (9)$$

And the error correction version of the equation (8) yields the following:

$$\Delta UEM_{it} = ec_{i,t-1} + \sum_{j=1}^{p} \delta_i \Delta GDP_{i,t-j} + \sum_{j=0}^{q} \beta_{1i} \Delta GSP\_POS_{i,t-j} + \sum_{j=0}^{q} \beta_{2i} \Delta GSP\_NEG_{i,t-j} + \sum_{j=0}^{q} \beta_{3i} \Delta HCE_{i,t-j} + \sum_{j=0}^{q} \beta_{4i} \Delta GFCF_{i,t-j} + \sum_{j=0}^{q} \beta_{5i} \Delta TBAL_{i,t-j} + \sum_{j=0}^{q} \alpha_{6i} \Delta FDI_{i,t-j} + \sum_{j=0}^{q} \alpha_{7i} \Delta EXR_{i,t-j} + \eta_i + \nu_{it} \quad (10)$$

Where the error correction term ($ec_{i,t-1}$) for growth of national income model is stated as:

$$ec_{i,t-1} = \theta_i[GDP_{i,t-j} - \alpha_{1i}GSP\_POS_{it} - \alpha_{2i}GSP\_NEG_{it} - \alpha_{3i}HCE_{it} - \alpha_{4i}GFCF_{it} - \alpha_{5i}TBAL_{it} - \alpha_{6i}FDI_{it} - \alpha_{7i}EXR_{it}] \quad (11)$$

While the error correction term ($ec_{i,t-1}$) for unemployment model is stated as:

$$ec_{i,t-1} = \theta_i[UEM_{i,t-j} - \alpha_{1i}GSP\_POS_{it} - \alpha_{2i}GSP\_NEG_{it} - \alpha_{3i}HCE_{it} - \alpha_{4i}GFCF_{it} - \alpha_{5i}TBAL_{it} - \alpha_{6i}FDI_{it} - \alpha_{7i}EXR_{it}] \quad (12)$$

$\theta_i = -(1-\delta_i)$, group specific speed of adjustment coefficient (expected that $\theta_i \prec 0$)

$ec_{i,t-1}$ measures how long it takes the system to converge to its long-run equilibrium due to any distortion that may arise. The apriori expectations of the variables is positive for all the variables except for exchange rate in instance where developing economies trade deficit.

### 3.2 Data Needs and Data Sources

GDP at current purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. The GDP data are in current US dollars (billions) and the data were sourced from World Bank. General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees) and most expenditures on national defense and security but excludes government military expenditures that are part of government capital formation. The data for government expenditure is in current U.S. dollars (billions) and are sourced from World Bank.

Household final consumption expenditure (formerly private consumption) is the market value of all goods and services, including durable products (such as cars, washing machines, and home computers), purchased by households. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings, payments and fees to governments to obtain permits and licenses. Data for household final consumption expenditure are in current US dollars (billions) and are sourced from World Bank.

Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Data for gross capital formation are in current US dollars (billions) and sourced from World Bank.

Trade balance also known as net trade in goods and services is derived by offsetting imports of goods and services against exports of goods and services. The exports and imports of goods and services comprise all transactions involving a change of ownership of goods and services between residents of one country and the rest of the world. Data for trade balance are in current US dollars (billions) and are sourced from World Bank

Unemployment refers to the share of the labor force that is without work but available for and seeking employment. This is measured in percentage and the data were sourced from World Bank.

Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. Exchange rate is measured as local currency units per dollar and the data were sourced from International Monetary Fund.

Foreign direct investment refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. The data are in current US dollars (billions) and the data were sourced from World Bank.

### 3.3 Estimation Procedure

This study used Dynamic Panel Data Models which have the following techniques or estimators; Generalized Method of Moments (GMM) (either First Difference GMM or System GMM, that is; the Arellano-Bond estimator and the Arellano-Bover/Blundell-Bond estimator), Mean Group (MG), Pooled Mean Group (PMG) and Dynamic Fixed Effects (DFE). But since the number of time series for the study is relatively larger than cross sections (T >N), non-stationary heterogeneous panel models are preferred where Pooled Mean Group (PMG) estimator and Mean Group (MG) estimator are considered. Hence, PMG estimator constrains the long-run coefficients to be the same across countries and allows only the

short-run coefficients to vary while the MG estimator estimates separate regressions for each country and computes averages of the country-specific coefficients, which provides consistent estimates of the long-run coefficients (that is, it allows for all coefficients to vary and be heterogeneous in the long-run and short-run). The Hausman test was therefore used to decide whether PMG or MG estimator is appropriate for the study.

The study estimated descriptive statistics to explain the characteristics of each variable in the model; correlation analysis to show whether regressors have perfect or linearly exact representations of one another in order to avoid multicollinearity; panel unit root tests to ascertain whether any variable is integrated of order 2 or not. The desired level of integration of the variables is being stationary at level, I (0) or integrated of order one, I (1). The study used Im, Peseran and Shin (IPS) panel unit root test. The study assumed long-run homogeneity and tested the null hypothesis of homogeneity through a Hausman-type test to compare between the Mean Group and the Pooled Mean Group (PMG) estimators. The decision rule is: reject the null hypothesis if the probability value is less than 0.05. The null hypothesis is that MG and PMG estimates are not significantly different or PMG more efficient. Therefore, the outcome of the Hausman (1978) test determines which estimator is most preferred.

## 4.0 Findings/Results

### 4.1 Descriptive Statistics

The results of descriptive statistics that shows the characteristics of each variable in the model are presented in Table 1.

Table 1: Descriptive Statistics

| Variable | Observations | Means | Standard Deviation |
|---|---|---|---|
| GDP | 1,918 | 19.599 | 51.414 |
| GSP | 1,918 | 2.748 | 7.422 |
| HCE | 1,918 | 12.921 | 34.06 |
| GFCF | 1,918 | 5.769 | 16.168 |
| TBAL | 1,918 | -0.311 | 3.946 |
| FDI | 1,918 | 0.356 | 1.03 |
| EXR | 1,918 | 428.49 | 1864.775 |
| UEM | 1,918 | 9.0311 | 0.0267 |

Source: Authors' Computation from STATA Output.

The result in Table 1 indicates that gross domestic product averaged 19.599 billion US dollars among the African countries within the study period. Government spending and household consumption expenditure averaged 2.748 billion US dollars and 12.921 billion US dollars with the standard deviations of 7.422 and 34.06 respectively. Trade balance averaged negative value of -0.311 billion US dollars within the study period. This indicates that African countries trade deficit implying that imports are more than exports. Gross Fixed Capital Formation and Foreign Direct Investment in Africa averaged 5.769 billion US dollars and 0.356 billion US dollars with standard deviations of 16.168 and 1.03 respectively. The high average value of exchange rate of 428.8.49 indicates the less value of African countries currencies to US dollar. Unemployment also averaged 9.03% in Africa during the study period. The high standard deviations imply that there is widespread in the distribution of data across panels.

### 4.2 Correlation Results

The result of correlation analysis is presented in Table 2.

Table 2: Correlation Test Results

| | GDP | GSP | HCE | GFCF | TBAL | FDI | EXR | UEM |
|---|---|---|---|---|---|---|---|---|
| GDP | 1 | | | | | | | |
| GSP | 0.8952 | 1 | | | | | | |
| HCE | 0.7711 | 0.838 | 1 | | | | | |
| GFCF | 0.6714 | 0.6122 | 0.5925 | 1 | | | | |
| TBAL | -0.0152 | -0.0492 | -0.1171 | 0.0059 | 1 | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FDI | 0.7354 | 0.6357 | 0.7284 | 0.4739 | -0.0738 | 1 | | |
| EXR | -0.0503 | -0.0592 | -0.0392 | -0.0387 | -0.0134 | -0.0188 | 1 | |
| UEM | 0.1852 | 0.2804 | 0.1441 | 0.1550 | 0.1373 | 0.0579 | -0.1273 | 1 |

Source: Authors' Computation from STATA 15 Output.

From the results of correlation test in Table 2, it implies that all the regressors are not linearly dependent on one another or exact. Hence, there is absence of multicollinearity in the model.

**4.3 Panel Unit Root Tests Results**

The results of panel unit root tests are presented in Table 3.

Table 3: Stationarity Test Results for the Panel Data

| Variables | Im, Peseran and Shin (IPS) | | | Decision |
|---|---|---|---|---|
| | W-t-bar Statistic | Probability Value | Order | Remark |
| GDP | 14.8421 | 1.0000 | | Not Stationary |
| D.GDP | -18.4661 | 0.0000* | 1(1) | Stationary |
| GSP | 10.4260 | 1.0000 | | Stationary |
| D.GSP | -15.0917 | 0.0000* | 1(1) | Stationary |
| HCE | 12.6151 | 1.0000 | | Not Stationary |
| D.HCE | -16.2035 | 0.0000* | 1(1) | Stationary |
| GFCF | 8.2481 | 1.0000 | | Not Stationary |
| D.GFCF | -17.8993 | 0.0000* | 1(1) | Stationary |
| TBAL | 1.6054 | 0.9458 | | Stationary |
| D.TBAL | -19.0151 | 0.0000* | 1(1) | Stationary |
| FDI | 0.7819 | 0.7829 | | Not Stationary |
| D.FDI | -25.7833 | 0.0000* | 1(1) | Stationary |
| EXR | 12.0470 | 1.0000 | | Not Stationary |
| D.EXR | -15.8265 | 0.0000* | 1(1) | Stationary |
| UEM | 0.3235 | 0.6268 | | Not Stationary |
| D.UEM | -14.2024 | 0.0000* | 1(1) | Stationary |

Source: Authors' Computation from STATA 15 Output. Note: The asterisk (*) denotes rejection of the null hypothesis that series has unit root at 5% level of significance.

Result in Table 3 shows the panel unit root tests results. The results indicate that all the panels contain unit roots at levels. However, the variables became integrated of order one after first difference. Thus, the variables were not integrated of order higher than one thereby satisfying the conditions for application of panel ARDL or non-stationary heterogeneous panel models.

**4.4 Impact of Government Spending Behaviour on Growth of National Income in Africa.**

The study employed Panel ARDL and the results of Hausman test are presented in Table 4. To determine the appropriate estimator, if the probability value of the chi-square of the Hausman test is less than 0.05, we reject the null hypothesis ($H_o$: difference in coefficients not systematic) and conclude that the difference in coefficients is systematic and preferably, use the estimates of MG estimator, otherwise, PMG estimates would be preferred.

Table 4: Hausman Test Results for National Income Model

| | (b) | (B) | (b-B) | sqrt(diag(V_b-V_B)) |
|---|---|---|---|---|
| Variables | mg | pmg | Difference | S. E |
| GSP_POS | -669.1206 | 1.038473 | -700.1591 | 1437.51 |
| GSP_NEG | 1.579347 | -0.9196451 | 2.4989921 | 7.11125 |
| HCE | 22.1855 | 0.9780268 | 21.20747 | 35.7696 |
| GFCF | -1.907433 | 0.9910314 | -2.898465 | 3.83489 |
| TBAL | 0.701843 | 0.9637353 | -0.2618709 | 2.5271 |

| | | | | |
|---|---|---|---|---|
| FDI | 5.066443 | 0.2279045 | 4.838538 | 7.25831 |
| EXR | -3.411357 | 0.0002503 | -3.411607 | 7.18233 |
| | Chi-square (7) = 4.24 | | | |
| | Prob. = 0.7520 | | | |

Source: Author's Computed from STATA 15 Output

The results in Table 4 showed the chi-square value of 4.24 with its probability value of 0.752 that is greater than the 0.05 (at 5% level of observed significance). Therefore, we do not reject the null hypothesis and conclude that PMG estimator is preferred over MG estimator. The results of long-run estimates are presented in Table 5. This means that Pooled Mean Group (PMG) constrains the long-run coefficients to be the same across countries (cross-sections) and allows only the short-run coefficients to vary due to short-run policy changes and structures.

Table 5: Long-run Estimates of National Income Model

| GDP | Coefficient | Std. Err. | z | P>\|z\| |
|---|---|---|---|---|
| GSP_POS | 1.03847 | 0.047393 | 21.91 | 0.000* |
| GSP_NEG | -0.91965 | 0.078515 | --11.71 | 0.000* |
| HCE | 0.97803 | 0.008863 | 110.35 | 0.000* |
| GFCF | 0.99103 | 0.020663 | 47.96 | 0.000* |
| TBAL | 0.96374 | 0.270757 | 35.59 | 0.000* |
| FDI | 0.2279 | 0.053773 | 4.24 | 0.000* |
| EXR | 0.00025 | 0.000068 | 3.68 | 0.000* |

Source: Author's Computed from STATA 15 Output. The asterisk (*) denotes rejection of null hypothesis that the estimate of the variable is highly significance at 5% level of observed significance.

The result of the PMG estimator shows that an increasing government spending have significant positive influence on growth of national income in African countries in long-run by 1.038 at 5% level of observed significance. This implies that increase in government spending leads to 1.038 increases in growth of national income in Africa. On the other hand, a reduction in government spending leads to 0.91965 reduction in the growth of national income in Africa. This explains the asymmetric impact of government spending behavior on growth of income in Africa. This implies that increasing government spending is more beneficial to the growth of developing economies like Africa than fiscal policy of cutting government spending. Other estimates such as household consumption expenditure, gross fixed capital formation, trade balance and foreign direct investment are theoretically plausible and statistically significant at 5% level of significance. The estimated coefficient of exchange rate also has positive influence on growth of national income in Africa. This implies that increase in household consumption expenditure and gross fixed capital formation, trade balance surplus, increased foreign direct investment inflows and exchange rate depreciation have strong positive influence on growth of African countries in the long run. Mixed effects (positive and negative impact) of government spending on national income were revealed in the short-run due to differences in short-terms and medium-term policies among the African countries. However, the study revealed significant speed of adjustment to long-run equilibrium in case of initial distortions.

**4.6 Impact of Government Spending Behaviour on Unemployment in Africa.**

The study employed Panel ARDL and the results of Hausman test are presented in Table 6. To determine the appropriate estimator, if the probability value of the chi-square of the Hausman test is less than 0.05, we reject the null hypothesis ($H_o$: difference in coefficients not systematic) and conclude that the difference in coefficients is systematic and preferably, use the estimates of MG estimator, otherwise, PMG estimates would be preferred.

Table 6: Hausman Test Results for Unemployment Model

| | (b) | (B) | (b-B) | sqrt(diag(V_b-V_B)) |
|---|---|---|---|---|
| Variables | mg | pmg | Difference | S. E |
| GSP_POS | -0.0387 | -0.2854 | 0.24674 | 0.44039 |
| GSP_NEG | 0.65916 | 0.47515 | 0.184008 | 1.06535 |
| HCE | -0.0387 | -0.094 | 0.05532 | 0.25879 |
| GFCF | 1.03881 | -0.4934 | 1.532217 | 0.91052 |

| | | | | |
|---|---|---|---|---|
| TBAL | 0.09368 | -0.1372 | 0.230864 | 0.15751 |
| FDI | 0.19881 | -0.0415 | 0.240297 | 0.24841 |
| EXR | -2.4114 | 0.013 | -2.424357 | 1.18233 |
| Chi-square = 7.33 | | | | |
| Prob. = | 0.2917 | | | |

Source: Author's Computed from STATA 15 Output

The results in Table 6 showed the chi-square value of 7.33 with its probability value of 0.2917 that is greater than the 0.05 (at 5% level of observed significance). Therefore, we do not reject the null hypothesis and conclude that PMG estimator is preferred over MG estimator. The results of long-run estimates are presented in Table 8. This means that Pooled Mean Group (PMG) constrains the long-run coefficients to be the same across countries (cross-sections) and allows only the short-run coefficients to vary due to short-run policy changes and structures.

Table 7: Long-run Estimates of Unemployment Model

| UEMP | Coefficient | Std. Err. | z | P>\|z\| |
|---|---|---|---|---|
| GSP_POS | -0.28543 | 0.077353 | -3.69 | 0.000* |
| GSP_NEG | 0.47515 | 0.124384 | 3.82 | 0.000* |
| HCE | -0.09401 | 0.024311 | -3.87 | 0.000* |
| GFCF | -0.49341 | 0.102515 | -4.81 | 0.000* |
| TBAL | -0.13718 | 0.078343 | -1.75 | 0.080* |
| FDI | -0.04149 | 0.009111 | -4.55 | 0.000* |
| EXR | 0.01300 | 0.003532 | 3.68 | 0.000* |

Source: Author's Computed from STATA 15 Output. The asterisk (*) denotes rejection of null hypothesis that the estimate of the variable is highly significance at 5% level of observed significance.

Similarly, the result of the PMG estimator shows that an increasing government spending have significant negative influence on unemployment in African countries in long-run by 0.285 at 5% level of observed significance. This implies that increase in government spending leads to 0.285 reduction in the level of unemployment in Africa. On the other hand, a reduction in government spending leads to 0.475 increases in the level of unemployment in Africa. This explains the asymmetric impact of government spending behavior on unemployment in Africa. This implies that increasing government spending improves employment situation of developing economies like Africa than reduction in government spending. Other estimates such as household consumption expenditure, gross fixed capital formation, foreign direct investment and exchange rate are theoretically plausible and statistically significant at 5% level of significance. There are also mixed effects (positive and negative impact) of government spending on unemployment in the short-run due to differences in short-terms and medium-term policies among the African countries. The positive influence of exchange rate on unemployment implies that exchange rate depreciation by African countries exposed firms and individuals to excessive cost that retards their production level thereby increasing the level of unemployment among the African countries. The study also revealed high convergence speed towards long-run equilibrium in case of initial distortions.

## 5.0 Discussions and Conclusions

The study found that there is asymmetric effect of government spending on national income and unemployment in Africa. The implication is that increasing government spending spurs economic growth and reduces the level of unemployment in Africa. This conforms to the theoretical argument of Keynes that increases in government spending leads to high aggregate demand and rapid growth in national income and too little of government spending leads to unemployment and reduction in income (Keynes, 1936). However, the improvement in national income and reduction in unemployment due to increased government spending have higher impact relative to the income and unemployment effects of reduction in government spending in Africa.

## 6.0 Recommendations and Policy Implications

The study recommends increasing government spending that could accelerate economic growth and create employment opportunities. This is because, government expenditure boosts aggregate demand which in turn create employment and higher output. More so, private investors are seen incapable of making massive investments that could bring out higher growth of national income and employment.

This, there should be judicious use of government resources towards attaining the set macroeconomic goals of employment, higher income, stability, among others. The study also recommends powerful fiscal instrument such as progressive tax system that could bring about an equitable distribution of income and wealth. These can be done through expansionary fiscal policy.

**7.0 Limitations and direction for future research**

This study is limited to the study of one fiscal tool for actualizing desired macroeconomic objectives of income improvement and unemployment reduction. There are other fiscal policy tools such as taxes and public debt. More so, appropriate policy mix mimic the policy combinations adopted by several countries. Hence, the further study should assess the effectiveness of fiscal policy tools in actualizing macroeconomic goals of income, price stability and unemployment in developing countries and not just Africa for sound generalization.

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# Macroeconomic factors and housing prices in high income and low-income states in Malaysia

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**Key words**
Housing Price, Macroeconomic factors, High-Income, Low-Income, Economic Inequality

**Abstract**

*The development of housing industry in a country is vital as it is viewed as an economic barometer and contribute significantly to the wellbeing of the society. In Malaysia, the Housing Price Index shows an increasing trend (since it was introduced in 1993) and has outstripped the increase in income levels, lead to a serious unaffordability problem, particularly in several states in Malaysia. Previous studies mostly focus on examining the link between macroeconomic factors and housing price in the context of Malaysia in general, but there were limited studies done in the context of the states in Malaysia. This study aims to examine the impact of macroeconomic factors towards the housing price between higher income and lower income states in Malaysia. Panel regression model were employed using secondary data from 14 states in Malaysia between 2005 to 2017. Results shows that unemployment is not a significant factor that influence housing price in both high- and low-income states. Gross Domestic Product appeared to have higher significant impact towards the housing price in high-income states. Meanwhile, population recorded a significant and an inverse relationship with housing price in both high and low-income states in Malaysia, but the impact is bigger on the low-income states.*

## Introduction

The development of housing industry in a country is vital as it is viewed as an economic barometer and contribute significantly to the wellbeing of the society. Economic and sociological scholars documented the importance of residential property on economic development and stability, and residential housing reported as a major component of household expenditure (Trofimov, Md. Aris, & C.D. Xuan, 2018). The housing prices is one of the most researched topics, as it is palpably high related to the people's cost and standard of living. Therefore, housing price ought to be affordable to benefit the people and should be monitored consistently by the policy makers. In Malaysia, houses remained unaffordable to many households due to factors such as unresponsiveness of housing supply to effective demand (Khazanah Research Institute, 2015), and failure in the market to produce a sufficient quantity of affordable housing for the people (Su Ling, Almeida, & Wei, 2017).

Housing price movements in Malaysia reflected by Malaysia Housing Price Index (MHPI). The MHPI was first introduced in 1993, and up until 2017, it shows an increasing trend throughout the period. This has become an alarming concern for the policy makers as it is affecting the consumer's housing affordability which indirectly impacting the society's welfare. Using the Median Multiple(MM) approach, housing affordability also defined as the house price-to-income ratio of 3.0 and below (Su Ling & Almeida, 2016). In 2014, the housing affordability ratio in Malaysia was 4.4, indicates that houses in Malaysia as a whole, were 'seriously unaffordable'. Meanwhile, within Malaysia, houses in Terengganu, Kuala Lumpur, Penang, and Sabah were 'severely unaffordable'. Unaffordability exist when the housing prices persistently increasing, but income level are not. Hence, research on the housing prices or income levels are certainly purposeful.

Median monthly household income in Malaysia (national level) recorded at RM5228. Wilayah Persekutuan Kuala Lumpur recorded the highest median monthly household income at RM9073. Apart from Wilayah Persekutuan Kuala Lumpur, the states of Selangor, Johor, Melaka, and Pulau Pinang recorded higher median monthly household income as compared to the national level. Therefore, the

states which recorded higher median income than the national level are categorized as the higher income states. On the other hand, the states of Terengganu, Negeri Sembilan, Perlis, Sarawak, Sabah, Perak, Pahang, Kedah and Kelantan registered a lower median monthly income between RM3079 to RM 4694 which is below the median income of the national level. Therefore, these states are categorized as the lower income states.

Meanwhile, researches on housing prices from macroeconomic perspective mainly focus on macroeconomic components such as the Gross Domestic Product (GDP), population, inflation, unemployment rate, and money supply. GDP growth found to be a significant factor which influence the housing price, as it will increase the per capita income, enhance consumption ability which leads to an increase in housing price. In addition, GDP were also used for supporting facilities which increase the housing value added, and therefore will push the price up(Guo & Wu, 2013). However, GDP could have much less significant impact of the dynamic of housing price level (Gaspar, 2017), or not significant at all (Grum & Kobe, 2016), as there were other factors which have a stronger links on housing price, and differences in economic characteristics. Population and housing price are positively related (Mariadas, Selvanathan, & Hong, 2016), as increasing in total population leads to an increase in aggregate demand and therefore force the market price to rise. On the contrary, population factors could be insignificant when there are other factors which have a stronger effects on housing prices (Guo & Wu, 2013).

In addition, unemployment could influence housing price in a negative relationship. Higher is the unemployment, lower is the price per square meter of residential property (Grum & Kobe, 2016). Even though most of previous study found that unemployment and housing price are significantly and inversely related, the impact of unemployment towards the housing price is different depending on the area of observation. A high rate of unemployment in a country does not ensure a significant impact on housing price, and vice versa (Grum & Kobe, 2016).

Previous studies reported contradict findings on the impact of macroeconomic factors towards housing prices. In the case of Malaysia, most studies focus on examining the impact of macroeconomic factors towards the housing price in the context of Malaysia in general, but there were limited studies done in the context of the states in Malaysia. Therefore, this study aims to examine the impact of macroeconomic factors towards the housing price in higher income and lower income states in Malaysia. In the next section, literature review on housing price and macroeconomic factors and economic inequality will be discussed. Third section will elaborate on the data and methodology, followed by the discussion and findings, and final section will conclude.

**Literature Review**

Unemployment rate is the number of unemployed people as a percentage of the labour force, where the latter consists of the unemployed plus those in paid or self-employment. When unemployment rate is high, demand for houses will decrease as a result of decreasing in consumer's affordability to buy house, hence force the market price to fall. This indicate the negative relationship between unemployment rate and the housing price. A study by (Grum & Kobe, 2016) on the prices of real estates in various cultural environment found that unemployment significantly influence the price of real estates in Greece, Poland, France and Norway, but not a significant factor in Slovenia. The study further conclude that high rate of unemployment doesn't ensure the significant of influence on real estate's prices. In the case of Malaysia, a study by(A. Aziz, 2013) found that unemployment had a significant impact on Malaysian Housing Price Index.

Gross Domestic Product (GDP) measures the total amount of income earned within a country regardless of a citizenship. GDP value reflects the countries national income. Higher GDP indicates higher per capita income which reflects individual's ability to purchase properties, thus increase the demand for housing and lead to a higher market price. In Malaysia, more percentage of its residents earning higher income, leads to higher demand for higher prices properties (A. Aziz, 2013). Therefore, there would be a direct relationship between the GDP and the housing price (Osmadi, Kamal, Hassan, & Fattah, 2015). Impact of GDP towards house price is supported by (Kok, Ismail, & Lee, 2018) in their study on the changes of Malaysia's house price index using impulse response analysis which conclude that the effect of real GDP on house prices persist comparably longer and stronger. However, each country is different economically and therefore leads to different findings on the link between the GDP and real estate prices. When some studies support the theory in which the GDP affects the price of housing commodity through

various aspects and factors (Guo & Wu, 2013), others found that real estate prices have not been linked to the GDP (Gaspar, 2017; Grum & Kobe, 2016; Pillaiyan, 2015) .

Population is the main key factor which affecting the house price (Kamal, Hassan, & Osmadi, 2016), as people will move to the area houses are built or the area which more convenience or have more people living in such as urban area (Mariadas et al., 2016). As such, urban population growth could have a bigger impact on housing price as demand is on pricier residential properties (A. Aziz, 2013). As population increase, it indicates the number of family members increases, hence need more houses to live, and lead to a higher market price for houses (Ong, 2013). The significant impact and positive relationship between the population and housing prices was supported by the study by(Osmadi et al., 2015; Trofimov et al., 2018). However, population ageing could have a negative effect on housing market. When most people are elderly, they usually own more than one house assets, so the intention to buy more assets is low, which will reduce the housing demand (Wang, Wang, & Zhang, 2015). Furthermore, total population in Malaysia has include immigrants whom staying in the country for a short period of time. Hence, they would rather rent a house instead of buying (Mulder, 2006).

Inequality is the state of not being equal, in which it concerns variations in living standards across a whole population(McKay, 2002). Inequality has many dimensions such as income and wealth, age, education, employment status, and marital status (Díaz-Giménez, Quadrini, & Ríos-Rull, 1997). Economic inequality is a state of inequality in the distribution of income and assets in a population. This study will focus on economic inequality which relates to the differences in income and wealth in different states in Malaysia. Economic inequality in Malaysia can be identified using the median monthly income data by states from the Department of Statistics, Malaysia. The median monthly income data is able identify the higher income and lower income states by comparing the median monthly income by states with the average median monthly income in Malaysia.

Differences in income and wealth level contributes to the differences in housing affordability among the society (Yap & Ng, 2018). Higher income indicates higher housing affordability which reflects higher demand for houses, thus contributes to an increase in housing prices. Thus, prices and inequality endogenously interact (Zhang, 2015), as previous study evidently highlighted that increasing in absolute income inequality contributed to the rise in real house prices (Goda, Stewart, & Torres, 2016). The plausible factors contributes are the process of bidding, speculation, and increasing housing consumption at the top (an increase in the numbers of richer people will allow this group to 'consume' more housing) (Green & Shaheen, 2014). However, influences of income inequality on affordability for low income group could be different depending on the status of ownership such as renters or owners (Dewilde, 2011). Other than that, the types of income inequality could produce a different outcomes, as relative income inequality found not cointegrated with the housing price (Goda et al., 2016). Therefore, contradict conclusion is possible, in which an income inequality is not a determinant of housing price (Arshad, Ismail, & Rahman, 2018; Baranoff, 2016).

Hence, macroeconomic factors evidently influence the housing price in previous studies. The fact that the housing price index is continuously increasing in Malaysia provide an opportunity to investigate on the impact of macroeconomic factors in Malaysia, particularly between high income and low-income states.

**Data and methodology**

Secondary data was collected from various sources which are the National Property Information Centre (NAPIC), Economic Planning Unit (EPU), Annual Economic Report, Bank Negara Annual Report, and Department of Statistic. Panel data was obtained from all fourteen states (including Federal Territory) in Malaysia which are Kuala Lumpur, Negeri Sembilan, Melaka, Pahang, Johor, Perak, Penang, Kedah, Kelantan, Terengganu, Sarawak, and Sabah. The period of analysis is from 2005 to 2017.

In this study, the following panel regression model was formed to examine the link between housing price index as the dependent variable, with independent variables which are unemployment rate, GDP, and population. This regression model is based on (Mihaljek, 2007):

$$HPI_{it} = \alpha_{it} + \beta_1 UN_{it} + \beta_2 GDP_{it} + \beta_3 POP_{it} + \varepsilon_{it} \quad (1)$$

where $HPI_{it}$ (Housing Price Index) is an indicator for housing prices for state *i* in year *t*. UN (unemployment), GDP (Gross Domestic Product), POP (population), are macroeconomic variables as the independent variables. $\alpha, \beta_1, \beta_2, \beta_3$are regression coefficient and $\varepsilon_{it}$ is the error term.

The same multiple regression model used to determine the factors influence housing price in high income and low-income states. High income states and low-income states differentiated according to the level of median income by states obtained from the Department of Statistic Report. Median monthly household income in Malaysia (national level) recorded at RM5228. The states which recorded higher median income than the national level is categorized as the higher income states which are Wilayah Persekutuan Kuala Lumpur, Selangor, Johor, Melaka, and Pulau Pinang. On the other hand, the states of Terengganu, Negeri Sembilan, Perlis, Sarawak, Sabah, Perak, Pahang, Kedah and Kelantan registered a median monthly income below the median income of the national level categorized as the lower income states.

**Findings and Discussion**

Correlation analysis was performed to identify the relationship and correlation level between the variables in all states, and the result shown in Table 1. Results shows that there is a weak correlation between the housing price index and the other variables. The strongest correlation to the Housing Price Index is the Gross Domestic Product at 0.3603, while the weakest is unemployment at 0.0439. Unemployment correlated negatively to the Housing Price Index, while Gross Domestic Product and population shows a positive correlation. However, correlation level does not imply causation, therefore further analysis needs to be employed to achieve the objective of the study.

Table1: Correlation between variables

| Variables | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Housing Price Index | - | | | |
| Unemployment | -0.0439 | - | | |
| Gross Domestic Product | 0.3603 | 0.0242 | - | |
| Population | 0.1376 | 0.2149 | 0.8410 | - |

The level of significant for Breusch and Pagan Lagrangian multiplier (BPLM) test for the study is less than 0.05, indicates that the data cannot be pooled by panel OLS. Hence, data analysis continued with the Hausman test to determine between random effect and fixed effect model. The result of the Hausman test indicate that fixed effect model will be used. Mean VIF score for all regression models is lower than 10, indicates the models are free from multicollinearity problem. Modified Wald Test result indicate the models for all states and low-income states suffered from heteroskedasticity, however, high income model is homoskedastic. All three models suffered from autocorrelation problem as indicated by the result of Wooldridge test. Hence, all states and low-income states models were corrected for heteroskedasticity and autocorrelation problem, meanwhile high-income model was corrected for autocorrelation problem.

Table 2 shows the panel regression result for all states, the fixed effects, and corrected heteroskedasticity and autocorrelation. Corrected heteroskedasticity and autocorrelation result shows that GDP and population significantly influence the housing price in Malaysia at 99% confidence level. However, unemployment rate found to be insignificant towards the housing price. The Gross Domestic Product recorded a positive relationship with housing price, but the relationship between the population and the housing price shows otherwise.

Table 2: Results of Panel Regression Analysis for all states

| | *All States* | |
|---|---|---|
| Variables | Fixed Effect | Corrected Heteroskedasticity & Serial Correlation |
| Constant | -2,318*** | -123.3* |
| | *207.7* | *66.56* |
| un | 4.885** | 3.987 |
| | *1.937* | *4.655* |
| lngdp | 59.87*** | 62.01*** |
| | *9.117* | *14.58* |
| lnpop | 241.6*** | -57.33*** |
| | *39.81* | *18.93* |
| BP-LM Test | (0.0014) *** | - |
| Hausman Test | (0.0000) *** | - |

| | | |
|---|---|---|
| Multicollinearity (VIF Test) | 2.94 | - |
| Heteroskedasticity (Modified-Wlad Test) | (0.0000) *** | - |
| Serial Correlation (Woolridge Test) | (0.0000) *** | - |
| Observations | 182 | 182 |

*Notes: Figures in parentheses are robust standard errors (for variables only). ***, ** and * denotes significance at 1%, 5% and 10% level, respectively. BP-LM represent Breusch and Pagan Lagrangian Multiplier Test, whereas VIF represent Variance Inflation Factor. Symbol '- 'indicates non-related test for the model.*

Table 3 shows the summary of panel regression findings for high income and low-income states in Malaysia. Both high income and low-income states recorded a non-significant influence of unemployment towards the housing price. However, the result shows that Gross Domestic Product and population significantly influence the housing price index at 99% confidence level. Results on the relationship between the variables in high income and low-income states is in line with the result for all states, whereby the GDP shows a positive relationship, meanwhile population shows a negative relationship with the housing price.

Table 3: Results of Panel Regression Analysis for high income states and low-income states

| | *High Income States* | | *Low Income States* | |
|---|---|---|---|---|
| Variables | Fixed Effect | Corrected Serial Correlation | Fixed Effect | Corrected Heteroskedasticity & Serial Correlation |
| Constant | -2,052*** | -415.4*** | -2,532*** | -93.12 |
| | *444.3* | *126.4* | *199.1* | *77.58* |
| un | 11.84*** | 3.998 | 0.494 | -4.752 |
| | *4.286* | *2.715* | *1.836* | *5.31* |
| lngdp | 86.27*** | 78.79*** | 40.11*** | 62.97*** |
| | *19.27* | *12.71* | *8.839* | *15.07* |
| lnpop | 154.3* | -45.12** | 307.7*** | -57.19*** |
| | *83.65* | *21.99* | *38.64* | *18.26* |
| BP-LM Test | (0.0002) *** | - | (0.0002) *** | - |
| Hausman Test | (0.0000) *** | - | (0.0000) *** | - |
| Multicollinearity (VIF Test) | 2.89 | - | 3.21 | - |
| Heteroskedasticity (Modified-Wlad Test) | (0.8505) | - | (0.0001) *** | - |
| Serial Correlation (Woolridge Test) | (0.0000) *** | - | (0.0005) *** | - |
| Observations | 65 | 65 | 117 | 117 |

*Notes: Figures in parentheses are robust standard errors (for variables only). ***, ** and * denotes significance at 1%, 5% and 10% level, respectively. BP-LM represent Breusch and Pagan Lagrangian Multiplier Test, whereas VIF represent Variance Inflation Factor. Symbol '- 'indicates non-related test for the model.*

High rate of unemployment does not ensure the significant of influence on housing prices (Grum & Kobe, 2016). Insignificant relationship between unemployment rate and housing price indicates that there are other factors that explains the changes in housing prices. The direct relationship between GDP and housing price in both high and low-income states supports the theory of aggregate demand and market price, as increase in consumers' income leads to higher demand for housing, thus forcing the price level to increase(A. Aziz, 2013; Kok et al., 2018; Osmadi et al., 2015). While economic inequality is evidently not a contributing factor towards the changes in housing price(Arshad et al., 2018; Baranoff, 2016; Goda et al., 2016), the coefficient level indicates that the impact of GDP towards the housing prices is higher in high-income states . On the other hand, the inverse relationship between the population and housing price can be explained using the population ageing and the motives of demand factors. Higher rate of population ageing in a country reflects the lower demand for housing as this group usually own more than one house assets, which therefore reduce the housing demand in the country (Wang et al., 2015). Motives of demand

refers to the immigrants who demand houses for rental rather than ownership (Mulder, 2006). Population recorded a significant and negative relationship towards the changes in housing price in both high and low-income states. However, population appeared to be more significant (99 percent confidence level) and higher impact (coefficient value is 57.19) towards the housing price in low-income states as compared to the high-income states which recorded a significant level of 95 percent confidence level and coefficient value is 45.12. The Low-income states demand for houses as a necessity for the household, however high income states are more motivated by the profitable investment in housing (Dewilde, 2011) as the level of affordability is higher than the low-income states.

**Conclusion**

The focus of this study is to examine the influence of macroeconomic factors towards the housing price in high- and low-income states in Malaysia. High- and low-income states were determined in accordance to the average mean income by states as compared to the Malaysia's average mean income. The results of panel regression analysis show that unemployment is not a significant factor that influence the housing price in high income states, low income states, and Malaysia in general. Gross Domestic Product found to have a direct relationship with the housing price, but the impact is higher on high-income states. Meanwhile, population found to have an inverse relationship with the housing price, and evidently greater influence in low-income states. Thus, it will be interesting to further investigate on the causal relationship between the population and the housing price in future research. Furthermore, future research could enhance the study by segregating the population by age group to investigate on the negative relationship between the population and housing price.

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# Modeling the effect of banking sector development on economic growth: Evidence from Sub-Saharan African countries

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**Keywords**
banking sector; development; economic growth; Generalized Methods of Moments, sub-Saharan Africa.

**Abstract**

*This study examines the effect of banking sector development on economic growth. We employed a panel data of 33 countries in Sub-Saharan Africa for the period of 1995 to 2015. Differenced Generalized Methods of Moments (GMM) put forward by Arellano and Bond (1991) was used to estimate the model. Principal component analysis was deployed in establishing the banking sector development index. The empirical evidence provided by the study shows that banking sector negatively and significantly influences economic growth in the short run. Gross fixed capital formation and trade openness as ratios of GDP significantly influence economic growth positively, labour force participation rate and foreign direct investment has no significant effect on economic growth. We recommend a robust competitiveness among banking financial institution and a stronger institutional quality to enhance the contribution of banking sector to economic growth.*

## Introduction

The argument on the financial sector development and economic growth nexus came to limelight over 10 decades ago following the work of Bagehot (1873), who contended that financial sector development significantly stimulated industrial development in England through effective capital mobilization. This view was further advanced by Schumpeter (1911) who noted that effective financial intermediation role by the financial system, enhances allocation of savings to firms for productive investment, hence leading to increased productivity growth. Large number of researchers has lent their voice to this debate, coming up with divergent opinion. Attempt is made in this study to establish empirical evidence with particular reference to Sub-Saharan African countries. The rest of the study is organized as follows: the next section 2 introduces the trend of studies related to the area of study with their main specifics. Section 3 shows the methodology, our dataset and variables. Section 4 shows the findings and results. Section 5.1 discussed and summarized key findings. Finally, section 5.2 concludes the paper and states final remarks.

## 2. Literature review

There exists a plethora of studies examining the relationship between financial sector development and economic growth across various regions of the world. We present a review of selected recent studies on this subject area. Levine, Loayza and Beck (2000), investigated the effect of financial intermediary development and economic growth employing a panel of 74 developed and developing countries, and a cross-section of 71 developed and developing countries. Adopting Arellano and Bond panel-GMM estimator, they found that financial intermediary variables (Liquid liabilities and private sector credit) has a statistically significant and positive effect on economic growth across the panel and cross-sectional models. Beck and Levine (2004) in a similar study examined the effect of stock market and banking sector development on economic growth employing a panel of 40 developed and developing countries for a period of 1976 to 1998. Using Arellano and Bond estimator, the result indicates that both stock market development and banking sector development has a positive and statistically significant effect on economic growth. Narayan and Narayan (2013) employed a panel of 65 developing countries for the period of 1995 to 2011 in examining the short-run relationship between financial systems and economic growth. The result provided evidence in support of financial system-led growth, while bank credit showed a negative effect on economic growth of the full sample. The regional level results indicate that

for Middle Eastern countries, neither financial sector nor banking sector contributes to economic growth. They concluded that apart from Middle Eastern countries, the evidence from the result indicates that banking sector has a negative and significant effect on economic growth of the rest of other regions under consideration.

In a recent study, Aali-Bujari, Venegas-martinez and Perez-Lechuga (2017) examined the contribution of stock market capitalization and banking spread on economic growth, employing a panel data of 7 Latin American countries for the period of 1994 to 2012. They found that banking spread has a negative impact on economic growth, while stock market capitalization has a positive impact on economic growth of the countries under study. The results were found to be robust across both system and difference GMM. Pradhan, Arvin, Hall and Norman (2017), provided empirical evidence in support of long-run and short-run relationship between trade openness, banking sector depth and economic growth of ASEAN countries. Mhadhbi (2014), opined that banking system availability has a positive and statistically significant effect on economic growth using data from developed and developing countries for the period of 1973 to 2012.In a study that investigated the role of banking sector development in promoting economic growth among selected countries in Central and South Eastern Europe, Petkovski and Kjosevski (2014) concluded that most of the proxies for banking sector development (bank credit to private sector, interest margin) has a negative effect on economic growth except for ratio of quasi money which showed a positive effect. Abu, Marbuah and Mensah (2013) provided empirical evidence in financial development and economic growth nexus and concluded that the effect of financial development on economic growth of Ghana depend on the proxy for financial sector development. they noted that broad money stock as a ratio of GDP has a negative effect on the economic growth of Ghana while credit to private sector and total domestic credit have positive effect on economic growth.

According to Gazdar and Cherif (2015), most of the indicators of financial sector development have a negative effect on economic growth of MENA countries, but when controlled with institutional quality the effect turns positive. Duican and Pop (2015) in a study of Romanian economic growth concluded that banking sector credit significantly influence the growth of the economy. They noted that as baking activity slows down, it drags down economic activities but as the credit activities of the banking sector improves it translate to increase in economic growth. Kenza and Eddine (2016), investigated the effect of financial sector development on economic growth, employing a panel data of 11 MENA countries for the period of 1980 to 2012 and found that financial intermediary has a negative on growth in both the long run and short run. The concluded by identifying the need to improve competitiveness among financial intermediaries in other to enhance their contribution to economic growth. Sepehrdoust (2018) examined the impact of information communication technology and financial sector development on the growth of OPEC developing countries for the period of 2002 to 2015. Using panel GMM, they found that both financial sector development index and ICT have positive effect on economic growth. Meanwhile the result of control variables included in the models produced mixed result with some having negative effect (trade openness and inflation) while others positive (government expenditures, labour force, investment growth, and growth of gross fixed capital formation).

The result from the reviewed literatures is devoid of any conclusive agreement on the actual effect of banking sector development on economic growth. Some researchers in their study found positive effect (Levine, Loayza and Beck 2000; Beck and Levine 2004; Pradhan, Arvin, Hall and Norman 2017; Mhadhbi 2014), while others found negative relationship (Narayan and Narayan 2013; Aali-Bujari, Venegas-martinez and Perez-Lechuga 2017).

Financial sector development affects growth through two broad channels; stock market and banking sector. Various studies have examined the effect of the aggregate financial sector development on economic growth (Aali-Bujari, Venegas-martinez and Perez-Lechuga, 2017; Narayan and Narayan, 2013; Kenza and Eddine, 2016; Abu, Marbuah and Mensah, 2013; Gazdar and Cherif, 2015; Duican and Pop, 2015). A good number of researchers have equally looked at the stock market contribution to growth. Very few studies have attempted to investigate the banking sector contribution to growth (Levine, Loayza and Beck 2000; Pradhan, Arvin, Hall and Norman 2017; Duican and Pop 2015), hence the need to empirically investigate the effect of banking sector development on the economic growth of Sub-Saharan countries.

## 3.0 Methodology

### 3.1 Data

In our empirical analysis we employ data from 33 countries in Sub-Saharan Africa (SSA) over a period of 1995-2015, ensuring 21 observations per country under sample. The list of countries in SSA that made up the sample is contained in Appendix A. the following variables are used in the estimation process: economic growth as the dependent variable is proxied by GDP growth rate, banking sector development index (BSDI) which was derived from five variables (Private credit by deposit money banks as a percentage of GDP, Deposit money banks' assets as a percentage of GDP, Financial system deposits as a percentage of GDP, and Broad money as a percentage of GDP) using Principal Component Analysis (PAC)is the main independent variable, while gross fixed capital formation (GFCF), labour force participation rate (LFPR) trade openness (TOP) and foreign direct investment where included in the model as control variables. The inclusion of some control variables in the model is consistent with Narayan and Narayan (2013). All the data were sourced from World Development Indicators and Global Financial Development Database published by World Bank. The summary statistics of the variables are reported in Table 1.

### 3.2 Principal Component Analysis (PCA)

In other to capture the accurate and maximum effect of banking sector development, we included five indicators in constructing an index for banking sector development which is consistent with some studies like Coban and Topcu (2013), Huang, et al. (2010), and Saci and Holden (2008). PCA is a tool for multivariate data analysis which is employed to extract significant information from complex datasets. The aim of this technique is to reduce the dimensionality in the data. This method attempts to preserve all the variation available in the data when dealing with large set of variables. PCA helps to transform data intoa new variable (i.e Principal component) which are not correlated. Jolliffe (2002) noted that the maximum variation of the original variable is contained in the first few principal components. We, therefore, employ the weight obtained from PCA, banking sector development index (BSDI) as independent variable in constructing the model.

### 3.3 Estimation Procedure

The effect of lagged GDP growth on the current GDP growth is captured in a linear dynamic panel data (DPD) model estimated for this study. The unobserved panel-level effect contained in dynamic panel data model tends to correlate with the lagged dependent variable, hence rendering the standard estimators inconsistent. To address this inconsistency, Arellano and Bond (1991) provided a consistent estimator for these types of DPD model known as difference Generalized Method of Moment (GMM). This estimator uses the lagged values of the endogenous variables as instruments after taking theirfirst difference. Arellano and Bover (1995) noted that lagged levels are most often poor instrument for first difference variables. Meanwhile, to address these issues, Blundell and Bond (1998) introduced the system GMM which is adjudged to be a more efficient estimator; it mitigates the weak instruments problem by using additional moment conditions. Based on this, we employ the more efficient and less biased system GMM estimator for our analysis.

It is important to note at this point some potential cautions in employing system GMM estimator and as well explain how these issues are addressed in this study. The first problem is associated with the validity of the instruments. Secondly, the estimation procedure is based on the assumption that there is no second order autocorrelation in the idiosyncratic errors. Thirdly, both the test for autocorrelation and that of validity of instruments loses power as the number of instruments, *i,* increases above the cross-sectional sample size (in our study, the number countries) *n*.Roodman (2007) notes that when the instrument ratio, *r*, defined as $r=\frac{n}{i}$, is less than 1, the assumption underlying the two procedures are likely to be violated. Meanwhile, as *r* becomes low, it raises the vulnerability of the estimate to Type 1 error, where the estimator produces a significant result even when there is no clear relationship existing between the variables under consideration. The simplest solution to this problem according to Roodman (2007) is to restrict the lags of the dependent variables used for instrument to the extent that $r \geq 1$.

Finally, we employ two-step system GMM estimator, which is believed to be asymptotically more efficient and robust to all kinds of heteroskedasticity. Similarly, the independent variables will be treated

as strictly exogenous in all the regressions. We also employ only internal instruments, no plan to include external instruments.

Despite the pitfalls in estimating system GMM panel model, it has significant benefits associated with it among which are: the omission of dynamics in the static panel estimation causes estimation bais (Baum, 2006; Bond, 2002). The misspecification of models in static panel estimation which ignores the impact of lagged dependent variable is clearly addressed in a system GMM. Secondly, the endogeneity problem arising as a result of the correlation between independent variable and the error term in a regression model is easily addressed in a dynamic panel data model. Thirdly, system GMM models is said to outperform difference GMM proposed by Arellano and Bond (1991) in a multivariable dynamic panel model. The system GMM is more appropriate especially when the variables under consideration are random walk variables (Roodman 2009).

**3.4 Descriptive Statistics**

Table 1 shows the mean, standard deviations, and maximum and minimum levels of the variables under study. For the sample of the 33 countries in Sub-Saharan Africa, the average GDP growth rateis 4.479%, standard deviation is 4.665% with a minimum of -36.70% and a maximum of35.22%. The average value of the GFCF is 20.42% of GDP, the standard deviation of GFCF as a percentage of GDP is 7.954%, the minimum of GFCF as a percentage of GDP is -2.424% and the maximum of GFCF as a percentage of GDP is 60.16%. With respect to banking sector development index, the average is -2.63e-09%, the standard deviation is1.924%, with a minimum of -6.714% and a maximum of 5.142%.

Table 1: Descriptive Statistics

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| VARIABLES | N | Mean | Sd | Min | max |
| Growth | 693 | 4.479 | 4.665 | -36.70 | 35.22 |
| BSDI | 693 | -2.63e-09 | 1.924 | -6.714 | 5.142 |
| GFCF | 693 | 20.42 | 7.954 | -2.424 | 60.16 |
| LFPR | 693 | 69.04 | 11.58 | 42.36 | 90.34 |
| TOP | 693 | 63.18 | 26.89 | 14.77 | 165.6 |
| FDI | 693 | 3.266 | 5.167 | -8.589 | 50.02 |

The Labor force participation rate as percentage of total population of working ages (15-64 years) has a mean value of 69.04% and standard deviation of 11.58%, the minimum and maximum values are 42.36% and 90.34% respectively. Trade openness as a percentage of GDP for the sampled countries in SSA averaged 63.18%, the standard deviation is 26.89%, the minimum value is 14.77% and the maximum value is 165.6%. Net inflow of foreign direct investment as a percentage of GDP has an average of 3.266%, the standard deviation is 5.167%, while the minimum and maximum values are -8.589% and 50.02% respectively.

3.5 Result of Principal Component Analysis (PCA)

The result of the PCA indicates that the principal component generated captured about 95% of the variations in the five different variables employed as proxies for banking sector development. As shown in figure 1 below, only one component reported an eigen value greater than 1, hence we employ only one component to proxy for banking sector development.

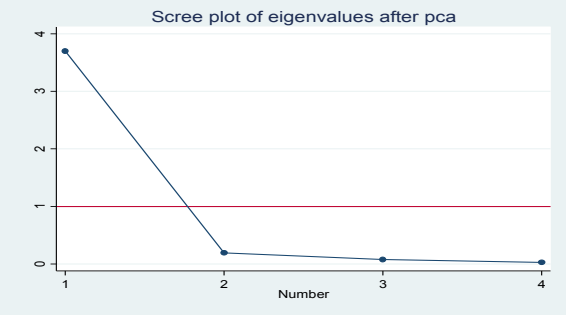


Figure 1: Eigen values after PCA

**4.0 Findings/Results**

The empirical results from the panel of 33 countries in Sub-Saharan African examined in this study are reported in Table 2. The results are presented from two variants of difference-GMM: columns 1-3 present the results from two-step difference-GMM while columns 4-6 presents the result from one-step difference-GMM. In line with existing literature, each model specification consists of lagged value of economic growth, current value of banking sector development index determined using principal component analysis (PCA), and other control variables (gross fixed capital formation, trade openness, foreign direct investment, labour force participation rate etc). The result indicates that lagged economic growth is significant, positive and highly persistent for each model. It shows that economic growth of the current year is significantly affected by its previous value. Banking sector development index shows a negative and statistically significant effect on economic growth. This result is consistent with all the models except model 3 which shows insignificant result. It, therefore, implies that banking sector development index has significant negative influence on economic growth in Sub-Saharan African countries. Consistent with theory, gross fixed capital formation has a positive and significant effect on economic growth and the effect is persistent across all the models. Labour force participation rate has statistically insignificant effect on economic growth in model1to model 6. It also shows a negative effect in models 1 and 2 but positively influence economic growth in model 3 to model 6. This however suggests that level of labour force productivity in SSA is still very low, hence cannot significantly explain economic growth. The result further indicates that trade openness significantly influences economic growth in SSA. In other words, trade openness is a significant determinant of economic growth in the region under investigation. This implies that increase trade openness will result to a significant increase in the level of economic growth in SSA. Foreign direct investment has statistical insignificant effect on economic growth across different models examined. This result, however, is robust across various techniques used.

Table 2: Result of Difference GMM estimation

| VARIABLES | (1) SGMM2_CL | (2) SGMM2_END | (3) SGMM2_YD | (4) SGMM1_CL | (5) SGMM1_END | (6) SGMM1_YD |
|---|---|---|---|---|---|---|
| L.Growth | 0.123* | 0.123* | 0.386* | 0.133* | 0.133* | 0.330** |
| | (0.0637) | (0.0637) | (0.190) | (0.0675) | (0.0675) | (0.122) |
| BSDI | -0.510** | -0.510** | -0.454 | -0.677** | -0.677** | -0.637*** |
| | (0.245) | (0.245) | (0.282) | (0.270) | (0.270) | (0.229) |
| LnGFCF | 1.898*** | 1.898*** | 1.631** | 1.971*** | 1.971*** | 1.680*** |
| | (0.570) | (0.570) | (0.747) | (0.617) | (0.617) | (0.611) |
| LnLFPR | -3.376 | -3.376 | 1.089 | 0.168 | 0.168 | 0.818 |
| | (5.173) | (5.173) | (6.428) | (5.056) | (5.056) | (4.666) |
| LnTOP | 3.369*** | 3.369*** | 2.190** | 3.057*** | 3.057*** | 2.635*** |
| | (0.991) | (0.991) | (1.019) | (0.856) | (0.856) | (0.786) |
| FDI | 0.000300 | 0.000300 | -0.0136 | 0.00744 | 0.00744 | 0.00202 |
| | (0.0306) | (0.0306) | (0.0262) | (0.0247) | (0.0247) | (0.0239) |
| Observations | 626 | 626 | 626 | 626 | 626 | 626 |
| Number of ID | 33 | 33 | 33 | 33 | 33 | 33 |
| Country effect | YES | YES | YES | YES | YES | YES |
| year effect | NO | NO | YES | NO | NO | YES |
| Hansen_test | 21.04 | 21.04 | 26.10 | 21.04 | 21.04 | 26.10 |
| Hansen Prob | 0.277 | 0.277 | 0.163 | 0.277 | 0.277 | 0.163 |
| Sargan_test | 16.33 | 16.33 | 25.68 | 16.33 | 16.33 | 25.68 |
| SarganProb | 0.570 | 0.570 | 0.176 | 0.570 | 0.570 | 0.176 |
| AR (1) _test | -3.137 | -3.137 | -2.696 | -3.549 | -3.549 | -3.304 |
| AR (1) _P-value | 0.001 | 0.001 | 0.007 | 0.000 | 0.000 | 0.000 |
| AR (2) _test | 0.578 | 0.578 | 1.400 | 0.787 | 0.787 | 1.353 |
| AR (2) _P-value | 0.563 | 0.563 | 0.162 | 0.431 | 0.431 | 0.176 |
| No. of Instruments | 24 | 24 | 26 | 24 | 24 | 26 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, SGMM1 & SGMM2 denote One-Step & Two-Step GMM respectively. Also, regressions with suffix ''CL'' follow Roodman (2009) and collapse the instrument matrix. Regressions with suffix ''END''use equation (level) after following Roodman (2009 for iv. Regressions with suffix ''YD'' included year dummy as additional instruments. The Sargantest, and Hansen_test examines the null hypothesis that the over-identifying restrictions are valid. The p-values are reported to test the null. The AR (2) test examines the null hypothesis of zero autocorrelation in the first-differenced errors. The p-values are reported to examine the null.

**4.1 Diagnostic tests**

The result of the diagnostic test indicates that AR (1) and AR (2) tests supports the validity of the model specification for the whole sample. AR (1) test indicates the rejection of null hypothesis of no autocorrelation in the model, while the result of AR (2) indicates that beyond order 1, there is autocorrelation in the model which is consistent with the assumption underlining Arellano and Bond (1991) estimator. For all the estimated model, we failed to reject the null hypothesis of no autocorrelation at AR (2) but rejected the null hypothesis at AR (1) in all the models. Hansen test which is one of the predominantly used diagnostic test in GMM estimation, checks the validity of instrument over-identification restriction. The result of this test confirms the validity of instruments used in all the models estimated. The assumption of steady state propounded by Roodman (2009), presupposes the estimated coefficient on the lagged economic growth in the model should point out convergence by producing a value less than unit. Since the coefficient estimate of the lagged value of economic growth in the model falls within 0.143 to 0.338, the steady state assumption which is used to test for the validity of instrument also holds.

Table 3: Result of System GMM estimation

| VARIABLES | (1) SGMM2_CL | (2) SGMM2_END | (3) SGMM2_YD | (4) SGMM1_CL | (5) SGMM1_END | (6) SGMM1_YD |
|---|---|---|---|---|---|---|
| L.Growth | 0.143** | 0.146** | 0.338 | 0.151** | 0.154** | 0.321** |
| | (0.0599) | (0.0605) | (0.253) | (0.0621) | (0.0612) | (0.142) |
| BSDI | -0.159 | -0.112 | -0.135 | -0.205* | -0.156* | -0.146* |
| | (0.131) | (0.102) | (0.0865) | (0.118) | (0.0920) | (0.0799) |
| lnGFCF | 2.185*** | 2.339*** | 2.010** | 2.199*** | 2.353*** | 1.938** |
| | (0.604) | (0.658) | (0.880) | (0.641) | (0.679) | (0.753) |
| lnLFPR | 1.709 | 1.974* | 2.304** | 2.204 | 2.290* | 1.786* |
| | (1.139) | (1.062) | (0.994) | (1.387) | (1.324) | (1.004) |
| lnTOP | 0.596 | 0.0224 | -0.0829 | 0.344 | -0.164 | -0.0661 |
| | (0.695) | (0.615) | (0.625) | (0.612) | (0.578) | (0.472) |
| FDI | 0.0207 | 0.0351 | 0.00304 | 0.0100 | 0.0181 | 0.0106 |
| | (0.0360) | (0.0462) | (0.0277) | (0.0254) | (0.0310) | (0.0274) |
| Constant | -12.30** | -11.60** | -12.31** | -13.38** | -12.17* | -9.960* |
| | (4.719) | (4.638) | (5.529) | (5.926) | (6.010) | (4.913) |
| Observations | 659 | 659 | 659 | 659 | 659 | 659 |
| Number of ID | 33 | 33 | 33 | 33 | 33 | 33 |
| Country effect | YES | YES | YES | YES | YES | YES |
| year effect | NO | NO | YES | NO | NO | YES |
| Hansen_test | 22.80 | 23.17 | 27.31 | 22.80 | 23.17 | 27.31 |
| Hansen Prob | 0.246 | 0.230 | 0.161 | 0.246 | 0.230 | 0.161 |
| AR (1) _test | -3.191 | -3.189 | -2.246 | -3.477 | -3.464 | -3.230 |
| AR (1) _P-value | 0.00142 | 0.00143 | 0.0247 | 0.000506 | 0.000533 | 0.00124 |
| AR (2) _test | 0.698 | 0.695 | 1.020 | 0.893 | 0.901 | 1.196 |
| AR (2) _P-value | 0.485 | 0.487 | 0.308 | 0.372 | 0.367 | 0.232 |
| No. of Instruments | 26 | 26 | 28 | 26 | 26 | 28 |

Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1, SGMM1 & SGMM2 denote One-Step & Two-Step GMM respectively. Also, Regressions with suffix ''CL'' follow Roodman (2009) and collapse the instrument matrix. Regressions with suffix ''END'' use equation (level) after following Roodman (2009) for Instrumental variables. Regressions with suffix ''YD'' included year dummy as additional instruments.

## 5.0 Discussion of results and conclusions

### 5.1 Discussion of results

The banking sector-economic growth nexus examined in this study failed to provide empirical evidence in support of banking sector-led growth hypothesis. We find that banking sector development index significant influence economic growth negatively across various models. This result corroborates the findings of Narayan and Narayan (2013); Aali-Bujari, Venegas-martinez and Perez-Lechuga (2017); Gazdar and Cherif (2015); Duican and Pop (2015); Kenza and Eddine (2016); Petkovski and Kjosevski (2014) who equally reported negative relationship between baking sector development and economic growth. The finding is also inconsistent with the results of Beck and Levine (2004); Mhadhbi (2014); Sepehrdoust (2018) whose empirical work showed a positive relationship between banking sector and economic growth. We therefore note that the differences in the result could be attributed to structural difference in the make-up of panel data used.

The negative effect of banking sector on economic growth can be linked to the Mckinnon-Shaw theoretical model, which presupposes that heavy restrictions imposed on the banking system by the government by way of interest ceilings, humongous reserve requirements as well as direct credit policy in no little measures retards the development of the banking system. The weak capital market which characterized most of the countries in Sub-Saharan Africa increases the need for banking sector restriction. The outcome of these increasing restrictions on the banking sector is a negative effect on economic growth. This negative effect of banking sector on economic growth could be attributed to various causes. First, increasing preference of consumption over savings due to low savings rate has significantly discouraged savings and investment as well. Second, Loan mismatch by bank borrowers most often create financial repression which is anti-growth.

### 5.2 Conclusions

The objective of this paper has been to determine the effect of banking sector development on economic growth of Sub-Saharan Africa countries. The empirical analysis was based on a panel data of 33 SSA countries covering the period of 1995 to 2015. We used principal component analysis (PCA) to determine the banking sector development index from four key variables (Private credit by deposit money banks as a percentage of GDP, Deposit money banks' assets as a percentage of GDP, Financial system deposits as a percentage of GDP, and Broad money as a percentage of GDP). Differenced and system GMM estimators were employed, accounting for both one-step and two-step in the GMM models. We controlled with gross fixed capital formation, labour force participation rate, trade openness and foreign direct investment. Our findings indicate that banking sector development significantly and negatively influence economic growth. This study however, failed to provide empirical evidence in support of banking sector-led growth hypothesis. This result is robust across various models employed in the study. Gross fixed capital formation and trade openness was shown to have positive and statistically significant effect on economic growth. Labour force participation rate and foreign direct investment has no significant effect on economic growth.

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## Appendix A

| List of Countries Sub-Sahara Africa under Study | | |
|---|---|---|
| Benin | Gabon | Namibia |
| Botswana | Gambia, The | Niger |
| Burkina Faso | Ghana | Nigeria |
| Burundi | Guinea | Rwanda |
| Cameroon | Guinea-Bissau | Senegal |
| Central African Republic | Kenya | Sierra Leone |
| Chad | Madagascar | South Africa |
| Comoros | Malawi | Sudan |
| Congo, Dem. Rep. | Mali | Tanzania |
| Congo, Rep. | Mauritius | Togo |
| Cote d'Ivoire | Mozambique | Uganda |

# The roles of earning management, capital management and banks specific factors in estimating loan loss provisions: Evidence from Malaysia and Indonesia

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**Keywords**
Loan Loss Provisions, Earning Management, Capital Management, Bank Specific Factors, Pool OLS

**Abstract**

*A good banking system is principally very vital because it would facilitate the companies with financial resources and this system relies heavily on the performance of non-performing loan (NPL). Non-performing loan has become a main problem around the world as evidenced in recent experiences particularly in the United States and the European countries. Hence, much studies have been conducted LLPs as the central issue on amount to be allocated by the banks to control the credit risks. Thus, it is important for the banks to properly manage the loan loss provisions (LLP) to ensure the sufficient amounts are allocated to counterbalance the non-performing loan during financial turmoil and a flake from the crisis to the onwards and recent years. The issue of LLPs has captivated the interest of many researchers as to what extent the LLP has been affected by earning management, capital management. Thus, the main purpose of the study is to investigate the influence of earning management, capital management in affecting the provision decision of Malaysian and Indonesian commercial banks. The investigation aims to compare between Malaysia and Indonesia in detecting whether the provisions have been influenced by the earning management, capital management and certain banks specific factor such as return on asset, total loan, bank size and loan growth. The empirical findings of Malaysia and Indonesia based on Pooled Ordinary Least Square. Surprisingly, earning management and capital management have not significantly explained the variations in the loan loss provisions of Malaysia commercial banks, but recommend bank specific factors which is loan growth have a statistically significant impact on loan loss provisions. Indonesia show that earning management and return on assets have statistically significant impact on loan loss* provision.

## Introduction

Bank act as a financial intermediary where assisting every single of customer or the depositors taking their position through saving activities and reinvested it back by the bank, which is considered as the large aggregate loan, created to make profit. Despite that, the bank has to hold some risks from the loan portfolio investment when it involves low interest rate as well as excessive credit risk and losing the amount of principal investment which also known as a nonperforming loans (NPL). Initially, the successful loan applicants are subjected to comply the procedural repayment treatment set by the bank. However, due to certain circumstances borrowers fail to comply the schedule of payment for certain period and therefore lead to NPLs. It has been thought that, higher in the NPL will lead to the disruption of financial stability of the banking institutions. Thus, the increase of the NPL will increase the loan loss provision (LLP). LLP is an element that created by financial institution specifically to the commercial banks as a reserve to cover the NPL those customers who do not make payment within 90 days.

Numerous studies have been conducted on LLPs as the central issue on amount to be allocated by the banks to control the credit risks as the mandatory requirement by the central banks were insufficient to cover the losses. At certain extends the indicators used to estimate LLPs in the literature has no general consensus to explain its significant relationship. To date, many empirical papers relates the LLPS with the earnings management and capital management but yet no consensus to generalize the

findings in estimating the LLPs held by commercial banks. Hence, the main purpose of the study is to investigate the influence of earning management, capital management in affecting the provision decision of Malaysian and Indonesian commercial banks. Additionally, the study also incorporates the banks specific factor such as return on asset, total loan, bank size and loan growth as other factors that contributing to the provision decision.

The discussion of earning management, capital management and certain banks specific factors is still debated until today, due to the mixed findings produced by the previous studies whether positively or negatively in pertaining to the LLP behaviour (Abdullah, Bujang, Ahmad, April 2016)(Hansen, 2015)(Taktak, Boudriga, & Ajmi, 2010)(Zoubi & Al-Khazali, 2007)(Packer & Zhu, 2012)(Ben Othman & Mersni, 2014)(Leventis, Dimitropoulos, & Anandarajan, 2011). According to these studies, it also has done different factors influencing LLP decision by bank managers depends on the rules and policy implemented in the country, periods covered as well as the methodology of the research and the model. Nevertheless, most of the research conducted are relevant to European, Spanish, United States, Asian countries. The studies on LLPs are relatively limited and have produced mixed findings on the practice of earnings and capital management as well as bank specific factors. Therefore, the first question addressed is whether LLPs of Malaysian and Indonesian commercial banks are affected by earning management, capital management and certain bank specific factor during the period of 2009-2017. The motivation of this study is to extend the understanding of how internal factors such as earning management, capital management and certain bank specific factors of these banks influences the loan loss provisions during that particular period. The best of researcher knowledge, there is a limited evidence found with regards to the countries that having similar average percentage of NPL would lead to allocate similar LLPs using similar factors.

The next sections of this paper explain the relevant literature review used in this study followed by the data and methodology and analysis of findings at section 3 and 4 respectively. Final section states the conclusion and recommendation.

## Literature Review

### Loan Loss Provision and Earning Management

There are various factors that have been identified by the previous literature as determinants of loan loss provisions in the banking sector as LLPs play an important role to absorb future losses. Earning management is the factor that might influence the LLP allocation to smooth the earning. In an investigation looking at the impact of loan loss provision as an element for earning management among others things (Ma, 1999) arrived at various conclusions.(Ma, 1999) demonstrated that the U.S. commercial banks utilized loan loss provision and charge-offs to smooth revealed income. In his investigation, he found no relationships between quality of loan portfolios and loan loss provision. At the end of the day, it will riskier portfolios did not seem to produce higher loan loss provision. Besides, the discussion of LLP and earning management is still debated until today, due to the mixed findings produced by the previous studies in detecting the presence of earning management behaviour. On other hand, (Laeven & Majnoni, 2003)(Leventis et al., 2011)(Zoubi & Al-Khazali, 2007)(Kim & Kross, 1998)(Floro, 2010)(Packer & Zhu, 2012) ( Abdullah, Bujang, Ahmad, April 2016) have confirmed a significant and positive relationships between LLPs and EBTP. In contrast, (Ahmed, Takeda, & Thomas, 1999; Taktak et al., 2010; Wetmore & Brick, 1994) do not detect any evidence of the association between earning before tax and provision EBTP and LLP. According to the previous study, earning management and LLP found that significant relationship at level 0.01 in emerging market. This is because corroborates the earning management and suggest that emerging market commercials banks have been practicing the countercyclical loan loss provisioning by putting aside extra cushion in high earning years and while in developed market also found that significant relationships at level 0.01 between earning management and LLP. (Abdullah, Bujang, Ahmad, April 2016).

### Loan Loss Provision and Capital Management

Capital management can be defining as an accounting strategy by an organization to maintain sufficient level of capital adequacy ratio by utilizing the accrual item loan loss provision. The bank managers can control to decrease or increase the loan loss provision in order to ensure the minimum capital requirement is met. This activity is called managing the capital management. Capital

management is the crucial factor that can influence the allocation of LLP whereby many previous researchers are conducted the study to examine the relationships between LLP and Capital management (Pérez, Salas-Fumás, & Saurina, 2008)(Asoka Anandarajan, Hasan, & McCarthy, 2007; Asokan Anandarajan, Hasan, & Lozano-Vivas, 2003). Besides, the previous study shows that the empirical findings negative relationships between LLP and capital management, it shows the bank with decrease in capital management, will lead to increase bank loan loss provision in order to cater the capital adequacy requirement (Moyer, 1990). Argument was arise continue in very recent year when Floro, (2010), Packer & Zhu, (2012) found that a significant and negative relationships capital ratio justified the variables which is a line with the capital management theory. Next, Packer & Zhu, (2012) found that the capital adequacy ratio for selected Asian banks overall has also shown the negative relationships between LLP and capital management. Additionally, Packer & Zhu, (2012) the regression analysis of the study used Pooled Ordinary Least Square (Pooled OLS) regression for all countries and Generalized Method of Moments (GMM) for the country identification. According to previous study found that insignificant relationship between capital management and LLP in emerging market countries. The analysis of capital management reveals that the capital ratio (CAP) for emerging markets in aggregate is statistically insignificant.

**Loan Loss Provision and Bank Specific Factors**

There are certain factors have been identified by the previous literature as determinants of loan loss provisions in the banking sector as determining the LLPs allocation to play an important role to absorb future losses. Among the factors are return on assets, total loan, bank size and loan growth ( Abdullah, Bujang, Ahmad, April 2016)(Misman, Bhatti, Lou, Samsudin, & Rahman, 2015)(Packer & Zhu, 2012)(Asokan Anandarajan et al., 2003)(Hansen, 2015)(Kim & Kross, 1998)(Zoubi & Al-Khazali, 2007) (Ozili, 2018)(Laeven & Majnoni, 2003). Based on the above research, the deliberation of LLP and bank specific factor is still debated until today, due to the mixed findings produced by the previous studies in detecting the presence of bank specific factor behaviour.

However, the mixed findings empirical evidence have a strong associate between bank size and loan loss provision that work on Islamic banking and it was gave higher contribution amount of loan loss provision allotment (Zoubi & Al-Khazali, 2007; Ben Othman & Mersni, 2014). Meanwhile, the expected positive relationship of size and LLP is suggested by Asokan Anandarajan *et al*., (2003). They estimated that large banks might involve in high volume of business transaction and tend to allocate higher LLP compared to smaller banks as expected by Zoubi & Al-Khazali, (2007). Next, from the previous study (Hansen, 2015) was discussed that the bank size have positive impact towards loan loss provision which are the large bank have huge of business transaction, large capital and will exposed to loan loss. In contradict, have the studies explained the size have negative impact towards loan loss provision whereby the large bank will tend to allocate small loan loss provision (Ozili, 2015). Accordingly, it is due to the financial stability and it can manage their earning smoothly.

**3. Research Methodology**

The data collected based on the variables used in this study namely Loan Loss Provision, Earning Management, Capital Management and Bank Specific Factor using data stretching from 2009 until 2017 the sample countries of commercial banks comprise of two countries which are Malaysia and Indonesia with 20 commercial banks and 39 commercial banks respectively. The justification to use Malaysia and Indonesia is due to similar average percentage of NPL which data extracted from World Bank. As an initial statistic requirement, a descriptive statistic is conducted to understand the characteristic of the data before proceeding the other statistical requirement. Besides, the Kurtosis and skewness are to show the data is normal or not normal. At the meantime, if the data not normal, the data will go for logarithms (Ln). This study employed static panel data techniques based on fixed effect and random effect models to determine the relationships. As the common procedure all variables were tested the presence of unit root using Levin, Lin and Chu (1994), Breitung (1996) and Im Pasaran and Shin (1998). The general result suggest that all variables was stationary at first order different. In the case of data cannot be pooled the ordinary least square estimator through Newey West heterocedasticity and autocorrelation consistent (HSC) Newey and West 1990. Table 1 shows the list of variables used in this study based on the following empirical model.

$$Ln\ LLP_{it} = \beta_0 + \beta_1 LnEBTP_{it} + \beta_2 LnCAP + \beta_3 LnROA_{it} + \beta_4 LnTL_{it} + \beta_5 LnSZ_{it} + \beta_6 LnLG_{it} + \varepsilon_{it}$$

Table 1: The variable used in the study and expected signs of the coeffcient.

| Variables | Description | Proxies | Expected sign Coefficient |
|---|---|---|---|
| Loan Loss Provision | Loan Loss Provision (LLP) | Total LLP/ Total assets (Anandarijan et al., 2005) | |
| Earning Management | Earnings before tax and provisions (EBTP) | EBTP/Total Assets (Frait & Komarkova, 2013) | Positive (+) |
| Capital Management | Capital Ratio (CAP) | Total Capital/Risk Weighted Assets (Packer & Zhu, 2012) | Negative (-) |
| Bank Specific Variables | Return on Assets (ROA) | Net Profit/Total Assets (Taktak et al 2010) | Negative (-) |
| | Total Loan (TL) | Total Loan/ Total assets (Packer & Zhu, 2012) | Positive (+) |
| | Bank Size (SZ) | Total Assets (Taktak et al, 2010) | Positive (+) |
| | Loan Growth (LG) | Gross Loan Balance Current Year-Gross Loan Balance previous year/Total Assets (Packer & Zhu, 2012) | Positive (+) |

**Findings**

**Malaysia**

Table 2: Descriptive Statistic

| Variable | Mean | SD | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| LLP | 0.5165 | 1.021119 | -1.7300 | 7.5425 | 2.973807 | 17.34148 |
| EBTP | 0.53863 | 1.038929 | -1.7937 | 7.6346 | 2.964492 | 17.09711 |
| CAP | 28.70259 | 152.7634 | 1.6248 | 2064.016 | 13.24855 | 177.0167 |
| ROA | 2.853781 | 4.059324 | -0.77 | 19.6302 | 2.215867 | 7.108988 |
| TL | 1.036166 | 1.327817 | 0.0095 | 5.7389 | 2.665031 | 8.520614 |
| SZ | 109769.1 | 150981.8 | 485.1 | 765301.8 | 2.24768 | 8.144777 |
| LG | -0.9937189 | 2.007405 | -10.2005 | 0.3256 | -1.74026 | 5.131983 |

The descriptive statistic for all variables in Malaysia for period 2009 to 2017 are depicted in table 4.1 to show the characteristics of the data. The mean value of LLP to total assets equal to 0.5176, with the maximum value 7.5425. Other than that, the minimum value of LLP to total assets is equal to -1.7300. The value of standard deviation is 1.021119. The mean value for EBTP to total asset is 0.53863 with the maximum ratio of 7.6346. The mean value for capital to total asset is 28.70259 with the maximum value is 2064.016 and minimum value is 1.6248. The mean value of ROA IS equal to 2.853781, with the maximum value 19.6302. Other than that, the minimum value of ROA is equal to -0.77. The mean value for TL to total asset is 1.036166 with the maximum ratio of 5.7389. The mean value for SZ to total asset is 109769.1 with the maximum ratio of 765301.8. The mean value for LG to total asset is -0.9937189 with the maximum ratio of 0.3256. In addition, the skewness of LLP, EBTP, CAP, ROA, TL and SZ shows that not in the range normality (-/+2), but LG only in the range normality. Besides, the kurtosis of all variable shows that not in the normality range which are more than 2 but less than 3 (exact 3). Generally, all variable shows that not normal and its should be log (ln) to be a normal data.

**Indonesia**

Table 3: Descriptive Statistic

| Variable | Mean | SD | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| LLP | 1.3085 | 2.0326 | -5.33 | 20.63 | 3.7881 | 29.7451 |
| EBTP | 1.3237 | 2.0205 | -5.3098 | 20.4965 | 3.7635 | 29.5533 |
| CAP | 18.1176 | 7.3077 | -4.3306 | 49.7052 | 1.1307 | 5.3474 |
| ROA | 1.190091 | 1.808384 | -10.06 | 4.16 | -2.754761 | 14.51658 |
| TL | 0.6637282 | .0876451 | 0.0469 | 0.8453 | -1.842889 | 10.642 |
| SZ | 9.9800 | 1.9000 | 1425576 | 1.1300 | 3.151953 | 13.47366 |
| LG | 0.0737276 | .273789 | -4.6124 | 0.5986 | -14.32467 | 246.0894 |

The descriptive statistic for all variables in Indonesia for period 2009 to 2017 are depicted in table 4.1 to show the characteristics of the data. The mean value of LLP to total assets equal to 1.3085, with the maximum value 20.63. Meanwhile, the minimum value of LLP to total assets is equal to -5.33. The value of standard deviation is 2. 0326.The mean value for EBTP to total asset is 1.3237 with the maximum ratio of 20.4965. The mean value for capital to total asset is 18.1176 with the maximum value is 49.7052 and minimum value is -4.3306. The mean value for ROA is 1.190091 with the maximum and minimum value is 4.16 and -10.06. The mean value for TL 0.6637282 and the maximum value is 0.8453, minimum value is 0.0469. The mean value for SZ and LG is 9.98e+07 and 0.0737276 respectively. In addition, the skewness of LLP, EBTP, ROA, SZ and LG shows that not in the range normality (-/+2), but CAP only in the range normality. Besides, the kurtosis of all variable shows that not in the normality range which are more than 2 but less than 3 (exact 3). Generally, all variable shows that not normal and its should be log (ln) to be a normal data.

**Malaysia**

Table 4: Regression

| Variables | Pooled OLS | RE | Pooled OLS with Robust |
|---|---|---|---|
| Constant | -1.0457 (0.5070) ** | -1.0457 (0.5070) ** | 0.0005 (0.0014) ** |
| EBTP | 0.3387 (0.2097) | 0.3387 (0.2097) | 0.3387 (0.3663) |
| CAP | 0 .0745 (0.1011) | 0.0745 (0.1011) | 0.0745 (0.0835) |
| ROA | -0.1637 (0.0917) | -0.1637 (0.0917) | -0.1637 (0.1046) |
| TL | 0.1003 (0.1739) | 0.1003 (0.1739) | 0.1003 (0.2441) |
| SZ | -0.2590 (0.1294) ** | -0.2590 (0.1294) ** | -0.2590 (0.1409) |
| LG | 0.3569 (0.1892) | 0.3569 (0.1892) ** | 0.3569 (0.1738) ** |
| $R^2$ | 0.1383 | 0.1193 | 0.1383 |
| Adj. $R^2$ | 0.1045 | | |
| F-statistic | 4.09 (0.0008) | | 4.78 (0.0002) |
| Wald Chi Square | | 24.56 (0.0004) | |
| BPLM test | 0.00 (1.0000) | | |
| Modified Wald (Heteroscedasticity) | 21835.31 (0.0000) | | |
| Wooldridge Test | 21.328 (0.0002) | | |

Based on the result of regression analysis specify in table 4, the BPLM test shows that the p-value is statistically not significant (0.01) which mean failed to reject null-hypothesis and it indicates that the result is Pooled OLS. By selecting the Pooled OLS with the robust standard error and equivalent with Newey West test, it remedies for heteroscedasticity and autocorrelation. The estimation output exhibits that the coefficient of EBTP (0.3387) is positively associated with LLP and apparently it is insignificance at 0.05 significance level at the 0.01 significance level. The coefficient of CAP (0.0745) is positive relationship to LLP and subsequently not significance at 0.05 significance level, while ROA (-0.1637) is negatively relationship to LLP but not significant at 0.05 significance level. The coefficient of TL (0.1003) is positively relationship with LLP and apparently it is not significance at 0.05 significance level. The coefficient of SZ (-0.2590) is negatively relationship with LLP and subsequently it is not significance at 95 percent confidence level. The coefficient of LG (0.3569) is positively relationship with LLP and appears significance at 95 percent confidence level. The p-value of F-statistic pooled OLS with robust is significant (0.0002) and the variables shows fit to the model. Generally, it is concluded that the LLP decision in the Indonesia commercial banks are influenced by the loan growth.

**Indonesia**

Table 5: Regression

| Variables | Pooled OLS | RE | Pooled OLS with Robust |
|---|---|---|---|
| Constant | 0.8016 | 0.8016 | 0.8016 |
| | (0.1506) | (0.1506) *** | (0.3657) ** |
| EBTP | 0.9454 | 0.9454 | 0.9454 |
| | (0.0081) *** | (0.0081) *** | (0.0247) *** |
| CAP | -0.0407 | -0.0407 | -0.0407 |
| | (0.0079) *** | (0.0079) *** | (0.0243) |
| ROA | -0.0557 | -0.0557 | -0.0557 |
| | (0.0136) *** | (0.0136) *** | (0.0204) *** |
| TL | 0.0074 | 0.0074 | 0.0074 |
| | (0.0131) | (0.0131) | (0.0150) |
| SZ | 0.0234 | 0.0234 | 0.0234 |
| | (0.0069) *** | (0.0069) *** | (0.0196) |
| LG | -0.3437 | -0.3437 | -0.3437 |
| | (0.0929) *** | (0.0929) *** | (0.2077) |
| $R^2$ | 0.9804 | 0.9724 | 0.9804 |
| Adj. $R^2$ | 0.9774 | - | |
| F-statistic | 2544.64 | | 404.78 |
| | (0.0000) | | (0.0000) |
| Wald Chi Square | - | 15267.82 | |
| | | (0.0000) | |
| BPLM test | 0.00 | | |
| | (1.0000) | | |
| Modified Wald test | 59861.72 | | |
| | (0.0000) | | |
| Wooldridge Test | 6.180 | | |
| | (0.0174) | | |

Based on the result of regression analysis specify in table 5, the BPLM test shows that the p-value is statistically not significant (0.01) which mean failed to reject null-hypothesis and it indicates that the result is Pooled OLS. By selecting the Pooled OLS with the robust standard error, it remedies for heteroscedasticity and autocorrelation. The estimation output exhibits that the coefficient of EBTP (0.9454) is positively associated with LLP at the 0.01 significance level and the coefficient of ROA (-0.0557) is negatively relationship to LLP and at 0.05 significance level while CAP (-0.0407) is negatively relationship to LLP but not significant. The coefficient of TL (0.0074) is positively relationship with LLP and apparently it is not significance at 0.05 significance level. The coefficient of SZ (0.0234) is positively relationship with LLP and subsequently it is not significance at 95 percent confidence level. The coefficient of LG (-0.3437) is negative relationship with LLP and appears insignificance at 95 percent confidence level. The p-value of F-statistic pooled OLS with robust is significant (0.01) and the variables shows fit to the model. Generally, it is concluded that the LLP decision in the Indonesia commercial banks are influenced by the motivation to manage the earning management and return on assets.

**Discussion and Conclusions**

In a nutshell, loan growth only has the significant positive impact on LLPs in Malaysia. While, in Indonesia shows that earning management has significant positive impact towards LLPs and return on assets has the significant negative impact on LLPs. Accordingly, Malaysia shows that loan growth has to influence the allocation of LLPs and other variables insignificant. Thus, Malaysia have a backup from the government to restructuring back the economy of country. While, in Indonesia the banking institution should manage more factor to spending their allocation of LLPs by bank itself rather than Malaysia.

In Indonesia shows that the earning management has positive impact on allocation of LLPs, it depicted that the result is consistent to the theory of earning management ( Abdullah, Bujang, Ahmad, April 2016)(Ben Othman & Mersni, 2014)(Packer & Zhu, 2012). While, in Malaysia reveal that the earning management has insignificant relationship towards LLPs and it convey that the result not follow to the theory of earning management but appear supported by (Wetmore & Brick, 1994;Taktak et al., 2010)(Ahmed et al., 1999).

In Indonesia, return on asset is significant negative impact on LLPs decision which is return on asset give impact on allocation of LLPs in Indonesia supported by (F.A. Misman, W. Ahmed, 2011) ( Abdullah, Bujang, Ahmad, April 2016). While, In Malaysia return on assets is not significant which are in Malaysia have a backup from the government to cover up the losses.

**Limitation and Recommendation**

The limitation of this study is the data constraint which reduction number of banks selected that have inconsistent data would be eliminated, the data has been expired by the company or being block in the website, excluding macroeconomic variables and excluding the policy and rules regulation n of each country. This study recommends for the future researcher to include the external factor and held segregation based on portfolio size policy.

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# An evaluation of social management in Spanish credit unions during the banking crisis

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**Key words**
Credit unions, Social management, Efficiency, Two-stage double bootstrap DEA method, Spanish banking crisis.

**Abstract**

*Credit unions are financial companies of the Social Economy. They have, therefore, a dual nature. On the one hand, they are financial entities alongside banks and savings banks. On the other, they are cooperatives, characterised by their social responsibility and commitment to the local development. Traditionally, due to this social activity, they have been considered less efficient than commercial banks. However, if they want to be competitive and guarantee survival and growth in the future, they must seek efficiency, especially in times of crisis. Despite this, there are very few studies on their level of efficiency and practically none for the period of crisis. In addition, almost all of them evaluate exclusively their management of the banking activity, without taking into account their social function. In this context, our work contributes by analysing the relative level of social efficiency in Spanish credit unions during the last economic crisis, as well as its main determinants. To do this, it applies both the DEA methodology and a truncated regression from a sample of 446 observations, related to the totality of active entities in Spain between 2008 and 2013. Our results suggest that Spanish credit unions managed their ethical and social behavior quite well during the crisis period as they achieved a good level of social efficiency, benefiting both to their members and local community. The findings also show that, in addition to a regional effect, the size, the capitalization rate and the number of branches of credit unions had a statistically significant positive impact on their social management, whereas the proportion of branches in urban areas had a negative impact. These results are useful for policy makers and managers of credit unions in order to direct future decision-making towards improving their economic and social impact.*

## 1. Introduction

Credit unions are Social Economy enterprises that develop a relevant social function in the Spanish banking system, with a double mission (Server and Capó-Vicedo, 2011). These entities, in application of Law 13/1989 of 26 May on Credit Unions, are defined as "*cooperative societies, which have their own legal status, and aim to meet the financial needs of their members and of third parties by performing the activities of credit entities*". These societies, therefore, have a dual nature: One the one hand, they are banking organisations that must get financial results to distribute among their cooperative members and, on the other hand, they are cooperatives that must obtain resources to develop their social work.

Over recent years, social enterprises have been attracting increasing interest among the academic community (Battilana et al., 2015; Ramus and Vaccaro, 2015). In particular, credit unions are becoming more and more popular in many developed countries – United States, Canada, Australia, Japan, France, Germany and Italy, among others –, although their importance is linked to the type of activity they develop, financing a large range of social enterprises (Glass et al., 2014), promoting financial inclusion of the territories where they are established and contributing to the development of the financial sector by meeting some needs that are not covered by other banking intermediaries and by increasing free competition within it (Kalmi, 2012).

However, given the social purpose that characterizes credit cooperatives, their efficiency in relation to commercial banks has been questioned (Ory and Lemzeri, 2012; Othman et al., 2014). However, given that they are also financial companies, being competitive and efficient are essential requirements, especially in times of crisis (Gutiérrez and Palomo, 2012; Wijesiri et al., 2015), such as those that occurred between 2008 and 2013 in the Spanish banking scenario. And surprisingly, while the banks and saving

banks faced a deep restructuring and recapitalization process, the credit unions have been able to stabilize their sales volumes and reduce their levels of bank default, remaining practically unaffected by recent crisis.

Nevertheless, have been practically no studies, either national or international, on their efficiency, and the existing studies only measure efficiency from the financial point of view, without considering their social aims. For these reasons, this study aims to meet the following objectives: to estimate relative levels of social efficiency in Spanish credit unions during the recent financial crisis (2008-2013) and to analyse the determinants of the social efficiency achieved by such entities in the study period.

To achieve these objectives, we used the two-stage double bootstrap Data Envelopment Analysis (DEA) methodology developed by Simar and Wilson (2007). In the first stage, the relative efficiency indices are calculated using the DEA-bootstrap approach, which allows them to be corrected using a homogeneous re-sampling process and, in the second, truncated bootstrap regression is applied, in which the corrected estimators of efficiency are regressed on a set of explanatory variables.

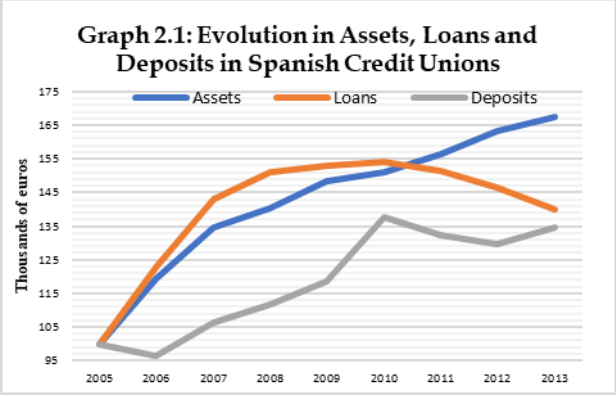
**2. Credit unions during the Spanish banking crisis (2008-2013)**

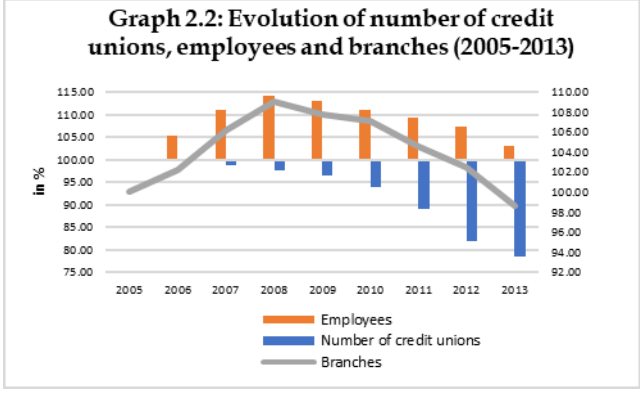
Banking sector is essential to determine the level of access to credit in financing productive activities for all economies. Credit unions take share of Spanish banking system, along with the private banks and saving banks, but there are characterised by a dual nature, being as they are financial enterprises in the Social Economy.

In Spain, until the financial crisis, there was no doubt about the solvency and the strength of all types of Spanish banking entities. But, since then, unlike most savings banks and some non-internationalized banks, that have been managed in such a way that their annual accounts have become very vulnerable, as there has been a significant reduction in their activity and ordinary margins, generating a deep process of financial consolidation, recapitalization and restructuring, which has required public support, both Community and national aid.

In the middle of this unbalanced Spanish banking scenario, the credit unions stands out, following an acquitted evolution (Fajardo and Soler, 2015), with bank margins that have shown a greater resilience, increases in their deposits and consolidation in assets (graph 2.1), which has enabled them to strengthen their solvency and increase market share.

However, these entities have carried out a voluntary concentration process, without needing financial public aid, through Institutional Protection Systems (SIPs), conventional mergers and splits and assignment of liabilities and assets (Fajardo and Soler,2015). Consequently, as the graph 2.2 shows, the number of cooperatives dropped by 21,68%(from 83 to 65 entities) between 2005 and 2013, but without losing their identity. This led a slight decrease in number of employees and branches, taking place the main deterioration between 2011 and 2013, at the same time as the largest reduction in the number of cooperatives.




Source: Authors´ own elaboration with data from the UNACC (2005,2008,2013), Asociación Española de Banca (2005, 2010, 2013), Boletín of Banco de España (2008) and Confederación Española de Cajas de Ahorros (2005, 2010, 2013). All data come from individual financial statements. 2005= base 100.

Note: Since 2010 include electronic banking and unclassified data on loans and deposits.

This good progress made by Spanish credit unions stems from certain factors that differentiate them from other financial entities. We find in its local and territorial nature a basic example that consolidates the social vocation that these entities have demonstrated during this challenging period. In addition, their retail and traditional business, limits its exposure to risk and leads to less dependence on financial markets, minimizing the use of complex financial engineering instruments (Gutierrez and Palomo, 2012: Fajardo and Soler, 2015). Futhermore, its democratic corporate governance promotes entrepreneurship and finances socially responsible investments (Castello and Trias, 2015). And finally, we want to emphasize, as indicated by the IMF (International Monetary Fund, 2010), which offer the better one and more reliable coverage to the more modest economies, at risk of financial inclusion.

**3. Efficiency in Credit unions: background and determinants**

Efficiency in the financial sector can be defined as the degree of optimisation achieved in the use of physical, human and monetary resources for providing different financial services. In recent years, many studies have been carried out on the measurement of efficiency in this sector, both internationally (Casu and Girardone, 2010; Curi et al., 2012; Chortareas et al., 2013; Wanke and Barros, 2014; Moradi-Motlagh et al., 2015) and in Spain (Tortosa-Ausina et al., 2008; Escobar and Guzman, 2010; Torres et al., 2012). However, practically all of them have focused on financial entities that have a strictly commercial aim – banks and savings banks – and there is very little evidence on credit unions, in spite of their growing popularity.

Furthermore, the studies about credit unions are focused on the financial efficiency (Worthington, 1999; Fried et al., 1993, 1999; Ralston et al., 2001; Fortin and Leclerc, 2011; Glass et al., 2014), and there are not academic contributions from the social point of view. As far as we know, only Belmonte and Plaza (2008) and Belmonte (2012) have considered the global efficiency (financial and social) of Spanish credit unions. Following Fortin and Leclerc (2011), we have chosen certain explanatory factors of the efficiency/inefficiency of credit unions:

*Wealth level in the place where credit unions operate:* From a theoretical point of view, greater wealth in the location of the financial entities increases their efficiency in their different activities, because it allows them to improve the relation between the various services provided and the factors used to provide them (Curi et al., 2012). Some empirical studies confirm the existence of a positive, statistically significant relation between this variable and financial efficiency of credit unions (Fried et al., 1999; Fortin and Leclerc, 2011).

*Urban concentration:* According to the literature, as a banking entity increases its degree of urban concentration, the number of competitors will increase, enlarging its pressure to improve financial efficiency. Fortin and Leclerc (2011) demonstrated that the concentration of the services of credit unions in cities with greater population density has a statistically significant positive effect on their efficiency. But it can also be expected that a greater concentration of credit cooperatives in urban areas reduces their social efficiency, since this will go against their territorial nature, which is based on helping to achieve financial inclusion for the entire population.

*Size:* In theory, in principle, the largest financial institutions tend to be more efficient since they benefit from the returns to scale in their business. Consequently, they have more possibilities to minimize the use of inputs and / or maximize the supply of products, taking into account the optimum production frontier (Wanke and Barros, 2014). The existing empirical evidence corroborates that the size of savings and credit cooperatives has a positive and significant effect on their levels of financial efficiency, contributing to improve the management of these entities (Worthington, 1999; Fried et al., 1993; 1999; Fortin and Leclerc, 2011; Glass et al., 2014).

*Capital adequacy:* From a theoretical point of view, financial institutions that capitalize a greater amount of their profits are more efficient, especially during periods of economic and social recessions. According to empirical evidence, most studies show a positive and significant relationship between the capitalization rate of credit cooperatives and their financial efficiency (Worthington, 1998b, Fried et al., 1999, Fortin and Leclerc, 2011).

*Number of service points:* In principle, it can be assumed that the number of branches has a negative effect on the ability of the central office to promote efficient behavior. But, from a social perspective, service points are another of the products offered by financial institutions, which results in a positive

effect for their efficiency. The empirical literature shows a significant negative relationship between this variable and the financial efficiency of credit unions (Worthington, 1998b, Fortin and Leclerc, 2011).

## 4 Methodology, sample and variables

### Methodology

A two-stage double bootstrap DEA approach, concretely, the Algorithm 2 developed by Simar and Wilson (2007), is the methodology which apply in this analysis:

In the first stage of the study, we use the DEA model, in combination with the homogeneous bootstrap procedure to obtain useful efficiency scores and confidence intervals. DEA is a non-parametric method that evaluates the relative efficiency of a set of similar DMUs. Basically, it identifies the DMUs that represent best practices by comparing each DMU with all possible linear combinations of other units. Furthermore, we apply the output-oriented DEA model under the variable returns to scale (VRS). Specifically, we use the following linear program:

$\hat{\delta}_i = max_{\hat{\delta}_i,\lambda}\{\delta > 0 | \hat{\delta}_i y_i \leq \sum_{i=1}^{n} y_i \lambda; x_i \geq \sum_{i=1}^{n} x_i \lambda; \sum_{i=1}^{n} \lambda_i = 1; \lambda \geq 0\}$; i=1, ., n DMUs

$y_i$ *is a vector of outputs;*

$x_i$ *is a vector of inputs;*

$\lambda$ *is an n x 1 vector of constants which measures the weights used to compute the location of an inefficient DMU with the objective to become efficient;*

$\hat{\delta}_i$ *is the efficiency or inefficiency score for the ith DMU under the VRS assumption.*

*If* $\hat{\delta}_i = 1$, *the ith DMU is fully efficient*

*If* $\hat{\delta}_i < 1$, *the ith DMU is relatively inefficient.*

In the second stage of this work, we use a truncated regression model to examine the determinants of social efficiency:

$$\tilde{\delta}_i = \alpha + \beta_1 WEA_{i,t} + \beta_2 \mathrm{URB}_{i,t} + \beta_3 \ln(SIZ)_{i,t} + \beta_4 CAP_{i,t} + \beta_5 \ln(SER)_{i,t} + \varepsilon_i$$

$\tilde{\delta}_i$*the dependent variable, refers to the efficiency score from the first stage of the ith DMU;*

$\alpha$ *is a constant term;*

$\beta_1, \beta_2, \ldots \beta_6$ *are the parameters to be estimated;*

$WEA_{i,t}$ *is the wealth level in the environment of the ith DMU in period t;*

$URB_{i,t}$ *is the urban concentration of the ith DMU in period t;*

$SIZ_{i,t}$ *is the size of the ith DMU in period t;*

$CAP_{i,t}$ *is the capital adequacy of the ith DMU in period t;*

$SER_{i,t}$ *is the number of service points of the ith DMU in period t;*

*and* $\varepsilon_i$ *is an error term.*

### Sample

Our population consists of all credit unions linked to UNACC between 2008 and 2013, the period in which the last Spanish crisis occurred. However, due to the process of voluntary concentration and restructuration between Spanish credit cooperatives during this period, an unbalanced data panel is used in the analysis, which comprise a total of 446 DMUs or observations (81 in 2008, 80 in 2009, 78 in 2010, 74 in 2011, 68 in 2012 and 65 in 2013).

### Input and output variables

Our specification of the input and output variables takes as its point of reference the designation used by Belmonte (2012) and Glass et al. (2014), including social outputs in the model. Specifically, the inputs chosen are amortisation expenses, personnel expenses, and interest expenses; and social outputs are the degree of customer socialisation and the financial inclusion. We explain below how these variables are measured based on prior research. The source of information for building them are the Statistical Yearbooks of Credit Unions published by UNACC (www.unacc.com). Data given in monetary units are deflated – at constant prices for 2008 – using the GDP deflator, in order to avoid inflation-related distortion of the results.

*Input variables:* In general, there are three sources of inputs involved in social activity of credit unions: physical, human, and financial resources.

*Amortisation Expenses* (AMOR): This variable refers to the annual cost of fixed-capital consumption related the activity carried out by credit unions (in thousands of euros). It is a relevant input for their business, which is based on a direct distribution model through many branches. Thus, they are a disadvantage compared to commercial banks, which are able to use new distribution channels more, with lower amortisation costs.

*Personnel Expenses* (PERS)*:* This is an indicator of the annual cost of the human resources used by credit unions in order to perform their activity (in thousands of euros). Workers are the main input in any banking activity, which essentially sells a service. Human resources therefore have a key role to play in customers' final decisions. So, even though banking sales channels have expanded to include electronic and telephone banking, the traditional channel is still the main one used by credit unions. It is labour-intensive, is based in branches and involves direct relations between employees and customers.

*Interest Expenses* (INTE): This covers the cost of the financial resources captured at retail level (the annual cost of deposits, measured in thousands of euros). The basic activity of any financial entity, including credit unions, is to collect deposits to product loans.

*Social output variables:* The measurement of social efficiency in credit unions requires defining two outputs:

*Customer Socialization* (CSOC): This variable represents the relative importance of loan investment activity over the social mass of credit unions. It is defined as the ratio between loans to customers and the total number of members (in thousands of euros per member). Since credit unions are distinguished from other financial institutions by the weight of member customers over total customers, this output reflects the orientation of their asset operations towards the social mass.

*Financial Inclusion* (FINC): This is an indicator of the presence of credit unions in districts with low population. It is measured by the ratio between the number of branches in municipalities having less than 25,000 inhabitants and total branches (in %).

**Social efficiency determinants**

Finally, to establish the determinants of efficiency/inefficiency in Spanish credit unions, we have use five explanatory variables following Fortin and Leclerc (2011). They are elaborated taking into account the statistical yearbooks of the credit cooperatives, which are available on the UNACC website (www.unacc.com):

*Wealth Level in the Place where credit unions operate* (WEA): This variable is quantified by the ratio between total deposits and the number of members of credit unions (in thousands euros per member), assuming that the higher the relation, the greater the volume of savings of customers and, therefore, the level of wealth in the district of the entity (Fried et al., 1999; Fortin and Leclerc, 2011).

*Urban Concentration* (URB): This is measured by a dummy that takes the value of 1 when the proportion of branches in municipalities, with more than 25,000 inhabitants, over the total is greater than the annual average for all the credit unions analysed, and 0 otherwise.

*Size* (SIZ): This is made operational by total assets of credit unions (in thousands of euros, with logarithmic transformation for the statistical analysis) (Worthington, 1999, 2010; Fried et al., 1993; 1999; Ralston et al., 2001; Fortin and Leclerc, 2011; Glass et al., 2014).

*Capital Adequacy* (CAP): This is measured by the proportion of equity to total assets (in %), so that, the higher the ratio, the lower the financial leverage and therefore the lower the financial risk of credit unions (Worthington, 1999; Fried et al., 1993; 1999; Fortin and Leclerc, 2011; Glass et al., 2014).

*Number of Branches* (BRA): This variable captures the total number of branches that credit unions have, with logarithmic transformation for the statistical analysis (Worthington, 1999; Fried et al., 1999; Ralston et al., 2001; Fortin and Leclerc, 2011).

Finally, although all Spanish credit unions belong to the same financial sub-sector and operate in the same country, the heterogeneity existing between the different regions, especially in terms of regulations and macroeconomic conditions, might also help explain the differences in their efficiency. Several studies have shown that there is a "*Regional Effect*", which suggests that the efficiency of these entities varies depending on their geographical location within a specific country (Worthington, 1998b, 1999; Fried et al., 1993; Glass et al., 2014). Since the credit unions analysed here are located in 15 of the

Spanish regions (Andalusia, Aragon, Asturias, Castile-La Mancha, Castile and Leon, Catalonia, Valencian Community, Extremadura, Galicia, Balearic Islands, Canary Islands, Madrid, Murcia, Navarre and Basque Country), this study also takes into account their location (REG) by including 14 regional dummy variables (taking the Valencian Community as the reference category as it is the region with the largest number of such entities).

**5. Empirical results**

The main descriptive statistics for the input and output variables considered in the study and for the variables used to measure the determinants of efficiency are summarised in the Table 1. It also gives the Pearson correlation coefficients between the latter when measured using a continuous variable. It shows that there is a high positive and statistically significant correlation between size (SIZ) and the number of branches (BRA). To avoid problems of multicollinearity, in the second stage truncated regression analyses, these two variables are introduced in separate regressions, together with the other explanatory factors.

Table 1: Descriptive statistics and correlations

| n=446 DMUs | Mean | Std.Dev. | Minimum | | Maximum | |
|---|---|---|---|---|---|---|
| Efficiency determinants | | | | | | |
| WEA | 341.28 | 1,816.63 | 1 | WEA | 341.28 | 1,816.63 |
| URB | 0.61 | 0.49 | WEA | SIZE | CAP | SER |
| SIZ | 1,676,243.11 | 4,612,834.16 | 0.134 | 1 | | |
| CAP | 9.40 | 4.27 | -0.141 | -0.166 | 1 | |
| BRA | 66.83 | 147.43 | 0.054 | 0.934*** | -0.193 | 1 |

| n=446 DMUs | Mean | Std.Dev. | Minimum | Maximum |
|---|---|---|---|---|
| Input variables | | | | |
| PERS | 12,586.01 | 31,131.46 | 139 | 295,192 |
| AMOR | 1,901.75 | 6,040.97 | 3 | 75,772 |
| INTE | 30,237.74 | 86,234.80 | 108 | 864,536 |
| Output variables | | | | |
| CSOC | 280.15 | 1,616.67 | 4.66 | 18,352.35 |
| FINC | 64.65 | 37.28 | 0 | 100 |

PERS: Personnel Expenses (in thousands euros); AMOR: Amortisation Expenses (in thousands euros); INTE: Interest Expenses (in thousands euros); LOAN: Total Loans (in thousands euros); SECU: Security Investments (in thousands euros); CSOC: Customer Socialization (in thousands euros / member); FINC: Financial Inclusion (in %); URB: Urban Concentration (dummy: 1/0); WEA: Wealth Level in the Place (in thousands euros / member); SIZ: Size (in thousands euros); CAP: Capital Adequacy (in %); BRA: Number of Branches (in units). *** Significant at the 1% level (2-tailed).

**First Stage: Social efficiency measures**

The *first stage* results reveal social efficiency measures throughout the period 2008-2013 and are summarised on the Table 2. It shows the percentage of fully efficient DMUs, the mean and standard deviation of the original, corrected, and useful efficiency estimates in the total period and in each of the years considered. The mean scores of corrected efficiency $(\hat{\hat{\delta}})$ are always lower than those of original efficiency $(\hat{\delta})$, with the useful efficiency values lying in an intermediate position $(\tilde{\delta})$. As these last scores are the closest to real efficiency, they are the ones that are considered for interpreting the results.

The mean score for the social efficiency of Spanish credit unions, over the total period analysed, reaches an acceptable value of 65.78% (50% is the minimum acceptable value for estimates of technical efficiency). Thus, in order to be fully efficient $(\tilde{\delta} = 1)$, these entities should have increased their social outputs by 34.22% given the resources at their disposal.

If the analysis is performed by year, the social efficiency, although it reaches significantly higher average annual values, is relatively stable during the six-year period studied and even shows a slight drop of 1.61 percentage points – about -2.5% – from 65.89% in 2008 to 64.28% in 2013. Therefore, although Spanish credit unions carry out the social function better than the banking activity with the same inputs, their social efficiency remains practically constant.

Table 2: DEA social efficiency estimates

| | Original $\hat{\delta}$ | Corrected $\hat{\hat{\delta}}$ | Useful $\tilde{\delta}$ |
|---|---|---|---|
| Period 2008-2013 (n=446 DMUs) | | | |
| Mean | 0.6580 | 0.6490 | 0.6578 |
| Std.Dev. | 0.3677 | 0.3618 | 0.3676 |
| Fully efficient DMUs (%) | 36.77% | 0.00% | 36.55% |
| Year 2008 (n=81 DMUs) | | | |
| Mean | 0.6590 | 0.6512 | 0.6589 |
| Std.Dev. | 0.3672 | 0.3624 | 0.3673 |
| Fully efficient DMUs (%) | 24.69% | 0.00% | 35.80% |
| Year 2009 (n=80 DMUs) | | | |
| Mean | 0.6686 | 0.6627 | 0.6686 |
| Std.Dev. | 0.3602 | 0.3567 | 0.3602 |
| Fully efficient DMUs (%) | 36.25% | 0.00% | 36.25% |
| Year 2010 (n=78 DMUs) | | | |
| Mean | 0.6709 | 0.6592 | 0.6697 |
| Std.Dev. | 0.3618 | 0.3545 | 0.3609 |
| Fully efficient DMUs (%) | 37.18% | 0.00% | 35.90% |
| Year 2011 (n=74 DMUs) | | | |
| Mean | 0.6493 | 0.6410 | 0.6492 |
| Std.Dev. | 0.3746 | 0.3685 | 0.3747 |
| Fully efficient DMUs (%) | 36.49% | 0.00% | 36.49% |
| Year 2012 (n=68 DMUs) | | | |
| Mean | 0.6539 | 0.6440 | 0.6538 |
| Std.Dev. | 0.3780 | 0.3711 | 0.3780 |
| Fully efficient DMUs (%) | 38.24% | 0.00% | 38.24% |
| Year 2013 (n=65 DMUs) | | | |
| Mean | 0.6428 | 0.6318 | 0.6428 |
| Std.Dev. | 0.3792 | 0.3714 | 0.3792 |
| Fully efficient DMUs (%) | 36.92% | 0.00% | 36.92% |

$\hat{\delta}$: Original efficiency estimates; $\hat{\hat{\delta}}$: Bias-corrected efficiency estimates; $\tilde{\delta}$: Useful efficiency estimates.

**Second Stage: Determinants of Social efficiency**

Regarding *the second stage*, the results from the bootstrap truncated regression to establish the determinants of social efficiency in the period 2008-2013 are regressed on the six explanatory variables. They are shown on the Table 3.

The findings show a statistically significant negative impact of the urban concentration of credit unions ($\mathbf{URB}$), indicating that those entities with a greater proportion of branches in urban areas are less socially efficient. Their size ($SIZ$) also has a statistically relevant impact so that, the larger the credit union is, the greater its capacity for achieving its social purpose with the available resources. Similarly, the capitalisation rate ($CAP$) shows positive and significant coefficients, suggesting that entities with higher capitalisation achieve a better social performance. The number of branches ($BRA$) also has a positive and significant impact, so that credit unions with a larger number of branches seem to manage their social activity better, obtaining a higher level of social outputs from the resources at their disposal. Finally, the results obtained also suggest the importance of the "regional effect" ($REG$) for the social efficiency of credit unions.

Table 3: Bootstrap truncated regression

| Variable | ß (Bootstr. Stand. Error) | |
|---|---|---|
| Constant (α) | -1.1601<br>(0.1389) | -0.1644***<br>(0.0462) |
| URB | -0.5243*** (0.0390) | -0.4534***<br>(0.0360) |
| WEA | 0.0000<br>(0.0000) | 0.0000<br>(0.0000) |
| CAP | 0.0083* | 0.0095** |

| | | |
|---|---|---|
| | (0.0049) | (0.0045) |
| SIZ | 0.0981*** (0.0101) | |
| BRA | | 0.1025*** (0.0071) |
| REG (Regional dummies) | Yes*** | Yes*** |
| Sigma | 0.1511*** (0.0061) | 0.1357*** (0.0061) |
| Log likelihood | 168.9484 | 191.7133 |
| Wald $\chi^2$(18) | 4894.51*** | 11349.97*** |

URB: Urban Concentration (dummy: 1/0); WEA: Wealth Level in the Place (in thousands euros /member); SIZ: Size (in thousands euros); CAP: Capital Adequacy (in %); BRA: Number of Branches (in units); REG: 14 regional dummies to control for the regional location within Spain.

Total number of repetitions = 2000.

*** Significant at the 1% level; ** Significant at the 5% level; * Significant at the 10% level.

## 6. Conclusions

Despite credit unions are financial institutions that meet a relevant social function in the Spanish banking system, there are very few studies about their social efficiency and practically none during the Spanish banking crisis. Therefore, our study aims two objectives. On the one hand, to estimate the relative levels of social efficiency of Spanish credit unions between 2008 and 2013, and in the other, to establish their main determinants.

Regarding the *first objective*, the relative level of social efficiency in Spanish credit unions has reached a score of 66% during the period 2008-2013 so, to be fully efficient, such entities should have increased their social outputs from available resources by 34%. Consequently, during the last economic and financial crisis, Spanish credit unions have managed appropriately their social function. The crisis situation does not have affected the social outputs of Spanish credit unions, possibly because their main mission is not to maximise profits, as in commercial banks, but to achieve a social purpose, primarily that of meeting the financial needs of their members and of those geographical areas in which other financial entities do not provide services because of the sparse population.

About the *second objective*, our results show that a greater proportion of branches of credit unions in urban areas make them less efficient at the social level. That is, when Spanish credit unions concentrate their branches in urban areas, their social efficiency is reduced, contributing to generating greater financial exclusion in areas of low population density. These results confirm the specialisation in their home territory, close to their customers, which differentiates it from the rest of the financial entities, and which is contributing to reduce the risk of small municipalities being excluded from financial activity.

In addition, social efficiency varies significantly depending on the regional location of credit unions in Spain. The regulatory and institutional framework of Castile and León, the Canary Islands and Madrid might enable their credit unions to be more efficient socially. However, in Catalonia has a lower level of social efficiency.

Finally, there are three internal characteristics of Spanish credit unions – size, capital adequacy and number of branches – that benefit its members and the other territorial agents in the territory in which it operates, by reaching higher levels of social efficiency. Therefore, to the extent that entities reach a larger size, there will be more possibilities for them to benefit from increasing returns to scale, which is why their capacity to optimize social outcomes. Also, the credit unions that capitalise a larger amount of profit will be more socially efficient because a greater availability of funds will lead to lower financial risk and, consequently, will facilitate their social function. Finally, the social efficiency of the credit unions will be greater as they have a greater number of branches, since their service network will be greater, serving a greater number of social services, families and companies in the small cities where they tend to establish.

## 7. References

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# Liquidity Issues in Indian banking system due to non-performing assets: searching alternatives in fiscal deficit and or interest rates

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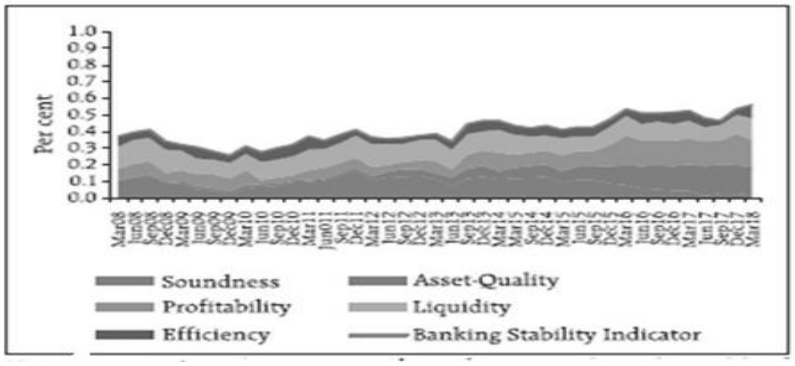
**Keywords**
Fiscal Deficit, Joint Optimization, Liquidity gap, NPA, Ricardian equivalence, Threshold Auto Regression (TAR)

**Abstract**

*The Non-Performing Assets (NPA) in Indian banks had crossed 11%of the total loan outstanding in the year2018, causing liquidity concerns for the Indian banking system. The supply of money to bridge the liquidity gap may be made through two routes, 1) By infusing capital into banks by the government (even at the cost of expanding fiscal deficit),2) Raising interest rates by banks. However, both the routes will have negative impact on the economic growth of India (through Wealth, Trade and Keynesian effects). The challenge is to minimize this negative impact while bridging the liquidity Gap. This study addresses the issue in 3stages.1) Study the Fiscal Deficit and Interest rates on Liquidity gap and the Impact of Interest rates, Fiscal deficit on Economic Growth by applying Econometric methods 2) Based on inputs provided by the causality analysis, interventions on Fiscal deficit and Interest rates shall be designed so as to bridge the liquidity gap and minimize the negative impact on the economic growth of the country using calculus. 3) The work further tests for the Ricardian equivalence of funding the fiscal deficit through debt or interim taxes, by applying Econometric methods and explore reasons in case contradictory observations are found. It is found that fiscal deficit has no significant impact on liquidity deficit of Indian banking system while interest rates on deposits have their impact. Fiscal deficit, Taxes and interest rates have negative impact on economic growth. Contradicting Ricardian equivalence debt of government has positive effect showing that borrowings by government are net wealth to the economy. One solution to liquidity deficit could be that government can borrow money and lend to banks in their productive business venture which could create surpluses that deal with losses stemming from the existing nonperforming assets. The findings will help policy makers in addressing the NPA issues more effectively.*

## Introduction

The Indian banking system facing an escalating Non-Performing Asset problem is being exposed to liquidity risk in gradual increasing manner as noted by Bawa.et.al (2019). The findings of Bawa et al (2019) are corroborated by the "Financial Stability Report" published by Reserve Bank of India in July 2018. The liquidity risk in the banking sector is on continuous rise since March 2013 and the quantum of risk contributed by asset quality to the overall risk is also found to be on the rise during the same period. (SeeTable-1)




Tabel-1-Stability Indicators of Indian Banking System-2018

Source: Reserve Bank of India

* Note: Increase in indicator value Shows lower stability. The width of each Dimension signifies its contribution towards risk.

If such a correlation is found to be true, the government and the banking system must inject liquidity into the system to deal with the liquidity shock arising out of NPA. Existing literature and repository of banking interventions show that there are three ways to solve the issue. 1) Expand Fiscal deficit and inject liquidity into the Banking System. The role of fiscal interventions to ease liquidity crisis has been highlighted by the works of Keynes (1936). Niemann and Pichler (2017) talk about the role of Public debt in tax smoothing and as an instrument to provide liquidity when needed thereby reducing the friction in economy 2) Banks themselves can attract more funds from other capital markets by raising interest rates for a longer period locking.(Liquidity Preference Theory Keynes-1936) 3) Liquidate near liquid assets. Banks could reduce their current asset holdings under Statutory Liquid Ratio (SLR) to increase liquidity. As on March 31-2018 the holdings of all scheduled commercials banks under SLR was around 30 percent of demand term liabilities.(Liabilities and Assets of Scheduled Commercial Banks of India RBI -2018).This 30 percent was against the mandated 19.5 percent (weekly statistical supplement Reserve Bank of India 2019) which shows the holdings under SLR in scheduled commercial banks was in excess of 10 percent of the mandated requirements. If the banks choose to reduce their current holdings in SLR to increase liquidity than High quality liquid assets (HQLA) will reduce thereby sustaining the vulnerability on Liquidity front. In move that is similar to the one discussed in this category the reserve bank of India brought5 billion USD by pumping liquidity to the tune of ₹345Billion into banking system (RBI Rupee Dollar SWAP notification-March2019). But such interventions may become unsustainable as the sellers of dollars in the swap will have to square their position by the end of three years as per the agreement, which will suck out rupee from the banking system. The government on the other hand can bridge the expanded fiscal deficit in 2 ways a) by rising interim taxes b) through debt. Ricardian Equivalence says that the choice does not impact the net aggregate national wealth (Barro-1974). Whichever the way the Fiscal Deficit is bridged, it is bound to have negative impact of the growth of Indian economy through Keynesian effect (As prices increase they create upward pressure on interest rates leading to reduction of investments as cost of money goes up), Wealth effect (As prices go up consumption is bound to come down), Trade effect (Increase in prices encourages substitution by import). Rise in Interest rates too has similar negative impact in the national economic growth. The challenge therefore is to minimize this negative impact while bridging the liquidity Gap. This study would address the issue in 2 stages.1) Study the causality amongst NPA, Liquidity gap, Indian Economic Growth, Interest rates, Fiscal deficit, using Econometric models. 2) Based on inputs provided by the causality analysis interventions on fiscal deficit and Interest rates shall be designed so as to bridge the liquidity gap and minimize the negative impact on the economic growth of the country. The work would further test the Ricardian equivalence of funding the fiscal deficit through public debt or taxes and explore reasons in case contradictory observations are found.

**Literature Review**

The existing body of literature shows what factors in the banking system have contributed to liquidity crisis and what are its repercussions, suggestions on how to deal with it. Such literature can be broadly classified into four categories. 1) Factors contributing to liquidity crisis and repercussions 2) Monetary policy solutions 3) Fiscal policy solutions 4) Joint solutions.

**Literature around factors and repercussions of liquidity risk/crisis**

The impact of economic crisis on public debt management in Croatia is discussed by Badurina and Švaljek (2012) inferring that fiscal stimulus provided to deal with economic crisis have further distorted the fiscal imbalances. They infer interrelation between currency liquidity and interest rate risk of Croatia. Karilaid, Talpseppand and Vaarmets (2014) talk about the implication of liquidity crisis on fiscal and monetary policy, but do not discuss the optimal balance of the 2 policies in dealing with the problem. They merely record the response of the reactions in terms of policy but do not analyze why the reaction happened the way and which is the optimal way. They observe that change in Interest rates, Money supply and GDP have been so fast in the crisis period that there was no time for gradual restructuring of the economy to deal with the problem. The postulate that NPA exacerbates liquidity problems is tested and confirmed in Bosnia and Herzegovina by Almir and Cho (2015), contradictory to this finding, Ahmad

Al-Harbi (2017) explores the factors that influence liquidity in the geopolitical context of Islamic Countries and infers that credit risk is not a strong predictor of liquidity risk as much as off balance sheet activity is. Mohammadi and Anvari (2017) discuss the impact of liquidity and credit risk on productivity and efficiency of the banks. These works are limited to the factors that influence liquidity risk and the fiscal and monetary repercussions of such risks. These works however, do not discuss conscious interventions to address the problem of liquidity deficit, nor do they discuss the repercussions of such interventions.

**The fiscal policy View**

Niemann and Pichler (2017) talk about the role of Public debt in tax smoothing and as an instrument to provide liquidity when needed thereby reducing the friction in economy. Debt positions in terms national output are sustainable in spite of default options. When default happens, liquidity is impaired. The work finds that moderate levels of debt has positive impact on welfare function provided that government bonds are used as collateral for business with high returns on investment. This work refers about liquidity outside banking system, where as our focus is liquidity in banking system. Piergallini (2017) infers that fiscal policy need not be unsustainable to deal with liquidity issues while avoiding disinflation that are convergent to zero liquidity problem.

**The monetary policy views**

Moumni and Nahhal (2014) discuss how liquidity can impact the efficiency of monetary policy transmission but does not discuss how monetary policy influences liquidity in banking system. They also infer in Morocco market that monetary policy transmission is inversely related to the liquidity i.e. less efficient in excess liquidity whereas liquidity shortage makes monetary policy more efficient.

**Joint optimization**

Arouba and Chugh (2010) study that when friction for liquidity raises the value of money, Friedman rule (Friedman rule in 1969 advocates Nominal interest rates to be zero for the economy to be socially optimal) is not optimal and long-term capital income tax is not zero. Niemann (2011) observes "For environments where a non-negative steady state level of government debt (assets) emerges in the absence of conservatism and impatience, monetary conservatism induces accumulation of a higher stock of liabilities (assets) and has adverse (positive) welfare implications". In this work the objective of optimization is welfare rather than economic growth. The optimal balance of fiscal and monetary policies has been discussed by Bi and Kumhof (2011) where such a trade-off had to be made when the liquidity of agents in the economic system were constrained. The objective of the work was to maximize the welfare of the given liquidity constraints by making interventions in fiscal and monetary policy. The work further studied the effect of fiscal policy intervention on the welfare of both the kinds of households who are either constrained or not constrained by liquidity. Interventions on Fiscal policy had bigger effect as per the paper. In an earlier but similar study by the same authors, Bi and Kumhof (2009), the constraint was borrowing instead of liquidity with rest all parameters being the same. Cui (2016) uses a model with endogenous asset liquidity to understand the monetary and fiscal interactions with liquidity friction. An optimal Debt to GDP is arrived as an output but the objective function is to maximize welfare with a zero-nominal interest as lower bound. Liquidity friction here is represented by asset liquidity while this work is focused on Liquidity issues of a financial intermediary that is a bank. Since the objective of the study is the welfare function of the economy as whole the question of finding an interest rate for one component of the economy was not dealt. Jarociński and Maćkowiak (2018) design a model that captures features of monetary and fiscal policy with no default by government which, to gives higher simulated output than the empirical data.

The solutions in the literature do not address the liquidity problem with national growth in view, nor do they point which is a better option within fiscal policy(Debt or Future Taxation).This work attempts to address liquidity deficit through fiscal deficit and interest rates while minimizing the negative impact on GDP. Moreover, the work uses Ricardian equivalence to suggest how the deficit needs to be funded (Debt or Future Taxation)

**Theoretical Framework and Research Design**

**Theoretical Framework**

Bridging the liquidity gap by making optimal interventions on fiscal deficit and interest rates

Niemann and Pichler (2017) talk about the role of Public debt in tax smoothing and as an instrument to provide liquidity when needed thereby reducing the friction in economy. Equation-1 is based on Keynesian 2 philosophies 1) Liquidity preference theory (keynes-1936) which proposes linear relation between Money Supply and Interest rates. 2) Application of Keynesian fiscal stimulus policy (1936) to overcome the liquidity crisis in the banking. The two theories are used to study the impact of fiscal deficit and interest rates on liquidity deficit. Equation-2 is based on wealth effect, trade effect, Keynesian effect as discussed in section 1where Nominal Gross Domestic Product is hypothesized to be negatively impacted by rising interest rate and taxes. These two equations are considered in order to reduce the liquidity gap while minimizing the negative impact of Nominal GDP.

$LD=\beta_1*FD+ \beta_2*Int$ ---------- Equation-1

LD = Liquidity Deficit FD = Fiscal Deficit and Int= Interest rates

$\beta_1$ and $\beta_2$ are regression coefficients

$GDP=\beta_3*FD+ \beta_4*Int$---------- Equation-2

GDP = Nominal GDP FD = Fiscal Deficit (quarterly) and Int= Interest rates (Quarterly)

$\beta_3$ and $\beta_4$ are regression coefficients

The optimization problem is solved by defining 2 objectives

Min ($LD=\beta_1*FD+ \beta_2*Int$) ----------Objective -1

Max ($GDP=\beta_3*FD+ \beta_4* Int$) ----------Objective-2

Where Min stands for minimize and Max stands for maximize.

**Testing for the Ricardian equivalence**

Ricardian Equivalence says that in the long run bridging the fiscal deficit through future taxation of borrowing does not impact the net aggregate national wealth (Barro1974). This equivalence is tested to make comments on how the fiscal deficit should be bridged either through future taxation or through debt. For this purpose, equation -3 has been applied to check the Ricardian equivalence.

$GDP=\beta_5 BR+ \beta_6 TX+C$----------Equation-3

Where BR= borrowings by the government, TX= Government revenue through taxes, GDP=Nominal GDP of the economy.

$\beta_5$and $\beta_6$ are regression coefficients.

To account for the unequal time periods of the data where Ricardian equivalence is being tested on data right from 1981 to 2018 while the rest of the models are trained on data from 2012-2018. Threshold Auto Regression (TAR) is used to demarcate between the time regimes that are taken or not taken in building the earlier models. We use a structural variable (dummy variable) called break to make the demarcation and for years after the 2012 the value is one and for the years before and equal to 2012 the value is zero. This structural break is provided because there is a drastic dip in GDP growth rate from 2011-12 to 2012-2013. The real GDP dropped from 6.60% to4.47% (Community.Gov.in-2019). So, in order to differentiate the impact created by such a break the structural break is taken in the year 2012.

**Data Collection**

The data collection process has been split into 2 phases. 1) To study the impact of fiscal deficit and interest rates on liquidity deficit of Indian Banking system and GDP2) To study the impact of borrowings by the government and taxes on the GDP of the nation. For the first phase Monthly data is taken for fiscal deficit from 2012 –Nov till March 2019. For interest rates liquidity deficit monthly averages are taken for dates within the same range as mentioned before. Liquidity injected by Reserve bank of India is taken proxy for liquidity deficit. For the second phase Annual data for taxes, government internal borrowings and GDP are taken from financial year 1980-81 to Year 2018-19. Interest on 1-3-year deposit is considered as proxy for Interest rates because this category of deposits holds the maximum percentage of source of funds in deposits. As per RBI report maturity profile assets and liabilities 2018 this category accounts for 25 % of the total term deposits mobilized and is the largest. Only term deposits have been explored as demand liabilities are volatile and unreliable source of money by nature and definition

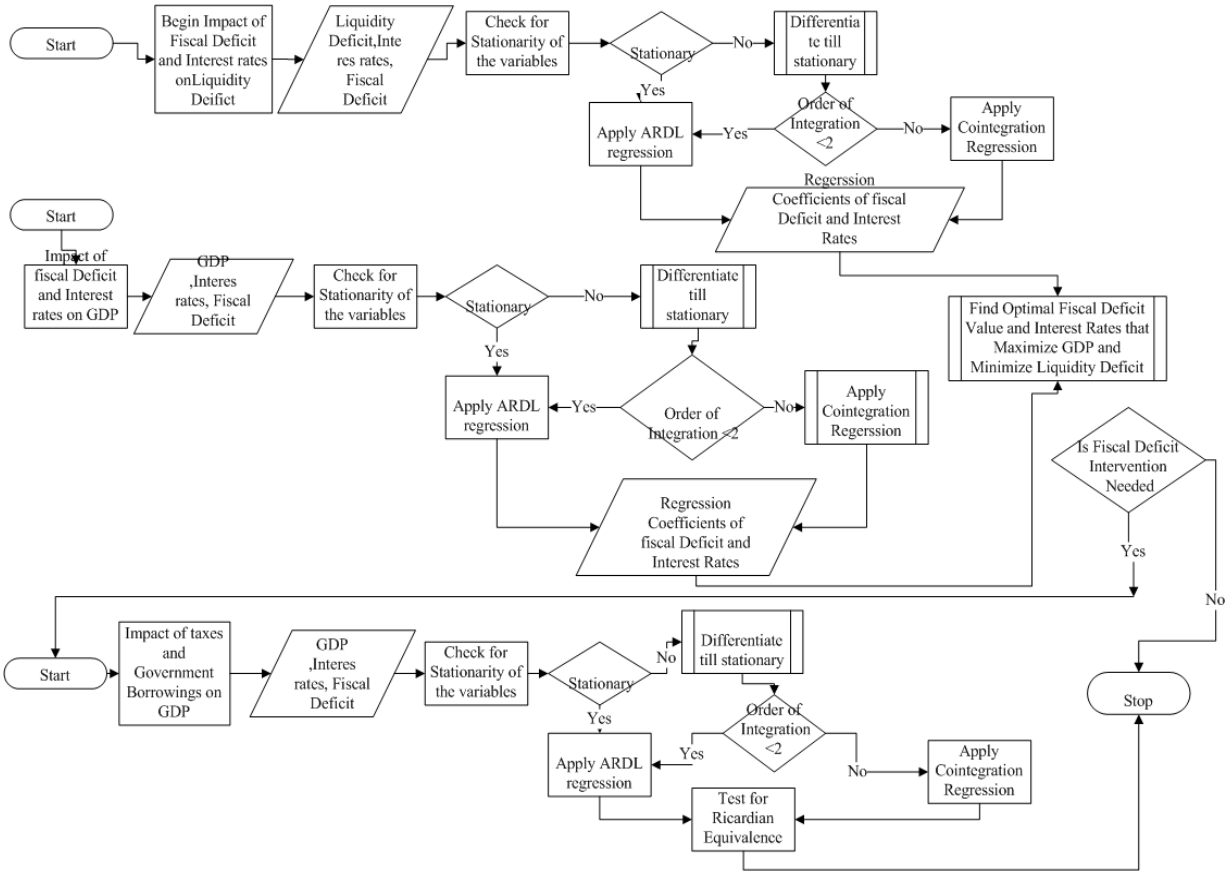
**Data Description**

Table-2 shows the variables and the proxies taken for those variables (in applicable cases only) along with their frequency, treatment to convert the high frequency data to low frequency for analysis, count, mean and standard deviation.

| Variable | Proxy | Available Frequency | Transformed frequency | Method of frequency transformation | Count after frequency transformation | Average after frequency transformation | Standard Deviation |
|---|---|---|---|---|---|---|---|
| LD | Liquidity injected by the Reserve bank of India | Daily | Monthly<br>quarterly | Average<br>Average | 74 (Monthly)<br>25(Quarterly) | ₹76.67 Billion (Monthly)<br>₹419.20 Billion (Quarterly) | ₹506.75 Billion (Monthly)<br>₹428.36 Billion (Monthly) |
| Interest rates (quarterly) | 1-3-year Term deposit interest rate | Weekly | Monthly<br>Quarterly | Average<br>Average | 74(Monthly)<br>25(Quarterly) | 8.01 percent (Monthly)<br>8.03percent (Quarterly) | 0.93percent (Monthly)<br>0.93 percent (Quarterly) |
| Nominal GDP Quarterly | Not applicable | Quarterly | Quarterly | Not applicable | 25 | ₹30065.20 Billion | ₹5564.97 Billion (Monthly) |
| BR | Not applicable | Annual | Annual | Not applicable | 39 | ₹1842.99 Billion | ₹2001.781 Billion |
| TX | Not applicable | Annual | Annual | Not applicable | 39 | ₹4059.65 Billion | ₹4912.80 Billion |
| Nominal GDP Annual | Not applicable | Annual | Annual | Not applicable | 39 | ₹1185347.67 Billion | ₹1410607.41Billion |
| Fiscal Deficit | Not applicable | Monthly | Monthly<br>Quarterly | Average | 74(Monthly)<br>25(Quarterly) | ₹473.33Billion (Monthly)<br>419.19 Billion Quarterly | ₹590.52Billion (Monthly)<br>₹428.34Billion (Quarterly) |

Analytical Methodology

The following flow chart describes the analysis method used in this work.




## Findings

### Data stationarity tests

We test for stationarity of LD, FD and Int using both ADF and Phillips Peron test. Both the tests confirm stationarity of all the three variables at 1st difference.

### Relationship between Liquidity Deficit, Fiscal Deficit and Interest rates on fixed deposits.

Multi collinearity between fiscal deficit and interest rates are found very weak with the correlation coefficient of 0.0684. Hence, it may be considered that the impact of Fiscal deficit on interest rate is not significant in the successive analysis. Since all the data series is stationary at 1st difference we proceed ahead with Auto Regression with Distributed Lag (ARDL) regression. In order to proceed ahead with ARDL we determine Lag using Unrestricted VAR (Vector Auto Regression). The Lag in this case is 1as per Akaike Information Criterion (AIC). The Granger short run causality shows that the impact of D (FD) on D(LD) is significant whereas the rest are insignificant at the level of 5%. The Long-term relationship between Liquidity Deficit, Fiscal Deficit and Interest rates on fixed deposits is shown in Table -3

| Dependant Variable :D (LD) | | | |
|---|---|---|---|
| Independent Variable | Lag | Coefficient | Significance |
| D(LD) | 1 | -0.25 | 0.0322* |
| D(FD) | 0 | 0.000309 | 0.9963 |
| D(Int) | 0 | -0.26.66 | 0.0656** |
| R Squared | 0.099 | | |
| Adjusted R Squared | 0.066 | | |
| Durbin Watson | 1.960 | | |

Table -3 Note: * Indicates Significance at 5% level and ** Indicates Significance at 10%level.

**Long Term Impact of Fiscal Deficit and Interest Rates on Liquidity Deficit**

One can observe that change in liquidity deficit is in negative correlation with its pervious term indicating the liquidity deficit is taking a dynamic equilibrium. Change in liquidity deficit has insignificant relation with fiscal deficit while hike in interest has negative impact of change in liquidity deficit.

**Relation between GDP, Fiscal Deficit and Interest rates on fixed deposits**

Checking for stationarity of Quarterly interets rates, GDP and FD using ADF test.Quarterly GDP and Quarterly Interest rates are stationary at second difference while FD is statioinary at first difference.Therefore we choose conitergrating regression to find the impact of interest rates and fiscal deficit on GDP to optmize the coice in order to meet the fiscal deficit.Table-4 Shows the results

| Dependant Variable :D(D(GDP)) | | | |
|---|---|---|---|
| Independent Variable | Lag | Coefficient | Significance |
| D(FDM) | -0.46 | -0.25 | 0.001 |
| D(INTM) | 988.94 | 0.000309 | 0.035 |
| R Squared | 0.150 | | |
| Adjusted R | 0.071 | | |

Table-4Long Term Impact of Fiscal Deficit and Interest Rates on Liquidity Deficit

One can see that fiscal deficit has negative impact on the rate at which the GDP growth rate changes while Interest rate too has negative impact.

**Testing for Ricardian Equivalence**

Nominal GDP is stationary at second difference while taxes and internal borrowings are stationary at level zero. Therefore, we go for cointegrating regression to study the impact of taxes and finance on the rate at which GDP growth rate is growing.

| Dependant Variable :D(D(GDP)) | | | |
|---|---|---|---|
| Independent Variable | Lag | Coefficient | Significance |
| BR | 698.3401 | -0.25 | 0.000 |
| TAX | -242.35 | 0.000309 | 0.000 |
| R Squared | 0.13 | | |
| Adjusted R Squared | 0.08 | | |

Table-5Long term Impact of Government Borrowing and Tax on GDP growth without structural break in data.

Threshold auto regression.

#

| Dependant Variable :D(D(GDP)) | | | |
|---|---|---|---|
| Before and 2012 | | | |
| Independent Variable | Lag | Coefficient | Significance |
| BR | 0 | 2184.316 | 0.000 |
| TAX | 0 | -1079.785 | 0.000 |
| After 2012 | | | |
| BR | -0.6 | -0.600 | 0.999 |
| TAX | 0.411 | 0.411 | 0.998 |
| R Squared | 0.4600 | | |
| Adjusted R Squared | 0.4111 | | |

Table-6Long term Impact of Government Borrowing and Tax on GDP growth with structural break in year 2012

One observes that before and inclusive of year Borrowings had positive impact on GDP growth while taxation had a negative impact, however after 2012 both the variables have become insignificant towards GDP growth.

**Discussions and Conclusion**

It is found that in short run fiscal deficit has an impact of liquidity deficit but not in the long run with a lag of one month. In long run the impact is neutral indicating that bridging of fiscal deficit is well within the planned expenditure of the government and government need not create unplanned expenditure to bridge this gap. Liquidity deficit in the long run responds to hike in interest rate showing that liquidity in banking system can respond to monetary intervention. Growth in fiscal deficit and interest rates both contribute to inhibit the growth of the economy as their regression coefficients have negative sign in relation with GDP. Increase in fiscal deficit retarding the growth rate of the economy is a matter of concern because it indicates the government expenditure is not going into productive venues and is acting as transfer rather than value addition. When it comes to Ricardian equivalence from 1981 to 2012 it seems to be broke here in the sense that borrowings of the government are contributing to the growth of the economy while taxes are showing the opposite effect. The positive impact of borrowing on GDP indicates that borrowings by government is net wealth effect in terms of adding to the economy by facilitating new investments, increase in consumption. However, from 2012 onwards neither taxes nor government borrowings are showing significant impact, which could indicate fiscal policy's neutrality to growth. We conclude that although liquidity deficit in the banking system can be addressed by boosting interest on term deposits, this has negative impact on GDP. The other solution is that government through its borrowings can fund or finance business ventures of banks. Such funding strategies need not be limited only to increase of government equity in banking system. Resorting to such strategies eliminates the negative impact of interest rate hike on GDP.

**Limitations and further scope**

This current work doesn't address a scenario where there has been sovereign default. The work creates a future scope on various modes government can infuse liquidity into the banking system like equity, asset purchase, debt, various forms of debt like refinance, etc. The work is limited to taxation and borrowing part of funding fiscal deficit. It does not take sale of government assets, consumption of reserves, or printing money into consideration, the work takes Nominal GDP into consideration.

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# Financial knowledge and modified theory of planned behaviour influence on financial behavioural intention: A multi-group analysis

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**Abstract**

*The study applied the modified theory of planned behaviour (TPB) which includes direct and indirect effects of financial knowledge towards financial behavioural intention. Purposive sampling was conducted on Malaysians millennial generation (N = 304) to examine the financial behavioural intention. The data were analysed by using partial least squares structural equation modelling (PLS-SEM) using SmartPLS 3.2.8. The results found that the financial knowledge had a significant effect on the attitude, subjective norms, perceived behavioural control, and financial behavioural intention. In addition, a Multi-Group Analysis (PLS-MGA) was carried out and found that there were no significant differences between two groups (male and female) in particular their financial behavioural intention. Nevertheless, the findings did provide a better understanding on the roles of financial knowledge on Malaysians millennial generation behaviour.*

## Introduction

Financial illiteracy is widespread, and previous studies revealed that individuals lack of knowledge of even the most basic economic principles. One striking feature of the empirical data on financial literacy is the large and persistent gender difference (Lusardi & Mitchell, 2014). Women for example face unique financial challenges such as life expectancies that are longer than men's, lower lifetime income than men, and career interruptions due to child rearing. As women are likely to spend at least part of their retirement in widowhood, they have different savings needs than men. The study also indicated that they are less likely to plan and, thus, less likely to be prepared for their retirement than men. Further, lower financial skills combined with fewer available resources puts women's financial security after retirement at risk (Lusardi & Mitchell, 2008). The current status of millennial financial literacy is bleak despite being labelled as the most educated, diverse, and economically active generations in human history, they are less financially literate than their parents and grandparents (DeTroye, 2015; PriceWaterhouseCoopers, 2015).

There are numerous occasions that demand important decisions to be made for the first time by individual especially on financial matters when they enter adulthood. The financial behaviour for example has general implications towards young adulthood as they extend throughout adulthood up to later life and determine individual lifelong financial outcomes (Eccles, Ward, Goldsmith, & Arsal, 2013). The millennials of today face various challenges including limited financial resources and rising cost of living. They also need to have savings for emergencies, management of credit and risks, plans for retirement, and management of property. Hence, the knowledge in personal financial management is vital to help them make the right decisions about their financial management. Thus, they need financial knowledge for financially secure future.

For millennia, scholars including behaviourist researchers have been fascinated by behaviour change on how people seek, use and process information. Even though human behaviours are complex in nature, individuals are able to change their behaviour on different occasions or reasons (Prochaska-Cue,

1993; Shockey & Seiling, 2004). Financial behaviour change purpose is to assist individual pertaining to financial management and attitude that will guide individual to achieve their life and financial goals. Financial management is set of behaviour and decisions with different degree of importance and ease of implementation depending to individual's needs, priorities, and skills. This study attempts to examine the intention of millennial generation based on gender to change their financial behaviour (Ozmete & Hira, 2011) using modified theory of planned behaviour (TPB) to support the research's framework. Given the theoretical foundation and empirical evidence on the differences between males and females on many aspects, it is necessary to investigate the differences.

**Literature Review**

TPB can be applied to financial behavioural prediction to understanding and predicting the determinants of financial behaviour. The inclusion of perceived control over the behaviour in a modified version of Theory of Reasoned Action (TRA) is referred to as the Theory of Planned Behaviour (TPB) (Ajzen & Madden, 1986; Ajzen, 1991). The TPB introduced the concept of perceived control on the opportunities, resources, and skills necessary to perform a behaviour to the TRA. The notion of perceived behavioural control is comparable to the notion of self-efficacy person's perception of individual to perform the behaviour. TPB was employed to underpin the framework due to its ability to capture the predictive power of financial behaviour change (Ajzen & Madden, 1986; Ozmete & Hira, 2011).

TPB illustrated attitudes as an important determinant of Individual's intention towards changing financial behaviour. Attitude manifests individual's specific behaviour, whether to like or dislike certain outcomes (Ajzen & Madden, 1986; Ajzen, 1991). An individual may react positively on certain thing if they perceived it to be good for them or react vice-versa (Ajzen & Fishbein, 1980). Thus, the study perceives undergraduates are equipped with basic financial knowledge to have a positive attitude towards changing their financial behaviour (Ozmete & Hira, 2011).

Normative and behavioural beliefs in TPB are able to convey financial messages to encourage people to make right financial decisions. Social norm is social pressure influencing intention to change financial behaviour of individual. The surrounding pressure towards individual to behave according to the normative belief of other people (Ajzen, 1991; Ajzen & Madden, 1986). In certain occasion, an individual may refer to their social referent such as spouse, family or peers to get their opinion on a certain thing that may change their financial behaviour (Ajzen, 1991). Their social influence will depend on who are the individual preferred social referent and their willingness to act according to theses preferences (Oliver & Bearden, 1985).

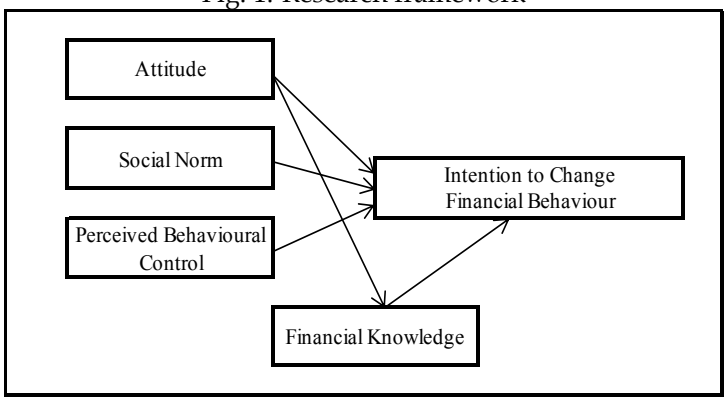
Perceived behavioural control is another important predictor of behavioural intentions in TPB. The ease or difficulty to perform a given behaviour largely depends on the individual's perception in perceived behavioural control. The present or absence of important resources or opportunities do not deter someone to perform certain behaviours as perceived behavioural control is dependent on control beliefs (Ajzen, 1991; Ajzen & Madden, 1986). Therefore, this study suggested perceived behavioural control did influence the intention to change financial behaviour (Ozmete & Hira, 2011).

Financial knowledge on the other hand is knowledge pertaining to financial matters and the skills on how to make good use of financial knowledge as it is recognised as important for the individuals and the nation (Organisation for Economic Co-operation and Development [OECD], 2009). Financial knowledge at individual level will lead to better financial decisions when it comes to risk management and improving individual's overall financial wellbeing (Sabri et al., 2012). At the same time, it helps the public to make better financial decisions, and protect consumers and investors at government level. It also helps prudent use of financial services to ensure financial market stability, confidence in financial markets and economic growth at national level. The lack of financial knowledge may result in financial difficulties (Alhabeeb, 1999; Lajuni et al., 2017), consumer and investor exposure to fraud, and instability of market that could jeopardize economic growth. Yet, empirical studies show level of financial knowledge is low in advanced countries with detrimental consequences (Lusardi, Michaud, & Mitchell, 2013).

**Framework and Hypothesis Development**

Previous literature exposed that attitudes, social norms, perceived behavioural control, and financial knowledge are able to influence the intention towards altering financial behaviour among millennials in Malaysia. The research framework of this study is presented in Figure 1.

Fig. 1.-Research framework




Thus, six hypotheses were formulated to direct the research problems and aims of the survey.

H1: Attitude positively influences financial knowledge.
H2: Attitude positively influence intention to change financial behaviour.
H3: Social norms positively influence intention to change financial behaviour.
H4: Perceived behavioural control positively influence intention to change financial behaviour
H5: Financial knowledge positively influences intention to change financial behaviour.
H6: Attitude positively influences intention to change financial behaviour mediated by Financial knowledge.

**Research methodology**

The samples for this study were millennial generation in Malaysia. To ensure that the sample characteristics corresponded to the nature of the study, a non-probability purposive sampling technique was adopted to ensure the collected data were indeed from valid sources. Sample size estimation is determined using G*power 3.0 analysis (Faul et al., 2007). By using G-Power Analysis software, with the effect size of f square 0.15, α error pro 0.05, power Gf 0.95 with a number of 3 tested predictors; therefore 119 respondents were the minimum sampling for this study. 370 questionnaires were distributed; and 304 completed and usable copies were collected. Figure 1 depicted the research framework that contained statements of five variables investigated. The variables were assessed using multiple items (Hayduk & Littvay 2012) and the data was then analyzed using SmartPLS 3.2.8 (Ringle et al., 2018) to examine the hypotheses.

**Results and discussion**

**Sample**

With a total of 304 respondents made up of millennial generation in Malaysia, the respondents comprised of females (50%) and male respondents (50%). 97.8% of the respondents were between 19-24 years old. The respondent profile was summarized in a report shown in Table 1.

Table 1: Respondents' Profile

| | Male (N = 152) | | Female (N =152) | |
|---|---|---|---|---|
| Demographics | Frequency | % | Frequency | % |
| Gender | 152 | 50.0 | 152 | 50.0 |
| Age | | | | |
| 18-23 | 83 | 27.3 | 77 | 25.3 |
| 24-29 | 69 | 22.7 | 75 | 24.7 |
| Education | | | | |
| Diploma | 65 | 21.4 | 20 | 6.6 |
| Degree | 30 | 9.9 | 86 | 28.3 |
| Others | 57 | 18.8 | 46 | 15.1 |
| Status | | | | |
| Single | 89 | 29.3 | 56 | 18.4 |
| Married | 63 | 20.7 | 96 | 31.6 |
| Ethnic | | | | |
| Bumiputera | 53 | 17.4 | 62 | 20.4 |
| Chinese | 41 | 13.5 | 39 | 12.8 |
| Indian | 35 | 11.5 | 25 | 8.2 |
| Others | 23 | 7.6 | 26 | 8.6 |

**Measurement Invariance of Composite Models (MICOM)**

The main reason of measurement invariance is to ensure that measurement models conducted under different conditions produce equivalent representations of the same constructs, before researcher proceed to perform Multi-Group Analysis (MGA) (Hair et al., 2010). Horn and McArdle (1992) refer measurement invariance as "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute. In other words, by establishing measurement invariance, researchers should ensure that dissimilar group-specific model estimations do not result from distinctive content and the meanings of the latent variables across groups.

To examine measurement invariance in PLS-SEM, the MICOM procedure need to be executed (Henseler et al., 2016). This procedure requires three steps to test for configural and compositional invariance, as well as equality of composite mean values and variances (Henseler et al. 2016). The first step in the MICOM procedure involves examining configural invariance (Henseler et al., 2016). The assessment of configural invariance consists of an evaluation of the measurement models for all groups to determine if the same basic factor structure exists in all the groups (same number of constructs as well as items for those constructs). Establishing configural invariance involves the fulfillment of the following criteria: (a) identical indicators per measurement model, (b) identical data treatment, and (c) identical algorithm settings or optimization criteria (Henseler et al., 2016). All measurement indicators must be included in the constructs across all groups.

Table 2 demonstrates the findings of configural invariance for reflective measurement model. The results validate that the constructs (or variables under investigation) have high and sufficient average variance extracted internal consistency (Roldán & Sánchez-Franco, 2012) (AVE) to validate the convergent validity (Hair, Hult, Ringle, & Sarstedt, 2017). HTMT criterion is used to assess discriminant validity (Ringle, et al., 2017) specifies that the discriminant validity is well-established at HTMT0.85 (Diamantopoulos & Siguaw, 2006). Thus, there is no issue of multi-collinearity between items loaded on different constructs in the outer model. Hence, it is appropriate to proceed to compositional invariance.

Table 2: MICOM Configural Invariance
Measurement Model Assessment (Reflective)

| Model and Construct | Cronbach's α | CR | AVE | Correlation of Constructs | | | |
|---|---|---|---|---|---|---|---|
| | | | | ATT | IFB | PBC | SN |
| Males | | | | | | | |
| ATT | 0.875 | 0.906 | 0.618 | | | | |
| IFB | 0.868 | 0.919 | 0.791 | 0.350 | | | |
| PBC | 0.765 | 0.865 | 0.682 | 0.389 | 0.817 | | |
| SN | 0.873 | 0.900 | 0.533 | 0.299 | 0.278 | 0.339 | |
| Females | | | | | | | |
| ATT | 0.918 | 0.936 | 0.708 | | | | |
| IFB | 0.939 | 0.961 | 0.891 | 0.473 | | | |
| PBC | 0.767 | 0.861 | 0.679 | 0.560 | 0.671 | | |
| SN | 0.882 | 0.784 | 0.537 | 0.165 | 0.047 | 0.120 | |

Criteria: Composite Reliability >0.708 (Hair et al., 2017), (Hair et al., 2017) AVE> 0.5 (Hair et al., 2017), (Hair et al., 2017).

Criteria: Discriminant validity is established at HTMT0.85 / HTMT0.90

Table 3 on the other hand presents the results of configural invariance for formative measurement model. The findings yield path coefficients of 0.846 and 0.762 respectively, more than 0.70, thus, the formatively measured constructs have sufficient degrees of convergent validity (Klassen & Whybark, 1999). Besides, multi-collinearity between indicators is assessed. All indicators for formative construct satisfy the VIF values and they are consistently below the threshold value of 5.0 (Hair et al., 2014) and also 3.3 (Diamantopoulos & Siguaw, 2006). Therefore, it can be concluded that collinearity issues do not reach critical levels in any of the formative constructs and is not an issue for the estimation of the PLS path model. In addition, the significance and relevance of the outer weights of the formative constructs show that all formative indicators are significant. Previous research provides evidence of the relevance of these indicators for capturing the operationalize definition of the financial knowledge (John, 1999; Carswell, 2009; Collins, 2007; Haynes-Bordas, Kiss, & Yilmazer, 2008; Scott, 2010) hence, these indicators are retained in the formative constructs even if their outer weights are not significant.

Table 3: MICOM Configural Invariance
Measurement Model Assessment (Formative)

| Construct | Items | Convergent Validity | Weight | VIF | t-value weights | Sig |
|---|---|---|---|---|---|---|
| Financial Knowledge (Males) | Cash Management | 0.846 | 0.203 | 0.051 | 4.025 | 0.000 ** |
| | Credit Management | | 0.241 | 0.037 | 6.507 | 0.000 ** |
| | Insurance Knowledge | | 0.569 | 0.055 | 10.421 | 0.000 ** |
| | Investment Knowledge | | 0.296 | 0.036 | 8.280 | 0.000 ** |
| Financial Knowledge (Females) | Cash Management | 0.762 | 0.196 | 0.032 | 6.183 | 0.000 ** |
| | Credit Management | | 0.279 | 0.022 | 12.882 | 0.000 ** |
| | Insurance Knowledge | | 0.527 | 0.037 | 14.193 | 0.000 ** |
| | Investment Knowledge | | 0.288 | 0.026 | 11.098 | 0.000 ** |

Lateral Collinearity: VIF 3.3 or higher (Diamantopoulos & Siguaw, 2006)
Note: > 1.96**

The objective of the second step of the MICOM procedure is to examine compositional invariance, which occurs when composite scores are created equally across groups (Dijkstra & Henseler, 2011). Permutation tests are also conducted to statistically assess whether compositional invariance is present. Permutation tests are nonparametric (Henseler et al., 2016). For each permutation run, the correlations between the composite scores using the weights obtained from the first group are computed against the composite scores using the weights obtained from the second group (Henseler et al., 2016). As shown in Table 4, the MICOM results report for the second step which indicates that compositional invariance has been demonstrated for all the constructs. This is evident based on the original correlations being equal to or greater than the 5.00% quartile correlations (shown in the 5% column).

Table 4: MICOM Compositional Invariance

| | Original Correlation | Correlation Permutation | 5.00% | Permutation p-Values |
|---|---|---|---|---|
| ATT | 0.994 | 0.997 | 0.989 | 0.164 |
| FK | 0.993 | 0.993 | 0.987 | 0.442 |
| FS | 0.999 | 0.996 | 0.990 | 0.826 |
| IFB | 1.000 | 1.000 | 1.000 | 0.708 |
| PBC | 0.991 | 0.997 | 0.989 | 0.528 |

Table 5 shows the first portion of the results. In this step, we assess the composites' (constructs) equality of mean values and variances across the groups. For invariance to be established, the first column (mean original difference) must be a number that falls within the 95% confidence interval. This is assessed by comparing the mean original difference to the lower (2.5%) and upper (97.5%) boundaries shown in columns three and four. If the mean original difference is a number that falls within the range of the lower and upper boundaries, then the first part of step three has been met, thus providing initial evidence of invariance. The constructs in Table 5 all pass this portion of the test for invariance.

Table 5: MICOM Composite Equality-Part 1

| | Mean - Original Difference (Males - Females) | Mean - Permutation Mean Difference (Males - Females) | 2.50% | 97.50% | Permutation p-Values |
|---|---|---|---|---|---|
| ATT | -0.156 | -0.002 | -0.219 | 0.213 | 0.162 |
| FK | -0.072 | 0.002 | -0.199 | 0.229 | 0.542 |
| FS | 0.046 | -0.003 | -0.212 | 0.192 | 0.674 |
| IFB | -0.060 | 0.003 | -0.255 | 0.239 | 0.652 |
| PBC | 0.007 | 0.002 | -0.215 | 0.237 | 0.952 |

The second portion of the results for the MICOM step three is shown in Table 6. Similar to the assessment conducted using Table 5, the data in column one (variance original difference) must be a number that falls within the 95% confidence interval. Therefore, the first column is again compared to the lower (2.5%) and upper (97.5%) confidence interval. In order to conclude full measurement invariance for the composites (Henseler et al., 2016), all the constructs must fall within the 95% confidence interval. All

constructs in Table 6 all pass this portion of the test for invariance. By establishing full measurement invariance, the composites (measurement models) of the two groups can be analyzed using the pooled data.

Table 6: MICOM Composite Equality-Part 2

| | Variance - Original Difference (Males - Females) | Variance - Permutation Mean Difference (Males - Females) | 2.50% | 97.50% | Permutation p-Values |
|---|---|---|---|---|---|
| ATT | -0.224 | -0.010 | -0.323 | 0.275 | 0.170 |
| FK | 0.027 | -0.004 | -0.349 | 0.317 | 0.878 |
| FS | 0.107 | -0.021 | -0.300 | 0.257 | 0.454 |
| IFB | -0.242 | -0.010 | -0.366 | 0.379 | 0.258 |
| PBC | 0.017 | -0.004 | -0.307 | 0.295 | 0.906 |

As noted in Table 7, the relationship between attitude and intention to change financial behaviour (H2) is significant for females (*p*-value = 0.027) but not for males (*p*-value = 0.398). Both PBC (H4) and financial knowledge (H5) do have significant influence towards intention to change financial behaviour. The other relationships, H1, H3, and H6, do not indicate a major difference between males and females.

Table 7: Bootstrapping Results for Males and Females Separately

| | Males | | | | | Females | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T-Statistics (\|O/STDEV\|) | P-Values | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T-Statistics (\|O/STDEV\|) | P-Values |
| H1: ATT -> FK | -0.003 | -0.001 | 0.015 | 0.196 | 0.845 | 0.014 | 0.020 | 0.011 | 1.331 | 0.184 |
| H2: ATT -> IFB | 0.056 | 0.069 | 0.066 | 0.846 | 0.398 | 0.141 | 0.136 | 0.064 | 2.212 | 0.027 |
| H3: SN -> IFB | 0.002 | 0.019 | 0.068 | 0.034 | 0.973 | -0.010 | -0.053 | 0.097 | 0.098 | 0.922 |
| H4: PBC -> IFB | 0.510 | 0.512 | 0.087 | 5.835 | 0.000 | 0.447 | 0.441 | 0.069 | 6.457 | 0.000 |
| H5: FK -> IFB | 0.300 | 0.293 | 0.082 | 3.670 | 0.000 | 0.214 | 0.225 | 0.062 | 3.476 | 0.001 |
| H6: ATT -> FK -> IFB | -0.001 | -0.001 | 0.004 | 0.207 | 0.836 | 0.003 | 0.004 | 0.003 | 1.046 | 0.296 |

To assess the hypotheses, a 5000-bootstrap resampling of data is conducted (Hair et al., 2017). Table 8 demonstrates the assessment of the permutation test path coefficients for each path relationship. A permutation *p*-value of less than or equal to 0.10 designates a significant difference between the two groups of interest. The permutation test path coefficients result in this study however indicates that there was no significant difference between males and females. This is evident by the permutation *p*-values in Table 8.

Table 8: Permutation Test Path Coefficients Results

| | Path Coefficients Original (Males) | Path Coefficients Original (Females) | Path Coefficients Original Difference (Males - Females) | Path Coefficients Permutation Mean | 2.50% | 97.50% | Permutation p-Values |
|---|---|---|---|---|---|---|---|
| H1: ATT -> FK | -0.003 | 0.014 | -0.017 | 0.000 | -0.029 | 0.031 | 0.270 |
| H2: ATT -> IFB | 0.056 | 0.141 | -0.085 | -0.003 | -0.206 | 0.181 | 0.396 |
| H3: SN -> IFB | 0.002 | -0.010 | 0.012 | 0.017 | -0.224 | 0.183 | 0.884 |
| H4: PBC -> IFB | 0.510 | 0.447 | 0.063 | 0.004 | -0.229 | 0.247 | 0.610 |
| H5: FK -> IFB | 0.300 | 0.214 | 0.086 | -0.012 | -0.218 | 0.200 | 0.430 |
| H6: ATT -> FK -> IFB | -0.001 | 0.003 | -0.004 | 0.001 | -0.007 | 0.009 | 0.344 |

**Discussion**

In this study, financial knowledge and modified TPB were used to explain its influence towards changing financial behavior among millennial in Malaysia specifically looking into differences between males and females. The present study sets out to contribute whether gender play an important role in improving young adult's intention to change their financial behavior. We expect that the number of people facing financial difficulties will increase imminently. This situation is disturbing, as the implications will not only affect individuals, but also cause in enormous costs for the entire financial system. Thus, understanding what change financial behaviour among young people is vital to ensure bankruptcy cases could be reduced e.g. through financial education, seminar, or campaign. Therefore, it is crucial for the policymakers to understand precisely why people get involve into financial trouble, so that appropriate action or policy could be devised to prevent people from getting into difficulties in the future

(McCarthy, 2011). Continuous financial education among young generation cannot be taken for granted and immediate correction measures need to be considered to ensure they are equipped with necessary financial knowledge that could help them to improve their financial behaviour. We still believe, despite the complexity of human behaviours in nature, one should always be able to change their behaviour someday (Prochaska-Cue, 1993; Shockey & Seiling, 2004).

**Conclusion**

Thus, providing proper education system is important to ensure younger generations are equipped with sound financial foundations. Sending them unprepared to face the real world is a recipe of destruction that we may not want to imagine. Other stakeholders such as financial institutions should play their roles to improve financial knowledge as part of the CSR activities (Lentner et al., 2015). Future study should also consider other potential determinants that may enhance financial knowledge and improve financial behaviour of millennial generation in Malaysia. Social media for example is widely used by this generation to get information. The fact of having 68.6 percent Internet penetration with more than 21 million Internet users with almost 30.8 million population (Internet World Stats, 2017) and at the same time being the world highest user of WhatsApp (Bernama, 2017), Malaysian's authority should exploit social media as a platform to educate the public especially the young adults on the importance of financial knowledge to the society. The stakeholders must act now to find way on how social media can be tapped to manoeuvre the financial knowledge and financial behaviour in Malaysia for the benefit and well-being of the nation.

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# Technology effects towards banks' liquidity risk on Southeast Asian commercial bank

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**Keywords**
Liquidity, Technology, Southeast Asian and Banking Institution

**Abstract**

*Liquidity in a banking system is relatively important when dealing with the survivability of the financial system. It is risky when a bank is unable to cover its financial obligation when it is due. Participation from public in banking through the use of technology could enhance the level of bank liquidity. This study is aimed at examining the relationship between the technology and banks' liquidity from the year 2012 to 2017 involving five commercial banks in selected Asian countries. This study was used the Internet subscriber, Mobile Celullar, Automated Teller Machine (ATM) and Internet security as proxies of technology. The static panel data technique was employed to test the significant effect between the variable using the fixed effect and random effect model. The findings show that the ATM, mobile cellular is significant with the bank liquidity ratio, hence it shows that the increasing number of ATM and mobile cellular will affect the bank deposit.*

## Introduction

The concept of financial intermediaries refers to a productive activity in which a financial institution incurs liabilities on its own account for the purpose of acquiring financial assets by engaging in financial transactions. The function of financial intermediaries is to channel funds from lenders to borrowers by intermediating between them. It was designed to account for institutions from depositing and channelling of funds between the surplus units to deficit units. Thus, the main function of commercial banks is channelling of funds (monetary) to its customers through loan activity. The bank has to be in a good position by having healthy liquidity position (Litter, Silber & Udell, 2004). Therefore, liquidity becomes the essential element for banks stability in the financial system because deposits can be withdrawn anytime, hence banks must manage their liquidity to ensure they can satisfy a deposit withdrawal without being forced to use the long-term liquidity.

Marozva (2015) stated the major reasons of bank failures is due to insufficient liquidity by holding liquid assets that has an opportunity cost of higher returns. From that point of view, liquidity is important for proper functioning of financial markets and the banking sector especially during the early "liquidity phase" of the financial crisis that began in 2007. During the crisis, many banks experienced difficulties because they did not manage their liquidity in a prudent manner. As liquidity problems of some banks during global financial crisis re-emphasised, liquidity is very important for functioning of financial markets and the banking sector. From that point, the Basel Committee on Banking Supervision (BCBS) provides a set of recommendations for regulations in the banking industry by introducing Basel III to ensure that financial institutions have enough capital on account to meet obligations and absorb unexpected losses.

Therefore, to enhance the level of banks' liquidity the participation from public in banking would emerge the liquidity level of the bank through the technology. The tremendous change has occurred in the banking sector mostly triggered by inventions in the world of technology. The electronic channels become most overwhelming trends in banking technology. The banking system embraced computerization to keep abreast with other institutions. Technology is a crucial agent of modernity. Most of the people are looking for online possibilities to be connected with their banks. Hence, technology will make the banks more accessible and convenient to save, make a payment and withdraw the money. In order to get more customers, banks as financial institutions naturally react very quickly to any change in technological environment. Largest banks as financial intermediaries play essential roles in financing economic enterprises (Eghtesad Novin Bank, 2008). In relation to that, the Innovation Diffusion Theory postulated

by Roger (1983) explains individuals' intention to adopt a technology and the factors determine adoption towards an innovation is: relative advantage, compatibility, complexity, trialability and observability. This theory is concerned with the manner in which a new technological idea and technique or a new use of an old one is a form of creation towards efficiency. Simon (2016) stated that many banks to adopt ICT in their operation in order to improve their efficiency and meet the customer needs. Therefore, the customers are able to access their accounts anywhere as long as they are connected to the internet.

The Association of Southeast Asian Nations (ASEAN) inaugurated in 1957 with four countries now includes 11 countries. The group's aim is to prevent conflict among member states by creating an integrated economic bloc through sustained modernisation. The core countries group in ASEAN account for four percent of world trade and achieved greater degree of economic and financial integration among themselves with the developed countries. They actively involve with trade, economic and financial regulations similar to those in newly industrialising nations (Chung, Ariff, & Shamsher, 2017). The banks dominate the development process to reform after bore the brunt from the two financial crises. It led to further reforms being implemented by diversifying their heavy reliance on the banking sector. Banks play a certain role in developing countries, more than in the developed countries.

Section two provides a brief review of the literature. Section three describes the data and methodology. Section four presents the result of the relationship between technology and banks' liquidity.

## 2. Literature review

### 2.1 Determinants of banks' liquidity and measurements

Bank liquidity can offer different of studies such as internal, bank specific or characteristics and external or macroeconomic factor. The empirical studies conducted by Bonfim and Kim (2012); Bonner, vanLelyveld and Zymek (2013); Delechatetal (2012) Dinger (2009); Munteanu (2012) and Tseganesh (2012) investigated that the bank specific and Macroeconomics as the variables determined the bank's liquidity. They further explained that macroeconomics variables consist of Gross Domestic Product (GDP), Inflation rate, crisis and unemployment rate. The bank specific factors include deposits, cost of funding, profitability, capital, bank size and ownership as the variables. Some of the researcher used the various liquidity ratios to measure the banks' liquidity risk such as liquid assets to total assets ratio (Bourke,1989; Molyneux & Thornton, 1992; Barth et al.,2003 and Demirgüç-Kunt et al., 2003). This ratio measures the overall liquidity position of the bank and measure the liquidity available to meet the expected demand for cash that includes cash in hand, balance with institutions and money at call and short notice. Another liquidity ratio is liquid assets to deposits ratio (Shen et al.,2001), loans to total assets ratio (Demirgüç-Kunt and Huizinga,1999 and Athanasoglou et al.,2006) that measures the liquidity available to the total deposits of the bank. The third commonly used liquidity ratio is net loans of customer and short-term funding ratio (Pasiouras and Kosmidou, 2007; Kosmidou, 2008 and Naceur & Kandil,2009) to measure a bank's ability to cover loan losses and withdrawals by its customers. Banks have to make sure there is an adequate liquidity to cover loans.

The new requirement set by the Basel Committee for Banking Supervision (BCBS), a college of central bankers and other financial regulators from the United States and other advanced economies in December 2010 proposed new liquidity requirements meant to promote the resilience of the banking sector. The new proposed requirement is to examine the new requirement namely the Liquidity Coverage Ratio (LCR) the Basel Committee's newly proposed minimum threshold for short-term liquidity. In 2011, Malaysia have outlined their plans to implement the Basel III reform package which comprises measures to further strengthen the existing capital and liquidity standards for banking institutions in Malaysia.

### 2.2 Technology and Banks' Liquidity

The previous studies have reviewed the impacts of technology towards the economic growth. However, only few analysed the impacts of technology on bank's liquidity led to little contribution to the literature. Nowadays banks are prone to technological obsolescence and therefore respond swiftly to variations in both economic and technological environment to not only maintain but also increase their customers' needs. The new technologies such as personal computers are complex, and an element of uncertainty exists in the minds of decision makers. This is because people form attitudes and intentions toward trying to learn to use the new technology prior to initiating efforts directed at using. It is well documented now that the access to Internet, personal computers and other information technologies is

highly unequal between countries. Hence, technology has increased transactions which ultimately have direct and indirect impacts on minimum banks' liquidity (Kajuju, N.K 2016). The current banking strategy practice is a new way of handling daily operations that enables banks to improve their ability to compete with their competitors, lower and manage the risk while at the same time satisfy the customers' needs and respond to the market changes (Laeven & Levin, 2010). The research conducted by Sanjeev, Dale and Kenneth (2005) used different measures of IT penetration - the usual measures in per capita terms and in per income terms. On top of this, they consider three generations of IT - mainframes, PCs and Internet. Internet banking (e-banking) is used to deliver a wide range of value-added products and services to bank customers (Ovia, 2012)

Numerous empirical studies about the review of the literature have attempted to address the aspects of adoption of technology (ICT) with the other variables by using the primary methods of collection. It has however, not adequately linked the technology towards the bank's liquidity. Studies conducted by Hassan et al. (2013) secondary data of six (6) banks in Nigeria between 2006- 2011 used the proxy of electronic banking products such as ATM and e-mobile. NK Kajuju (2013) used the ATM, POS, internet banking and Mobile banking as a proxy of electronic banking in Kenya and found that as the number of ATM transactions of the banks increased, the value of the transactions also increased significantly. The more the banks embrace ATM banking, the higher the liquidity of the banks and this could be partly due to more efficient automated cash deposit rather than the long queues in the banking halls. Ghodrati (2014) found that the electronic banking and the expansion of its scale from POSs and ATMs to telephone banking; mobile banking and internet banking have increased banking transactions, significantly. He investigated on the amounts of transaction of ATM Machines, POSs and PIN PADs as the most important means of electronic banking. While other researchers conducted the study using ATM, internet banking and mobile banking (Sarlak & Hastiani, 2011) and additional of Point of Sale (POS) (Abu bakar, Shagari & Olesegun, 2015).

**3.0 Data & methodology**

This research will focus on the Bank liquidity of five commercial banks in selected Asian country namely Malaysia, Indonesia, Philippines, Thailand and Singapore starting from the year 2012 to 2017. The variables used in this study are proxies of technology namely internet subscription, mobile celullar, Automated Teller Machine (ATM) and internet security. These variables were gathered from the World Bank. The liquidity risks were measured using liquid assets to deposits, liquid assets to total assets and loans to deposits which were translated into model 1, model 2 and model 3 (see table 1). These liquidity risks were collected from Fitch Connect, INCEIF Malaysia. The sampling technique was based on filtration process, taking into consideration only the bank that could fulfil the availability of the data from the period of 2012 to 2017. Table 1 shows the list of variables used in this study based on the following models. The Model 1, Model 2 and Model 2 representing the dependent variables, L1 was Liquid assets to total assets (liquid assets ratio), L2 was Liquid assets to deposit ratio and L3 was Loan-to-deposits ratio

*Model 1*

$$L1 = \alpha + \beta_1\, IntUser_{it} + \beta_2\, mobile_{it} + \beta_3\, ATM_{it} + \beta_4\, Intsec_{it} + \in_{it} \ldots (1)$$

*Model 2*

$$L2 = \alpha + \beta_1\, IntUser_{it} + \beta_2\, mobile_{it} + \beta_3\, ATM_{it} + \beta_4\, Intsec_{it} + \in_{it} \ldots (2)$$

*Model 3*

$$L3 = \alpha + \beta_1\, IntUser_{it} + \beta_2\, mobile_{it} + \beta_3\, ATM_{it} + \beta_4\, Intsec_{it} + \in_{it} \ldots (3)$$

Table 1: Variable used and expected sign of coefficient

| Variables | Model 1 – L1 | Model 2 – L2 | Model 3 – L3 |
|---|---|---|---|
| Internet Subscriber | Positive (+) | Positive (+) | Positive (+) |
| Mobile Cellular | Positive (+) | Positive (+) | Positive (+) |
| Automated Teller Machine (ATM) | Positive (+) | Positive (+) | Positive (+) |
| Internet Security | Positive (+) | Positive (+) | Positive (+) |

As show in table 1 all the entire variables expected sign were positive because through the use of technology it can enhance the bank liquidity. The research studies conducted by Oliner and Sichel (2000), Jorgenson and Vu (2005) and Reuter (2010) found that there is a significant relation between

technology and economic growth of country. This is similar to the bank liquidity that would enhance the level of bank's capability. The panel data analysis will be used to test the non-directional hypothesis whereby the null hypothesis indicates no significant relationship between the technology and bank liquidity. Meanwhile, the alternate hypothesis indicates a significance relationship between the technology and bank liquidity. Hence, the normality test was used to check on the normality of the data by looking into the rule of thumb in Skewness and Kurtosis. The logarithms (Ln) was conduct because the data is not normal. The static panel data technique is employed to test the relationship between the variables significant effect by using the Fixed Effect Model and Random Effect Model.

## 4.0 Finding & Analysis

### 4.1 Descriptive Statistics

Table 4.1 Descriptive Statistic

| Variable/ Descriptive | Mean | Standard Deviation | Min | Max | Skewness | Kutosis |
|---|---|---|---|---|---|---|
| Intuser | 51.834 | 22.750 | 14.52 | 84.45 | -0.116 | 1.748 |
| Mobile | 1.23e+08 | 1.25e+08 | 8067600 | 4.59e+08 | 1.303889 | 3.582 |
| ATM | 58.492 | 28.687 | 18.885 | 117.279 | 0.785 | 2.712 |
| Intsec | 40221.93 | 87055.15 | 1146 | 338925 | 2.744 | 9.423 |
| L1 | 33.071 | 22.191 | 15.38 | 106.65 | 1.846 | 6.247 |
| L2 | 14.512 | 6.050 | 4.44 | 28 | 0.301 | 3.187 |
| L3 | 99.252 | 29.551 | 68.47 | 190.32 | 5.201 | 1.566 |

Descriptive statistics as shown in Table 4.1 indicates the comparison mean of the dependent variable loan-to-deposit represent higher result of 99.252 and the maximum is 190.32 typically, the ideal loan-to-deposit ratio is 80% to 90%. A highest loan-to-deposit ratio of 100%, this means that the bank may not have enough liquidity to cover any unforeseen fund requirements. The normality of data distributions is analysed. It was found that the data were not normal and were transformed by using the natural logarithm.

### 4.2 Empirical finding

Table 4.2: Result on Regression Analysis Based on Pooled OLS

Dependent Variable: Bank's Liquidity (L1, L2, L3)

| Variables | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| dlnintuser | | | |
| β | 34.2296 | -6.030571 | 150.5611 |
| stat | 1.03 | -0.60 | 2.98 |
| Value | (0.314) | (0.552) | (0.007) *** |
| lnmobile | | | |
| β | -0.8273 | -1.849247 | 1.92528 |
| T-stat | -0.34 | -2.50 | 0.51 |
| P-Value | (0.740) | (0.021) ** | (0.613) |
| lnatm | | | |
| β | -28.35524 | 7.201229 | 11.3793 |
| T-stat | -5.10 | 4.30 | 1.34 |
| P-Value | (0.0001) *** | (0.0001) *** | (0.195) |
| dlnintsec | | | |
| β | -4.793173 | 0.6551 | -8.027276 |
| T-stat | -1.21 | 0.55 | -1.33 |
| P-Value | 0.241 | (0.589) | (0.199) |
| Constant | | | |
| β | | | |
| T-stat | 159.0419 | 19.0914 | 8.33424 |
| P-Value | 3.08 | 1.23 | 0.11 |
| | (0.006) *** | (0.234) | (0.917) |
| Stat | 7.47 | 8.50 | 4.44 |

| | | | |
|---|---|---|---|
| P value | (0.0001) *** | (0.0004) *** | (0.0099) *** |
| R Squared | 0.5991 | 0.6297 | 0.4701 |
| BP LM test<br>P value | (1.00) | (1.00) | (1.00) |
| No of Observtion | 30 | 30 | 30 |

Note: the values in the parentheses are p-values based on ***, **, * indicates significant at 99%, 95% and 90% respectively.

The Breusch-Pagan Lagrange Multiplier (BP LM) test was used to test for the poolability of the panel data. Table 4.2 shows the result of regression analysis between the three Model that determine the bank's liquidity ratio with the technology reject the null hypothesis, implying the data can be pooled to BP LM test. From the four variables only Automated Teller Machine has the significant relationship with the Model 1 and Model 2 that indicates the liquidity assets ratios and liquid assets to deposits ratio respectively. However, ATM was positively correlated with Model 3. This finding is consistent with Kajuju N.K (2016) the more the banks embrace ATM banking, the higher the liquidity of the banks and this could be partly due to more efficient automated cash deposit rather than the long queues in the banking halls. The mobile cellular shows that only Model 2 had the significant relationship, while Model 1 and Model 3 were explained differently. Based on the above table, Model 3 has positive correlation with the loan-to-deposit ratio. This shows that the increasing number of mobile cellular can enhance the ability of banks to cover loan losses and withdrawals by their customers. Banks have to make sure there is an adequate liquidity to cover loans. As for the internet security, all variables are insignificant and fail to reject the null hypothesis, except Model 2 which was positively correlated with the internet security. This research also reveals the result of rejected the null hypothesis of internet users towards the loan-to-deposits ratio. The number of internet users affected the bank liquid assets to deposit ratio to decrease, hence affecting the deposits. The decrease of deposits affected the bank's capability to meet the expected demand for cash and increased the liquidity risk of the bank which might not have enough liquidity to cover loans.

**5.0 Conclusion and Recommendation**

This research has examined the effect of technology towards banks' liquidity in five Southeast Asian commercial banks countries – Indonesia, Malaysia, Philippines, Thailand and Singapore. It is observed that the liquidity risk that become the essentials element for banks stability in the financial system. Management of deposits is crucial because it can be withdrawn at any time, so banks must manage their liquidity to ensure they are capable of paying the withdrawals. The enhancement of banks' liquidity through technology becomes the subject matter in the research when the change occurred in the banking sector mostly triggered by inventions from technology. Therefore, it can be seen that there must be significant relation between technology and bank's liquidity.

The finding in this paper shows that the model 1 of liquid assets ratio is significant with the ATM. Significance of ATM shows that the more the banks embrace ATM banking, the higher the liquidity of the banks and this could be partly due to more efficient automated cash deposit rather than the long queues in the banking (Kajuju N.K, 2016). As for model 2 of liquid assets to deposits ratio where the ATM and mobile cellular is significant on result, hence it shows that the increasing number of ATM and mobile cellular will affect the bank deposit. The deposit is important because it might affect the bank's capability to meet the expected demand for cash. It also increased the liquidity risk of bank may not have enough liquidity to cover loans. The Model 3 of loan-to-deposits ratio is only significant with the internet. On the other hand, the internet security does not have significant relationship with the three models. The primary studies conducted by Al-nsour and Al-Hyari (2011) concluded that perception of security directly affect customer trust and perceived usefulness and affect perceived ease of use indirectly. Besides, Mia, Rahaman and Uddin (2007); Lichtenstein and Williamson (2006) also assessed that the challenged encountered by banks and their customers to improve internet banking. Amongst the reasons are lack of awareness of internet banking and its benefits, lack of internet confidence, competition with phone banking, difficult initial set up procedures, lack of trust, security and privacy risks and inadequate

knowledge and support. So, this is why internet securities play as vital roles to improve the banking activity.

The conclusion of this paper highlights the impact of the technology towards the bank's liquidity. Despite the increasing number of internet users and mobile cellular without the internet security it affects perception of security. This happens when the depositors lack of trust and needed support for their privacy risks. Thus, the policy makers should therefore improve the internet security to build the trust among the depositors to allow depositors.

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# Corporate governance and risk management: Role of risk and remuneration committees

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**Keywords**
Corporate Governance, Risk Management, Remuneration Committee, Risk Management Committee, Firm Performance, Financial Institutions, India

**Abstract**

*This paper examines the role of remuneration and risk committees in managing and monitoring the risk behaviour of Indian financial firms from the period 2008-2017. The results suggest that harmonized efforts of remuneration and risk management committees reduce information asymmetry. Counterintuitive findings suggest that a risk management committee hinders risk taking capacity, whereas remuneration committee motivates risk taking. Interestingly, when a director is a member with both committees, there exists a positive association between risk and firm performance, thus reducing information asymmetry among committees. The findings have theoretical and practical implication for the ongoing debate on measures to improve corporate governance of financial institutions.*

# Psychological effect on capital structure: The impact of overconfidence on firm's leverage decision in Malaysia.

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**Keywords**
Managerial Overconfidence, Capital Structure and Leverage

**Abstract**

*The paper is made with an attempt to bridge the gap in literature by offering empirical evidence about psychological effect on capital structure and its impact on firm's leverage decision in Malaysian public listed company. The secondary data for analysis is retrieved from Annual Report of public listed companies selected from Bursa Malaysia for five years period from 2014-2017. The study aims to determine the relationship between the managerial overconfidence and capital structure decisions. Applying correlations and multiple regression analysis, the results expected to show that there is a significant positive association between managerial overconfidence with firm's decision on capital structure.*

## Introduction

Capital structure has been broadly studied not only by academic researcher but also by the financial analyst. This is due to the facts that one of the main functions of a corporate finance manager is to determine the firm's financing decisions or known as the capital structure decisions. There are various studies conducted to investigate the factors of determining firm's capital structure and it had been widely accepted in corporate world. Example of the theory of capital structure are trade-off theory, pecking order theory and agency cost theory. However, this theory highlighted on applying basic data oriented like agency costs, asymmetric information and transaction cost (Oliver, 2005).

Recently, the researcher also interested to study both human psychology and behavior towards capital structure decision. For more than two decades, researchers have become increasingly attracted in determining the backgrounds of corporate financing decision. Even though we can say that Malaysian are quite familiar with this topic but some companies in Malaysia suffered from debt burden. Nevertheless, companies frequently choose very different level of corporate leverage although they are similar in terms of firm fundamentals.

Most of the previous studies support traditional financial theories in debating determinants of capital structure such as Trade-off Theory (Miller, 1977), Pecking Order Theory (Myers and Majluf, 1984; Myers, 1984) and Agency Theory (Jensen and Meckling, 1976). However, these studies focusing on firm fundamental characteristics in investigating corporate financing decision. Less attention was given to empirically study other potential factors mainly behavioral finance. The possible roles of human specifically the financial managers in deciding capital structure choice cannot be ignored (Barros and da Silveira, 2009). Due to this, we consequently have a purpose to investigate the effects of human primarily CEO characteristics towards corporate financing decision.

Based on Barros and Da Silveira (2009), they view that managers and financial market participants always act rationally. Yet, psychologists believe that people are not completely rational. They tend to overestimate or underestimate in making their corporate decision when they are irrational. Overconfidence can occur when they overestimate their decision and is closely related to their personal behavior (Wei et al., 2011). Li et al. (2009) explain that overconfidence is a general miscalibration in beliefs. Additionally, they added that overconfident people always underestimate the dispersion of risky processes.

Moreover, Nofsinger (2003) found that overconfidence driven corporate managers to make corporate investment, do more acquisitions and employ more debt financing. It was further supported by Hackbarth (2008) where he confirms that overoptimistic and overconfident managers issue new debt more

often and choose higher debt levels as a source of firm financing. Furthermore, it was suggested that an optimistic society is more willing to take on additional debt to finance the increasing habit in spending. Thus, a question arises here is financial manager overconfidence behavior contributing any significant influence in determining the corporate financing decision?

As an extension to the discussion, Skala (2008), define overconfidence as miscalibration. Meaning that, overconfidence can be classified as the difference between accuracy rate and probability assigned for decision making problem. Meanwhile in financial context, overconfidence is defined as interpretation of one's own knowledge or private information or overestimation for the certainty.

Psychologists believe that individuals are especially overconfident about consequences they believe are under their control (March and Shapira, 1987) and to which they are highly keen to do (Weinstein and Klein, 2002). Psychological discover that overconfidence bias brings people to overestimate their ability to control events and underestimate risks. Hence, overconfident managers are exposed to underestimate financial distress costs but overestimate their performance and knowledge.

**Literature Review and Hypotheses**

**Review of theories of capital structure**

There are two widely accepted theories under capital structure: The Trade-Off theory (hereafter TOT) and Pecking Order Theory (POT). For TOT, this theory recognizes the existence of bankruptcy cost and as a result argue that debt financing has its benefits. This theory can be considered in order to enjoy a reduction in tax and therefore maximizing the firm's value. However, problem arise if the firms cannot pay its debt, they will face with bankruptcy problem.

Recently, there is a new emerging idea of finance literature considers bounded rationality and associated behaviors of decision makers as features of financial phenomena (Subrahmanyam,2008). Moreover, Oliver (2005) point out an individual manager's characteristics has a potential in determining firm's financial leverage. The behavioral finance study proposes the Upper-Echelon theory (UET) to explain this phenomenon.

Similarly, based on Ricciardi and Simon (2000), behavioral finance attempts to explain the what, why and how to finance and invest from a human perspective. Baker, Ruback, and Wurgler (2004) claim that behavioral corporate finance as more realistic behavioral assumptions and thus suitable to replaces traditional rationality assumptions. Shefrin (2001) signifies that there are two keys behavioral barriers to the process of value maximization. The first barrier, which he calls "behavioral cost," potentially weaken value creation since it is internal to the firms. Cognitive imperfections and emotional influences are linked with errors of managers due to the existence of behavioral cost. (Vasiliou and Daskalakis, 2009:20).

**2.2 Managerial overconfidence and corporate financing decision.**

Utmost all the psychology studies correspond that people are not completely rational, comprising the head of the company. This imperfect characteristic includes managerial overconfidence. Hilary and Hsu (2011) explain that "static" overconfidence has been revealed to be a mutual type of cognitive bias. Brick et al. (2006) verify that overconfidence underestimate of the variance of risky processes and it is actually a general miscalibration in beliefs. They further say that managerial overconfidence is not only the CEOs overestimate their own ability to influence the probability of project success but also in corporate financing decisions. Boubaker and Mezhoud (2011) highlight as human beings, when they are not completely rational their beliefs and preferences may disturb the process of decision making. Commonly overconfident CEOs bear the penalties of insufficient internal funds by limiting their investment as a result of overestimating the return to their investment projects (Lin et al., 2005).

There is no specific pattern in the impacts of managerial overconfidence on corporate financing decision. Lin et al. (2005) investigate Forbes 500 CEOs and come up with result that overconfident CEOs have a great sensitivity of corporate investment to cash flow in equity dependent firms. Wei et al. (2011) further supported that overconfident managers normally underestimate the related risks but at the same time overestimate the profitability of investment projects. Thus, they consider that firm will have lower debt if it was led by stronger overconfident managers. They explain it as creditors reluctant to entertain firms facing high liquidity risks by rejecting debt financing applying by them.

Furthermore, Abdullah (2004) further supported that creditors is not willing to provide debt finance when firm is having low credit rating. When firms are overestimating the investment projects it

will make most bankers given low credit rating to the firm. Consequently, creditors are not willing to offer debt finance when managers are overconfident by under-assessing the related risk which providing low credit rating. Fairchild (2009) added the discussion on the effects of managerial overconfidence. On one hand, he agrees with a positive connection among overconfidence and liability in maintaining a business. Then again, his second model demonstrates that overconfidence has an impact in bringing down the level of debt when firm involves in a new task or project.

Accordingly, overconfident managers will perceive new project as value added to their firm and this will make them to decrease the debt level to finance new project. This finding is consistent with Coles et al. (2006) who agree that overconfident managers might cause the direct associations between debt maturity structure and asset structure declining.

Nevertheless, there is an opposite view on managerial overconfidence and corporate financing choice. Rechner and Dalton (1991) express that overconfident executive often possess higher asset liability ratio since they make use of higher level of debts. Hambrick and Cannella (2004) conclude that the major consequences of overconfidence managers in their decision making are as follows. First, they will tend to do more investment; Second, they will issue more debt to finance their investment and; Third, they experience high potential of default risk. They conclude that, as compared with rational managers, biased managers choose higher debt levels and thus worsening underinvestment. Almeida et al. (2005) consult US firms' CFOs and discover that overconfident CFOs invest more, use more debt, mainly debt that mature more than 1 year. This result is further supported by Malmendier and Tate (2005) whereby they found that overconfident managers in their financing preference may choose to go for internal financing, debt financing and then only equity financing as a last resort to obtain sources of fund for their firms. They consider that this is primarily due to overconfident managers may overrate their abilities to expand firm's value, and thus overestimate the investment project's future cash flows. The effect of managerial overconfidence on corporate financing choice is a vital issue for Malaysia and even more for the most part in the ongoing literature. But the past discoveries are uncertain. The paper wishes to make some contributions to the existing literature by examines the effect of managerial overconfidence on leverage decisions for Malaysian firm which is inadequate in Malaysia. It is anticipated that the finding from this study could fill in as an indicator in evaluating the effect of managerial overconfidence on corporate financing choice.

Hence,

$H_0$: The presence of managerial overconfidence is not significantly affecting firm's leverage decision.
$H_1$: The presence of managerial overconfidence is significantly affecting firm's leverage decision

**Data and methodology**

**Source of Data**

The primary sample consist of all construction firms listed in the Main Market in the Bursa Malaysia as at December 31, 2018. The researcher is using the secondary data. All the financial data are obtained from the firm's annual report. DataStream. Business Confidence Survey to measure managerial overconfidence characteristics is collected from Malaysian Institute of Economic Research. However, firm do not have the required information for calculating research variables will be excluded from the sample.

**3.2 Variables measurement**

**3.2.1 Independent variable**

The researcher uses Business Confidence Survey as a proxy to measure the managerial overconfidence following Oliver (2009), and Park and Kim (2009). Malaysia Business Confidence was represented by Business Conditions Index Survey which provide input for the Institute's economic forecasting activity. It is conducted on a quarterly basis to assist in assessing the short-term outlook for the economy. The survey findings are used to supplement the availability of quantitative information from convenional sources. A Business Conditions Index is constructed from the survey results which gives advance information that permits inferences to be drawn regarding emerging economic trends.

**3.2.2 Control variables**

Based on past studies, the researcher also identifies few variables as control variables. (a) Return on Assets (ROA): The study uses the value of the ratio of earnings after tax to total assets (Shah 2012;

Ahmed Sheikh and Wang 2013). (b) Firm Size (TA). It is measured by the total assets of the company (Pandey 2004).

**3.3 Research Model**

In order to explain how independent variables do affecting the dependent variable, panel regression was constructed as the following:

$LEVEit = \alpha 0 + \alpha 1CEOOF_{it} + \alpha 2ROA_{it} + \alpha 3SIZE_{it} + \varepsilon_{it}$

WHERE: αi, i=1-3, are coefficients of the respective independent and control variables.
LEVEit=leverage of firm i at time t, measured by total debts to total assets
CEOOF=CEO overconfidence of firm i at time t
ROAit=Return of asset of firm i at time t
SIZEit=Total Asset of firm i at time t
Eit= error term

**4.0 Findings and Analysis**

4.1 Descriptive statstics of the variables used in the analysis is shown in Table 1. The statistics reveal that Malaysian managers are having a confidence level of 97.76 out of 100 averagely. The return on assets for Construction Companies are averagely at 2.65 percent. Moreover, the findings also indicate that Malaysian construction companies have possess RM 920968995 in average of total assets. Finally, the average value of leverage ratio among the construction companies in Malaysia stand at 21.71 percent.

Table 1: Descriptive statistics of variables

| Variables | Mean | Kurtosis |
|---|---|---|
| CEOOF | 97.76 | 1.667693 |
| ROA | 2.65 | 36.66339 |
| TOTAL ASSETS | 920,968,995 | 25.3811 |
| LEVERAGE | 21.71 | 4.662434 |

Furthermore, researcher will analyze the kurtosis. When the value of the kurtosis is more than 2, the variable is normally distributed. The kurtosis values for each of the variable are shown in above table. CEOOF has value of kurtosis less than 2 which means that the data is not normally distributed. Because of that, the researcher needs to log the raw data.

Table 2 reports the results of the multiple regression analysis, using both pooled OLS and panel regression techniques. Using a pooled OLS regression, the empirical evidence shows a positive relationship between the CEOOF and leverage but not significant in explaining variation in leverage of the firms. This finding is consistent with Tomak (2013) indicating that there is not clear and enough evidence for the idea of overconfident managers tend to use high level of debt and thus management confidence and leverage relation is uncertain. However, based on the ROA depicts that profitability has a significantly positive relationship with debt ratio or leverage of the firms. This finding is consistent with Rabiah et al. (2012) suggested that positive relationship between profitability and leverage because high profitability will encourage companies to use debt financing to enjoy the benefits of tax shields on interest expenses. Other than that, the researcher also found positive and significant relationship between the total assets and leverage in line with Murray and Goyal (2009) whereby they found that firms that a large (in terms of assets) tend to have higher leverage.

Simple pooled OLS regression cannot adjust for firm specific or time-specific effects. Therefore, proceed with Breusch-Pagan Lagrange Multiplier (BPLM) test to classify whether all the data can be pooled or otherwise cannot be pooled. Data cannot be pooled refers to the null hypothesis where it must use the pooled OLS as to know the result of the relationship between dependent and independent variable.

The fixed effect model (FEM) and random effect model (REM) can solve this problem. Hausman test was conducted to determine a better model. The Hausman test statistics suggest the use of REM.

A multicollinearity test was conducted to check the for correlation among the regressors. Setting the cut off value for VIF at 10, the researcher finds no multicollinearity. As for heteroskedasticity, it will not suffer from heteroskedasticity problem when the condition of the p-value is more than 0.05. Both the Modified Wald and Wooldridge Test shows p-value is less than 0.05 As a final point, when the data is

suffering from auto correlation problem and heteroskedasticity, the Newey- West test will be conducted in order to resolve the problems.

Table 2: Regression results

| Variable | Pooled OLS | REM | REM with Robust |
|---|---|---|---|
| Constant | -12.33018 | -8.533679 | -8.533679 |
| | (0.341) | (0.228) | (0.244) |
| lnCEOOF | -0.9091475 | 0.5122749 | 0.5122749 |
| | (0.740) | (0.705) | (0.710) |
| lnROA | -0.2644146 | -0.3547744 | -0.3547744 |
| | (0.039) ** | (0.000) *** | (0.000) *** |
| lnTOTAL ASSETS | 0.9249948 | 0.4160398 | 0.4160398 |
| | (0.000) *** | (0.039) ** | (0.053) * |
| BPLM test | 0.0000 | | |
| Hausman test | 0.3709 | | |
| $R^2$ | 0.2605 | 0.2121 | 0.2121 |
| F-statistic | 13.03 | | |
| | (0.0000) | | |
| Wald Chi Square | | 24.76 | 17.96 |
| | | (0.0000) | (0.0004) |

Note: *, **, and *** denote the statistical significance at the 10%, 5% and 1% level, respectively.

Since there is autocorrelation problem, the researcher used White robust standard error to solve it. Therefore, the regression model from this study as follows:

Lev=-8.533679+0.5122749ceoof-0.3547744roa+0.4160398ta

As a result, the researcher failed to reject the null hypothesis whereby the presence of managerial overconfidence is not significantly affecting firm's leverage decision.

## 5. Conclusion

This study examines the relationship between managerial overconfidence and financial leverage decision for 38 public listed construction companies in Malaysia for the period of 2014 to 2017. The findings can be concluded as follows. (1) CEO overconfidence based on Business Confidence Index is positively related to leverage but insignificant in explaining the variation in leverage. (2) Firm's profitability (ROA) is significantly anf negatively related to leverage. (3) The higher the total asset, the higher the debts of a firm. For future research, it is recommended that more direct measurements for managerial overconfidence to be considered. In addition, future researcher might extend the study to determine the effect of CEO Leadership Style in determining leverage decision.

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# Performance measures of civil aviation companies in India and their financial health - an impact analysis

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**Keywords**
Civil Aviation Market, Insolvency, Financial and Non-Financial Measures, Financial Health, Altman Z-score model.

**Abstract**

*The Civil Aviation Industry in India is ranked among the top aviation industries across the globe. According to various reports, the Civil Aviation Market in India is likely to become one among the top five aviation markets by 2020. It is in a new era of expansion, influenced by the factors such as growing upper middle-class population as prospective customers and growing emphasis on regional connectivity, low-cost carriers due to high competition, modern airports, Foreign Investment, Advanced Information Technology etc. But since the last decade it has seen considerable changes in operations due to economic downturns and high fuel prices which caused air carriers in India to incur significant losses. The present scenario of Civil Aviation Business is vulnerable and in distress Condition. This sector is exposed to huge changes in Economic Environment and Market Variation. There is a need to assess the financial health of the companies and to assess the impact of financial and non-financial measures on Z-Score of the firms. Considering the above, an attempt is made to assess the impact of financial and non-financial measures on the on the Z-Score of selected civil aviation companies in India. This study is carried out for a period of twelve years i.e. from 2007-2018.*

## Introduction

The Indian civil aviation business in is vulnerable to economic changes, market fluctuations due to volatile environment. Therefore, the airline business in India is featured by unsteady growth subject to many challenging factors which include the volatility in jet fuel prices and increase in labour cost. In the competitive business environment, the success of the business depends upon many factors. Both financial and financial parameters collectively give an appropriate picture of the happenings in the company at basic level and industry at large

As far as insolvency and bankruptcy is concerned, the debtor is considered insolvent if he is unable to meet his economic obligations as they mature. He is not considered insolvent if his property and income are enough to cover the obligations. The calculation and analysis of Altman's Z-score is conducted for selected Indian carriers for measuring the financial health.

## Indian Aviation Sector and Present passenger traffic Scenario

The civil aviation market in India is all set to become the world's third largest by 2020. Total passenger traffic stood at a 190.1 million in FY15, registering an increase of 12.47 per cent. By 2020, passenger traffic at Indian airports is expected to increase to 421 million from 190.1 million in 2015. Domestic passenger traffic expanded at a compound annual growth rate (CAGR) of 11.8 per cent over FY06–15. The Airports Authority of India (AAI) aims to bring around 250 airports under operation across the country by 2020[6].

Domestic air passenger traffic increased by 23.20 percent in October 2016 on a year-on-year basis as carriers flew 86.72 lakh passengers in the month. In the same month last year, airlines carried 70.39 lakh passengers. In September 2016, the passenger traffic rose by 23.46 percent to 82.30 lakh as compared to 66.66 lakh in corresponding month previous year. Passengers carried by domestic airlines during January-October 2016 were 813.70 lakh as against 660.60 lakhs during the corresponding period of previous year thereby registering a growth of 23.18 percent[7].

[6]www.acekp.in
[7] www.ibef.org/industry/indian-aviation.aspx

**Review of Literature**

Saifuddin S.K (2018) studied the financial health of select Indian Aviation Companies. Four civil aviation companies in India were selected and it was found that two companies in the study are the potential candidate of bankruptcy despite of many improvements. Mushtaq Khan M and Safiuddin S.K. (2016) tried to predict the bankruptcy of selected two Indian Aviation companies and findings of the study revealed that both the companies are a potential candidate of bankruptcy despite of many improvements.

Monique Timmermans (2014) studied U.S. Corporate Bankruptcy Predicting models to see how accurate are the bankruptcy predicting models of Altman (1968), Ohlson (1980) and Zmijewski (1984) after recalibration, when they are applied to U.S. listed firms in the period after the BACPA change in bankruptcy law? The predictive power of all three models is low, but for Altman (1964) and Ohlson (1980) bankruptcies are overpredicted, as was expected. For the model of Zmijewski (1984), the amount of non-bankruptcies was overpredicted, which is contrary to what was expected. Ummed & Omvir (2012) in their study Distress Prediction Model-Model for predicting Bankruptcy in Aviation Industry found that of the three firms having Z-Score less than 2.60, two have been declared bankrupt. The lending institution has recalled term loan from one firm. Only one firm is financially stable.

Campbell (2008) in the study proposed a reduced form of econometric model using both accounting and market data to predict corporate bankruptcies and failures. The study reveals that their model is more accurate than other alternatives. A more accurate reduced form model of them confirms the negative association between distress risk and equity returns too. Boritz et al. (2007) studying bankruptcy in Canada founds predictive accuracy of Altman's and Ohlson's original models are higher than re-estimated model. They also compared the accuracy of models developed for Canadian firms, namely, Springate (1978), Altman and Levallee (1980), and Legault and Veronneau (1986). The study concludes the Canadian models are being simpler and requiring less data. All models have stronger performance with the original coefficients than the re-estimated coefficients.

Sun and Feng Hui (2006) revealed that bankruptcy not only brings much individual loss to interest parts such as stockholders, creditors, managers, employees, etc., but also too much bankruptcy will greatly shock the whole country's economic development. Altman (1968) was the first one to use multivariate statistical modeling in his "Z-score model" to find combinations of financial ratios that can indicate bankruptcy risk. The ratios included in Altman's model were for example a return on assets ratio and a leverage ratio. If we look at the recent past, Indian aviation has seen one of the best aviation company going bankrupt namely kingfisher airlines. Moreover, Indian aviation sector has been in trouble in recent times because of financial distress and it is common for both private as well as government owned Air India.

**Hypotheses of the Study**

$H_{01\text{-}04}$ There is no significant impact of financial measures (include liquidity, profitability and efficiency performance) on Z- Score (financial health) of Select Indian Civil Aviation Companies

$H_{05\text{-}10}$ There is no significant impact of Occupancy Ratio on Z- Score (financial health) of of Select Indian Civil Aviation Companies

**Objective of the Study**

The primary objective of the study is to assess the impact of Financial and Non-Financial Measures on the Financial Health as measured by Z-score of select Indian Civil Aviation Companies.

**Research Methodology**

The research places an emphasis on analysing the financial health of select Indian companies in the Aviation Industry. The impact of financial measures (liquidity, profitability and efficiency performance measured through current ratio, return on equity and receivables turnover ratios) on Financial Health is also assessed and Impact of Non-Financial measure i.e. occupancy ratio on Financial Health is also assessed. Regression analysis has been carried out for assessing the impact.

The selection of the companies is based upon market capitalisation. The top four private civil airline companies of India have been selected for the study. The data that has been used for this study is based upon the financial and non-financial indicators drawn from the databases and annual reports. Hypotheses have been framed and tested at 10% level of significance.

**Techniques of Data Analysis**

The tools which have been used for the analysis are selected ratios used for measuring financial performance include liquidity, profitability and efficiency performance. The non-financial measure used is occupancy ratio of passengers travelled through a particular airline company. Altman's Z-score that puts together five financial ratios (Four for service industry) generated using the following formula for publicly traded service sector firms[8].

$Z\text{-score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$ (original Z-Score Model)

$Z\text{-score} = 3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$ (New Z-Score Model)

Where

$X_1$ = *Working capital/total assets*
$X_2$ = *Retained earnings/total assets*
$X_3$ = *EBIT/total assets*
$X_4$ = *Equity /total liabilities*
$X_5$ = *Sales/ Total Assets*

**Scope of the study**

Scope of the study is confined to assessing the impact of Financial and Non-Financial measures on Financial Health of selected Civil Aviation companies in India using regression analysis. The study was carried out for a period of 10 years from 2007 to 2018. The overall financial indicators of the companies are assessed for measuring the liquidity, profitability performance and efficiency using selected ratios. The non-financial measure used is occupancy ratio of passengers travelled through an airline company.

**Limitations of the study**

Top players in the sector have been considered for the study based on market capitalization. The study is limited for a period of twelve years and for some of the companies the data was not available for all the twelve years. The data used for the study is based upon the financial reports and financial data available from various databases

**Financial Health of Select Indian Aviation Companies Using Altman Z-Score Model**

The Z-score of Indigo for 2008 is 0.32 which means the company was in "distress zone" for this year, but for the year 2009 the company has performed well and the score increased to 6.20 and showed an increasing trend for the next two years as well. So, the company was in "safe zone" for the years 2009, 2010, and 2011. But showed a declining trend and fall to 4.97 in 2012, which reveals that the company was in "grey zone". But again, increased in 2013 and declined in 2014, the score falls down to 3.26, which means it is in "distress zone" again. For the year 2015 and 2016 the company has improved its performance and the Z-score has raisen to 6.55, which is "safe zone". (see table 02)

The Z-score of Jet Airways in 2007 was 4.80 which means the company was in "grey zone" for this year, but for the year 2008 the company has not performed well and the Z-score has gone down and reached to 3.35 and it has been almost same for 2009. So, the company was in "distress" for the years 2008, 2009, and 2010. But the trend has continued, and the Z-score has fallen in 2011 to 1.10, which means the company was in "distress zone" for the year 2011. But again, jet airways have not performed well 2012, in 2012 the Z-score falls to -1.18, which means it is in "distress zone" again. For the year 2013,14 and 2015 the z-score has fallen further, and the company was in "distress zone" In 2016 there has been a bit of improvement and the z-score has improved a bit, but still jet airways is in "distress zone". (see table 02)

The Z-score of Go Airlines for 2011 was -5.77 which means the company was in "distress zone" for this year, but for the year 2012 the company has not performed well, and the Z-score has gone further down and reached to -13.46. So, the company was in "distress" for the years 2012. But in 2013 company has performed good and thereby improving z-score, which was 4.66. So, the company was in "grey zone" for 2013. In 2014 the z-score had fallen further and reached to 1.96 keeping the company in "distress zone". The trend has continued, and z-score had fallen for 2015 and 2016 having z-score of -4.11 and -4.09 respectively and putting the company in "distress zone". there has been a bit of improvement and the z-score has improved a bit b but still Go airlines is in "distress zone". (see table 02)

[8] Altman, E. I., & Hotchkiss, E. (2006). Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt.

The z-score of spice jet was -0.16 which is very low and shows the company was in "distress zone" for this year. In 2008, there had been some improvement and Z-score had shown some improvement and reached to 1.24, but still it is "distress zone". In 2009 the companys performance has worsened and the z-score decreased to -4.18, which is again "distress zone". The Z-score was -1.88 for 2010, 0.92 for 2011, -8.22 for 2012 and -1.79 in 2013, which means company was in "distress zone" for all these years. For 2014 the z-score had further decreased to -9.42 and in 2015 it had crossed all previous own records and reached to -11.16, and in 2016 there had been a good recovery with the z-score reaching to 0.086, but for all the years of study the spice jet was in "distress zone". (see table 02)

**Impact of Financial Measures on Financial Health of Select Indian Aviation Companies:**

Impact of Liquidity, profitability and efficiency on Financial Health of Indigo

The calculated R square is 0.619 which reflects that a major change in Z-Score is caused efficiency performance, liquidity performance and profitability performance. It is depicted from the analysis that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Financial Health of the firm as the significant value is 0.156. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm is 0.406. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.603. There is no significant impact of profitability performance measured through return on equity on Z-Score of the firm as the significant value is 0.121. (table.03)

**Impact of Liquidity, profitability and efficiency on Financial Health of Jet Airways**

The calculated R square is 0.654 which reflects that a major change in Z-Score is caused by the independent variables/predictor variable i.e. efficiency performance, liquidity performance and profitability performance. It is depicted from the table that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.078. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.308. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.056. There is no significant impact of profitability performance measured through return on equity on Z-Score of the firm as the significant value is 0.898 (table.04)

**Impact of Liquidity, profitability and efficiency on Financial Health of Go Air**

The calculated R square is 0.234 which reflects that 23.4% of change in Z-Score is caused by efficiency performance, liquidity performance and profitability performance. It is depicted from the table that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.671. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.957. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.435 (table.05)

**Impact of Liquidity, profitability and efficiency on Financial Health of Spice Jet**

The calculated R square is 0.446 which reflects that a 44.6% of change in Z-Score is caused by efficiency performance, liquidity performance and profitability performance. It is depicted from the table that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.127. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.412. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.377. (table.06)

**Impact of Non-Financial Measures on Financial Health of Select Indian Aviation Companies**:

Impact of Occupancy Ratio on Financial Health of Indigo

The calculated R square is 0.251 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.170. (table.07)

Impact of Occupancy Ratio on Financial Health of Jet Airways

The calculated R square is 0.608 which reflects that a major change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.008. (table.08)

Impact of Occupancy Ratio on Financial Health of Go Air

The calculated R square is 0.173 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.412. (table.09)

Impact of Occupancy Ratio on Financial Health of Spice Jet

The calculated R square is 0.069 which reflects that a negligible change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.496. (table.10)

Hypotheses Testing

| S. No | Hypotheses of the study | Sig. Value | Accepted/Rejected |
|---|---|---|---|
| 1 | There is no significant impact of financial measures on Z- Score (Financial Health) of Indigo | 0.156 | Accepted |
| 2 | There is no significant impact of financial measures on Z- Score (Financial Health) of Jet Airways | 0.078 | Accepted |
| 3 | There is no significant impact of financial measures on Z- Score (Financial Health) of Go Airlines | 0.671 | Accepted |
| 4 | There is no significant impact of financial measures on Z- Score (Financial Health) of Spice Jet Ltd | 0.127 | Accepted |
| 5 | There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Indigo | 0.170 | Accepted |
| 6 | There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Jet Airways | 0.08 | Rejected |
| 7 | There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Go Airlines | 0.412 | Accepted |
| 8 | There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Spice Jet Ltd | 0.496 | Accepted |

**Findings**

**The following are the major findings from the study**

The Z-score of Indigo for the year 2016 reveals that the financial health of the company is in "safe zone". So, there are very less or no chances of company going bankrupt in the next two years as per this model. There was no significant impact of liquidity, profitability and efficiency on z-score of the company. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm

The Z-Score of Jet Airway for the year 2016 has improved over the previous year but the score reveals that the company is still in "distress zone". Therefore, it is revealed that the airline firm is a potential bankruptcy candidate. There was no significant impact of liquidity, profitability and efficiency on z-score of the company. It is also revealed from the analysis that there is significant impact of occupancy ratio on equity on Financial Health of the firm

Go Airlines carried out with the help of z-score reveals that in most of the years it is in "distress zone". The Z Scores calculated shows a varied trend over the years. There was no significant impact of liquidity, profitability and efficiency on Financial Health of the company. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Financial Health of the firm

The analysis of Spice Jet Ltd made through z-score reveals that there had been a good recovery with the z-score reaching to 0.086, but for all the years of study the spice jet was in "distress zone". There was also no significant impact of liquidity, profitability and efficiency on Financial Health of the company. It is

also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Financial Health of the firm

**Suggestions**

It is suggested that Jet Airways, Go Airlines and Spice Jet needs to enhance its earnings through expansion of the business and adopting new policies for development of the business. Several schemes may be introduced to attract customers and improve the earning ability of the firm. In terms of efficiency as calculated through financial measures, all the companies are under performers and reveal that there is a need to make effective utilization of assets and avoid blockage of funds. In terms of liquidity, Jet Airways, Go Airlines and Spice Jet can face liquidity crisis at any point of time, these companies need to improve their financial ability to meet their current obligations. Investment in current assets needs to be concentrated upon. In terms of growth all the selected companies performed well, but they should try to improve their growth and expand their market.

**Conclusion**

The Airline companies in India are prone to financial distress because of many reasons. The present study reveals that out of the selected Indian Airlines, the financial health of Indigo is very good, and it is in safe zone. The Z score of other three companies reveal that these companies reveal a poor financial health and lie in the distress zone as measured through Z-score model. These companies need to take necessary corrective measures to prevent them from possible bankruptcy.

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Table: 1-Occupancy Ratio or Passenger Load Ratio of Select Indian Civil Aviation Companies

| Year | Indigo | Jet Airways | Go Airlines | Spicejet Ltd |
|---|---|---|---|---|
| 2007 | - | 69.5 | - | - |
| 2008 | 72.7 | 69.2 | 77.4 | 73 |
| 2009 | 69.6 | 67.7 | 68.8 | 67 |
| 2010 | 80.0 | 77.4 | 78.2 | 78 |
| 2011 | 85.1 | 78.6 | 80.2 | 83 |
| 2012 | 82.3 | 79.3 | 77.3 | 75 |
| 2013 | 81.1 | 78.8 | 75.1 | 74 |
| 2014 | 77.2 | 78.2 | 74.3 | 72 |
| 2015 | 79.8 | 82.3 | 79.1 | 81 |
| 2016 | 84.0 | 82.4 | 83.7 | 91 |
| 2017 | 85.2 | 81.8 | 88.0 | 92.9 |
| 2018 | 88.2 | 84.3 | 88.6 | 94.7 |

(Source: calculated from the data collected from http://dgca.nic.in)

Table:02-Financial Health (Z-Score Model) of Select Indian Aviation Companies

| Year | Indigo | Jet Airways | Go Airlines | Spicejet Ltd |
|---|---|---|---|---|
| 2007 | - | 4.80 | - | -0.16 |
| 2008 | 0.32 | 3.35 | - | 1.24 |
| 2009 | 6.20 | 3.48 | - | -4.18 |
| 2010 | 7.84 | 3.75 | - | -1.88 |
| 2011 | 7.26 | 1.10 | -5.77 | 0.92 |
| 2012 | 4.97 | -1.18 | -13.46 | -8.22 |
| 2013 | 5.78 | -2.68 | 4.66 | -1.79 |
| 2014 | 3.26 | -5.53 | 1.96 | -9.42 |
| 2015 | 5.05 | -10.20 | -4.11 | -11.16 |
| 2016 | 6.55 | -4.75 | -4.09 | 0.086 |
| 2017 | 7.18 | -5.01 | - | -3.85 |
| 2018 | 8.90 | -6.35 | - | 0.71 |

(Source: calculation based upon data from www.acekp.in)

Table: 03-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Indigo

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Z Score | 5.2478 | 2.29142 | 9 |
| Current ratio | 1.4767 | .79204 | 9 |
| Return on equity | 118.2078 | 124.60561 | 9 |
| Receivables Turnover | 2.0500 | .55675 | 9 |

Correlations

| | | Z Score | Current ratio | Return on equity | Receivables Turnover |
|---|---|---|---|---|---|
| Pearson Correlation | Z Score | 1.000 | .594 | .301 | -.141 |
| | Current ratio | .594 | 1.000 | -.232 | -.186 |
| | Return on equity | .301 | -.232 | 1.000 | .456 |
| | Receivables Turnover | -.141 | -.186 | .456 | 1.000 |
| Sig. (1-tailed) | Z Score | . | .046 | .216 | .359 |
| | Current ratio | .046 | . | .274 | .316 |
| | Return on equity | .216 | .274 | . | .109 |
| | Receivables Turnover | .359 | .316 | .109 | . |
| N | Z Score | 9 | 9 | 9 | 9 |
| | Current ratio | 9 | 9 | 9 | 9 |
| | Return on equity | 9 | 9 | 9 | 9 |
| | Receivables Turnover | 9 | 9 | 9 | 9 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .787[a] | .619 | .390 | 1.78937 |

a. Predictors: (Constant), Receivables Turnover, Current ratio, Return on equity

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 25.996 | 3 | 8.665 | 2.706 | .156[b] |
| | Residual | 16.009 | 5 | 3.202 | | |
| | Total | 42.005 | 8 | | | |

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio, Return on equity

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 3.460 | 2.921 | | 1.184 | .289 | -4.049 | 10.969 |
| | Current ratio | 1.960 | .825 | .678 | 2.377 | .063 | -.159 | 4.080 |
| | Return on equity | .011 | .006 | .587 | 1.866 | .121 | -.004 | .026 |
| | Receivables Turnover | -1.162 | 1.282 | -.282 | -.907 | .406 | -4.458 | 2.133 |

a. Dependent Variable: Z Score

Table: 04-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Jet Airways

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Z Score | -.7860 | 4.95789 | 10 |
| Current ratio | .6970 | .48362 | 10 |
| Return on equity | 5.0400 | 8.25445 | 10 |
| Receivables Turnover | 27.5730 | 4.77453 | 10 |

Correlations

| | | Z Score | Current ratio | Return on equity | Receivables Turnover |
|---|---|---|---|---|---|
| Pearson Correlation | Z Score | 1.000 | .763 | -.154 | .576 |
| | Current ratio | .763 | 1.000 | -.176 | .441 |
| | Return on equity | -.154 | -.176 | 1.000 | -.250 |
| | Receivables Turnover | .576 | .441 | -.250 | 1.000 |
| Sig. (1-tailed) | Z Score | . | .005 | .335 | .041 |
| | Current ratio | .005 | . | .314 | .101 |
| | Return on equity | .335 | .314 | . | .243 |
| | Receivables Turnover | .041 | .101 | .243 | . |
| N | Z Score | 10 | 10 | 10 | 10 |
| | Current ratio | 10 | 10 | 10 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| | Return on equity | 10 | 10 | 10 | 10 |
| | Receivables Turnover | 10 | 10 | 10 | 10 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .809[a] | .654 | .481 | 3.57182 |

a. Predictors: (Constant), Receivables Turnover, Return on equity, Current ratio

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 144.678 | 3 | 48.226 | 3.780 | .078[b] |
| | Residual | 76.548 | 6 | 12.758 | | |
| | Total | 221.226 | 9 | | | |

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Return on equity, Current ratio

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -14.130 | 7.522 | | -1.879 | .109 | -32.535 | 4.275 |
| | Current ratio | 6.503 | 2.751 | .634 | 2.364 | .056 | -.229 | 13.235 |
| | Return on equity | .020 | .149 | .033 | .134 | .898 | -.346 | .385 |
| | Receivables Turnover | .316 | .283 | .304 | 1.115 | .308 | -.377 | 1.009 |

a. Dependent Variable: Z Score

Table: 05-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Go Air

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Z Score | -3.4683 | 6.34769 | 6 |
| Current ratio | .1850 | .07893 | 6 |
| Return on equity | .0000 | .00000 | 6 |
| Receivables Turnover | 1.2717 | .74679 | 6 |

Correlations

| | | Z Score | Current ratio | Return on equity | Receivables Turnover |
|---|---|---|---|---|---|
| Pearson Correlation | Z Score | 1.000 | .483 | . | .166 |
| | Current ratio | .483 | 1.000 | . | .400 |
| | Return on equity | . | . | 1.000 | . |
| | Receivables Turnover | .166 | .400 | . | 1.000 |
| Sig. (1-tailed) | Z Score | . | .166 | .000 | .377 |
| | Current ratio | .166 | . | .000 | .216 |
| | Return on equity | .000 | .000 | . | .000 |
| | Receivables Turnover | .377 | .216 | .000 | . |
| N | Z Score | 6 | 6 | 6 | 6 |
| | Current ratio | 6 | 6 | 6 | 6 |
| | Return on equity | 6 | 6 | 6 | 6 |
| | Receivables Turnover | 6 | 6 | 6 | 6 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .484[a] | .234 | -.277 | 7.17320 |

a. Predictors: (Constant), Receivables Turnover, Current ratio

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 47.101 | 2 | 23.551 | .458 | .671[b] |
| | Residual | 154.365 | 3 | 51.455 | | |
| | Total | 201.466 | 5 | | | |

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -10.493 | 8.503 | | -1.234 | .305 | -37.554 | 16.568 |
| | Current ratio | 39.842 | 44.335 | .495 | .899 | .435 | -101.252 | 180.936 |
| | Receivables Turnover | -.272 | 4.686 | -.032 | -.058 | .957 | -15.185 | 14.641 |

a. Dependent Variable: Z Score

Table: 06-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Spice jet

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Z Score | -3.4564 | 4.57057 | 10 |
| Current ratio | .5090 | .27859 | 10 |
| Return on equity | .0000 | .00000 | 10 |
| Receivables Turnover | 3.9390 | 2.96178 | 10 |

Correlations

| | | Z Score | Current ratio | Return on equity | Receivables Turnover |
|---|---|---|---|---|---|
| Pearson Correlation | Z Score | 1.000 | .621 | . | -.612 |
| | Current ratio | .621 | 1.000 | . | -.707 |
| | Return on equity | . | . | 1.000 | . |
| | Receivables Turnover | -.612 | -.707 | . | 1.000 |
| Sig. (1-tailed) | Z Score | . | .028 | .000 | .030 |
| | Current ratio | .028 | . | .000 | .011 |
| | Return on equity | .000 | .000 | . | .000 |
| | Receivables Turnover | .030 | .011 | .000 | . |
| N | Z Score | 10 | 10 | 10 | 10 |
| | Current ratio | 10 | 10 | 10 | 10 |
| | Return on equity | 10 | 10 | 10 | 10 |
| | Receivables Turnover | 10 | 10 | 10 | 10 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .668[a] | .446 | .287 | 3.85889 |

a. Predictors: (Constant), Receivables Turnover, Current ratio

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 83.774 | 2 | 41.887 | 2.813 | .127[b] |
| | Residual | 104.237 | 7 | 14.891 | | |
| | Total | 188.011 | 9 | | | |

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -4.484 | 5.456 | | -.822 | .438 | -17.386 | 8.418 |
| | Current ratio | 6.161 | 6.531 | .376 | .943 | .377 | -9.281 | 21.604 |
| | Receivables Turnover | -.535 | .614 | -.347 | -.871 | .412 | -1.988 | .917 |

a. Dependent Variable: Z Score

Table: 07-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Indigo

Variables Entered/Removed[a]

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | INDIGO_OR[b] | . | Enter |

a. Dependent Variable: INDIGO_Z

b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .501[a] | .251 | .144 | 2.120 |

a. Predictors: (Constant), INDIGO_OR

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 10.542 | 1 | 10.542 | 2.345 | .170[b] |
| | Residual | 31.463 | 7 | 4.495 | | |
| | Total | 42.005 | 8 | | | |

a. Dependent Variable: INDIGO_Z

b. Predictors: (Constant), INDIGO_OR

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -12.457 | 11.582 | | -1.076 | .318 |
| | INDIGO_OR | .224 | .146 | .501 | 1.531 | .170 |

a. Dependent Variable: INDIGO_Z

Table: 08-Regression Analysis showing Impact of Occupancy Ratio Health as measured by Z-score of Jet Airways

Variables Entered/Removed[a]

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Jet_OR[b] | . | Enter |

a. Dependent Variable: Jet_Z
b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .780[a] | .608 | .559 | 3.292 |

a. Predictors: (Constant), Jet_OR

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 134.551 | 1 | 134.551 | 12.419 | .008[b] |
| | Residual | 86.675 | 8 | 10.834 | | |
| | Total | 221.226 | 9 | | | |

Coefficients[a]

a. Dependent Variable: Jet_Z
b. Predictors: (Constant), Jet_OR

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 53.188 | 15.351 | | 3.465 | .009 |
| | Jet_OR | -.707 | .201 | -.780 | -3.524 | .008 |

a. Dependent Variable: Jet_Z

Table: 09-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Go Air

Variables Entered/Removed[a]

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | GoAir_OR[b] | . | Enter |

a. Dependent Variable: GoAir_Z
b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .416[a] | .173 | -.034 | 6.454 |

a. Predictors: (Constant), GoAir_OR

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 34.853 | 1 | 34.853 | .837 | .412[b] |
| | Residual | 166.613 | 4 | 41.653 | | |
| | Total | 201.466 | 5 | | | |

Coefficients[a]

a. Dependent Variable: GoAir_Z
b. Predictors: (Constant), GoAir_OR

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 55.876 | 64.929 | | .861 | .438 |
| | GoAir_OR | -.758 | .829 | -.416 | -.915 | .412 |

a. Dependent Variable: GoAir_Z

Table: 10-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Spice Jet

Variables Entered/Removed[a]

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Spice_OR[b] | . | Enter |

a. Dependent Variable: Spice_Z
b. All requested variables entered.

a. Predictors: (Constant), Spice_OR

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .262[a] | .069 | -.064 | 4.838 |

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 12.085 | 1 | 12.085 | .516 | .496[b] |
| | Residual | 163.853 | 7 | 23.408 | | |
| | Total | 175.938 | 8 | | | |

a. Dependent Variable: Spice_Z
b. Predictors: (Constant), Spice_OR

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -17.178 | 18.657 | | -.921 | .388 |
| | Spice_OR | .173 | .241 | .262 | .719 | .496 |

a. Dependent Variable: Spice_Z

# Measuring Global FINTECH Readiness

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**Keywords**
FINTECH, digital readiness, blockchain, cryptocurrency, rule-based, scores, maturity

**Abstract**

*This paper presents a way to "score" FINTECH readiness-for-inclusiveness. A FINTECH country capability maturity model is developed to measure a country's FINTECH readiness, especially as it involves cross-border payments, blockchain, smart contracts and cryptocurrency, among other current and emerging financial technologies. The model is then conceptually converted to rules-driven data base that scores FINTECH maturity and recommends what steps should be taken by countries that want to expand their FINTECH capabilities.*

## Introduction

Inclusiveness is a key FINTECH objective. Ideally, everyone can participate. But some countries, companies and banks will not be included in the revolution in financial technology already well underway. Their digital and emerging technology capabilities fall short. Their adoption of FIN-TECH technology is too slow. A transactional level of "maturity" is required for participation.

## FINTECH Maturity

"FINTECH maturity" can be defined by a country's digital infrastructure and its ability (and willingness) to adopt emerging digital technologies, especially those associated with FINTECH.

Countries that have a well-developed digital infrastructure – such as Sweden and Norway – can leverage FINTECH so long, of course, they are inclined to do so. That said, the correla-tion between highly developed digital countries and FINTECH adoption is predictably high, where the converse is unfortunately low.

In order for countries to leverage FINTECH, they must possess basic and always-improving digi-tal infrastructure capabilities (broadband, cloud, big data, cybersecurity, etc.) simply because FINTECH requires a modern digital infrastructure (which can evolve, be leapfrogged or pur-chased). They must adopt FINTECH as both a process and a technology.

### Digital Readiness

Several organizations and companies collect data about both digital infrastructures and emerg-ing technology adoption. The World Economic Forum, for example, has developed the Network Readiness Index – the NRI – which assesses *"countries' ability to capitalize on the digital revolu-tion and their preparedness to benefit from the emerging Fourth Industrial Revolution … the Index aggregates data from 53 indicators … networked readiness rests on whether a country possesses the drivers necessary for digital technologies to unleash their potential."* The NRI uses 4 broad drivers with a subset of 53 indicators (World Economic Forum, 2016):

Environment

1. Political and regulatory environment (9 indicators)
2. Business and innovation environment (9 indicators)

Readiness

3. Infrastructure (4 indicators)
4. Affordability (3 indicators)
5. Skills (4 indicators)

Usage

6. Individual usage (7 indicators)
7. Business usage (6 indicators)
8. Government usage (3 indicators)

**Impact**

9. Economic impacts (4 indicators)
10. Social impacts (4 indicators)

Another example is the Digital Evolution Index (DEI) developed at the Fletcher School at Tufts University (with help from *Mastercard* and *DataCash*). The DEI uses four broad clusters of indicators (Chakravorti and Chaturvedi, **2017)**:

**"Supply-Side Factors** (including access, fulfillment, and transactions infra-structure)
**Demand-Side Factors** (including consumer behaviors and trends, financial and Internet and social media savviness)
**"Innovations** (including the entrepreneurial, technological and funding eco-systems, presence and extent of disruptive forces and the presence of a start-up culture and mindset)
**"Institutions** (including government effectiveness and its role in business, laws and regulations and promoting the digital ecosystem)"

**Countries are scored across these four sets of indicators to measure their digital prowess.**

Yet another approach is CISCO's digital readiness scoring methodology which identifies three stages of digital readiness: "*activate (the lowest stage of digital readiness), accelerate (coun-tries in the middle stage) and amplify (those in the highest stage of digital readiness). Countries in the Activate stage are just starting out in their digital journey … countries in the Accelerate stage of digital readiness scored in the middle range with some component scores having room for improvement … countries at the highest stage of digital readiness include the United States, many countries in Western Europe, and some in Asia, such as Singapore, Japan, and Australia.*"

The indicators include:

Maturity of the Technology Infrastructure
Pace of Technology Adoption
Availability of Human Capital
Fulfillment of Society's Basic Needs
Ease of Doing Business
Amount of Business & Government Investment
Maturity of a Country's Start-Up Culture

Cisco found that digital readiness scores averaged 11.96, along a 0 – 25 scale. The scores ranged between 5.9 and 20.1. 118 countries were scored.

All three of these methods collect and interpret data and score/rank a country's ability to compete in an increasingly digital world. The scores and ranks are the first driver of a country's FINTECH maturity. The second driver is a country's commitment to the adoption of current and emerging financial technology, though without a solid digital infrastructure country cannot expect adopt and leverage FINTECH.

**Current & Emerging FINTECH Adoption**

The second set of FINTECH maturity drivers include investments in emerging technologies that enable FINTECH, as well as a specific commitment to the development of FNTECH capabilities.

FINTECH is a "*new tech that seeks to improve and automate the delivery and use of financial services. At its core, fintech is utilized to help … manage … financial operations, processes and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones (Kagan, 2019).* Countries need to commit to the adoption and deployment of FINTECH as part of their digital maturity and in order to compete in an increasingly FINTECH-active world.

Lists of FINTECH technologies usually include (Kagan, 2019):

Cryptocurrency/Digital Cash
Blockchain
Open Banking
Insurtech
Smart Contracts
Regtech
Underbanked Services

Robo-Advisors
Cybersecurity

Emerging FINTECH technology adoption is the second driver of FINTECH maturity. Research tells us that FINTECH technology adoption rates vary widely across countries. EY, for example, has developed an approach to measuring FINTECH adoption (Gulamhuseinwala, Hatch and Lloyd, 2017).

EY has identified five categories and 17 indicators to measure a country's FINTECH adoption. Note how far along China (69%) and India (52%) are against an average 33% adoption rate:

**Money Transfers & Payments**

Online foreign exchange
Pay via cryptocurrency
Overseas remittances
Online digital-only banks without branches
Nonbanks to transfer money
Mobile phone payment at checkout

**Financial Planning**

Online budgeting & financial planning tools
Savings & Investments
P2P platforms for high-interest investments
Investments in equity crowdfunding platforms & rewards crowdsourcing platforms
Online investment advice & investment management
Online stockbroking
Spreadbetting

**Borrowing**

Borrowing using P2P platforms
Borrowing using online short-term loan payments

**Insurance**

Car insurance using telematics (black box)
Insurance premium comparison sites
Activity-based health insurance that tracks your exercise

Here are some of the FINTECH adoption rates (Gulamhuseinwala, Hatch and Lloyd, 2017):

China (69%)
India (52%)
UK (42%)
Brazil (40%)
Australia (37%)
Spain (37%)
Mexico (36%)
Germany (35%)
South Africa (35%)
(Average = 33%)
USA (33%)
Hong Kong (32%)
South Korea (32%)
Switzerland (30%)
France (27%)
Netherlands (27%)
Ireland (26%)
Singapore (23%)
Canada (18%)
Japan (14%)

Global FINTECH adoption rates can be tracked over time. Countries that are well on their way will be "included" in the FINTECH revolution, while those resisting FINTECH, or are unable to adopt FINTECH because of their weak digital infrastructures, will find themselves unable to participate in financial transactions of all kinds.

**A FINTECH Capability Maturity Model**

Digital readiness and FINTECH adoption define the overall FINTECH maturity score. The objective is to develop a real-time FINTECH maturity score with input from multiple digital readiness and FINTECH adoption data bases, scores and rankings. Readiness and adoption data should be normalized following a qualitative/quantitative rationalization of the indicators used to score digital readiness (from approved collection organizations). An initial look at the key readiness indicators would directly measure a country's digital assets, its digital penetration, its (public and private) investments in digital technology, its regulatory environment, its business innovation quotient, its digital educational and training ecosystem and the aggressiveness of corporate and government leadership. These indicators would provide an initial readiness score. Step two would require the integration of the readiness score with the FINTECH adoption score, which would more easily be calculated from a finite number of adoption indicators. (FINTECH adoption requires less measurement than digital readiness since there are fewer adoption versus readiness indicators.)

Methodologically, this is straightforward. Data calls to the most recent readiness and adoption data can be programmed into a dynamic calculator that present maturity scores to policymakers, companies, and NGOs, among other interested parties. It would support queries about a country's readiness, its adoption behavior and its overall FINTECH maturity.

Such a system would be capable of answering simple and complex questions about how mature a country is, where its FINTECH weaknesses lie and what steps could be taken to improve its ability to play. Rules could be developed that would infer from maturity scores which FINTECH applications are within reach – or which educational, training and implementation steps are necessary to achieve specific applications goals, or combinations of applications, education and training.

**FINTECH Guidance**

A system that reports on the status of a country's FINTECH would be of use to a variety of national and global actors. Country and regional teams at international organizations like the United Nations, the World Bank and the International Monetary Fund, among others, could query the system for information about the current and future FINTECH status of their countries.

Figure 1: The FINTECH Guidance Process

Country teams could adopt an "if-then" approach to FINTECH applications driven by external data bases (about digital readiness and FINTECH maturity) and guidance about how to optimize FINTECH opportunities and minimize FINTECH risks through a simple data base ("facts") used to make inferences ("rules") such as:

*If* country X has low digital readiness, low emerging technology adoption and low FINTECH maturity, *then* guidance should consist of FINTECH awareness, education, training and investment

*If* country Y has high digital readiness, high technology adoption and high FINTECH maturity, *then* guidance can include the application of cashless transactions, DLT/blockchain, smart contracts and Regtech, etc. to optimize the capability

More complex rules could assess and guide country teams, as Figure 2 below implies. The whole process can be represented as a managed flow from data to applications and training. External data can be collected, integrated and analyzed, fed into an inference engine that converts the analyses into guidance comprised of an applications map or a get-up-to-speed slate of awareness, education and training projects – as suggested in Figure 3.

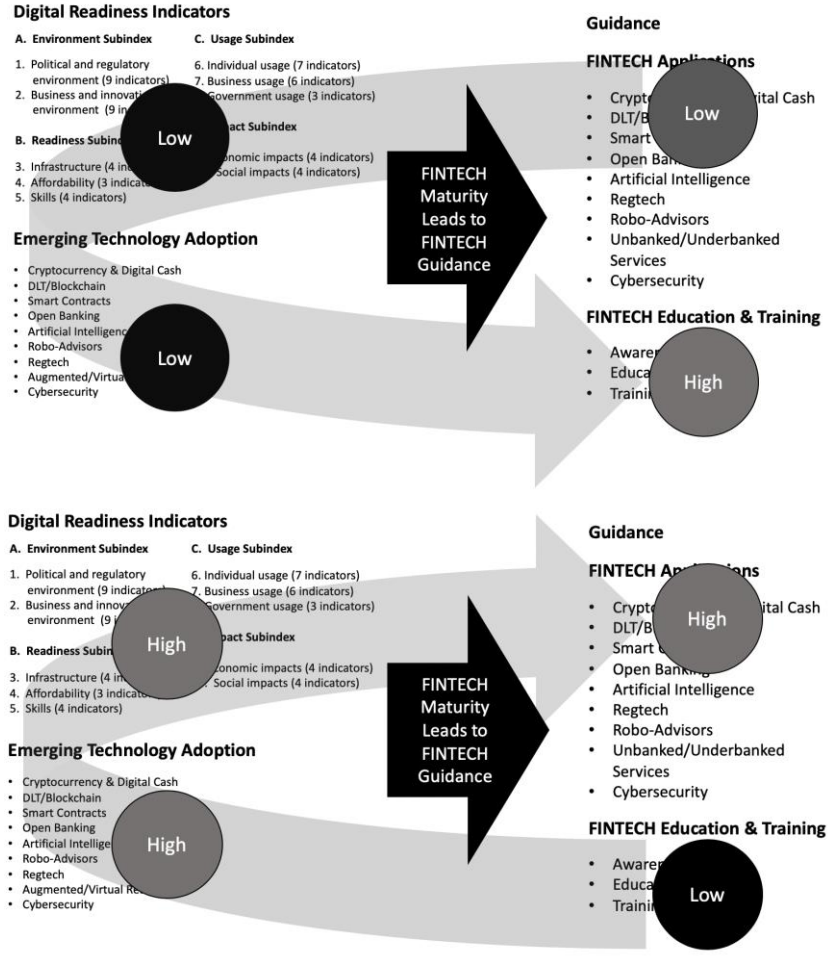


Figure 2: FINTECH Guidance

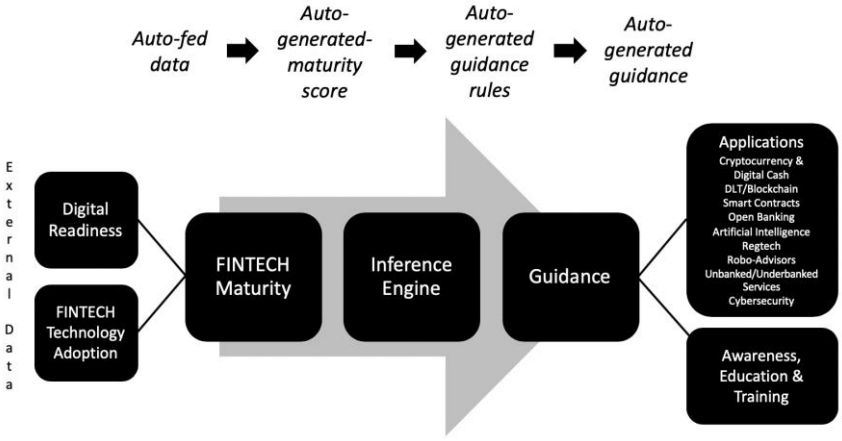


Figure 3: Detailed FINTECH Guidance Process

More specifically, the development of rules would require the identification of the digital readiness/FINTECH adoption capabilities necessary to, for example, deploy blockchain or smart contracts versus, for example, RegTech. Each FINTECH application area would be exploded in required capabilities which would enable the development of rules. Stated differently, the system would be capable of answering questions like: "*what would it take Country X to trans-act with distributed ledgers, like blockchain"? "What digital capabilities are required to offer open banking?" "Or smart contracts?"* The system would describe a digital infrastructure necessary to achieve the desired FINTECH applications capability, which would permit country teams to know what investments need to be made for their countries to participate in FINTECH-enabled transactions. The system could, in effect, perform FINTECH due diligence which would inform country teams about how bad – or good – FINTECH prospects are, and where investments need to be made to improve FINTECH maturity.

Remember, however, the concept here is not to completely automate the FINTECH assessment or guidance processes. Hard data, whenever available and validated, should drive country digital readiness and overall FINTECH maturity scores, but "soft" data extracted from country teams and other observers should be integrated into guidance decisions. For example, will central banks participate? Is the level of corruption high? Do vested financial interests lie with a small percentage of the population? Are there political obstacles to digital readiness, technology adoption and therefore FINTECH maturity? All inference systems rely on rules extracted from hard data and subject matter experts (in this case, country and regional teams who pro-pose ideal-versus-practical guidance).

**A System for FINTECH Guidance**

The objective is to develop a "system" that reports on the status of a country's FINTECH capabilities that would be useful to country teams, which could query the system for information about the current and future FINTECH status of their countries. Such a system would be capable of answering simple and complex questions about how mature a country is, where its FIN-TECH weaknesses lie and what steps should be taken to improve its ability to participate in a FINTECH-ready global economy. Rules will populate the system that would infer from maturity scores which FINTECH applications are within reach – or which educational, training and investment steps are necessary to achieve specific FINTECH applications goals.

Third-party and primary readiness and adoption data will be normalized following a qualitative/quantitative rationalization of the indicators used to score digital readiness (from approved collection organizations and data bases, like the WEF). Data calls to the most recent readiness and adoption data will be programmed into a dynamic calculator that presents maturity scores to country teams. It will support queries about a country's readiness, its adoption behavior and its overall FINTECH maturity. The development of rules regarding the identification of digital readiness/ FINTECH adoption capabilities necessary to, for example, deploy blockchain or smart contracts versus, for example, RegTech. Each FINTECH application area will be exploded in required capabilities to inform teams about what's possible, what's impossible and what steps should be taken to leverage each FINTECH application.

The system will be capable of answering questions like: "*what would it take country X to trans-act with distributed ledgers, like blockchain?" "What digital capabilities are required to offer open banking?" "Or smart contracts?"* The system will describe the digital infrastructure necessary to achieve the desired FINTECH applications capability, which will permit country teams to know what investments need to be made for their countries to participate in FINTECH-enabled transactions. The system will perform FINTECH due diligence which will inform corporate, government and NGO country teams about how bad – or good – FINTECH prospects are, and what specific investments need to be made to improve FINTECH maturity.

**Conclusions**

It's very possible to surveil digital readiness and calculate FINTECH maturity across countries (and regions) with 3rd-party and primary data.

Countries can be scored according to their digital readiness and technology adoption which enables FINTECH maturity scoring.

Corporate, government and NGO country teams can benefit from digital readiness and FINTECH maturity rankings to inform companies and countries about how to leverage FINTECH.

Based on FINTECH maturity scores, country teams can offer guidance about applications, education, training and investment.

"If-then" approaches to country guidance with "rules" about FINTECH maturity and practical guidance can be developed.

The first step is the development of (automated) surveillance tools to measure digital readiness, technology adoption and FINTECH maturity. Step two is the development of maturity scores; step three is the development of rules to assist country teams generate practical FINTECH guidance.

Country teams can be part of NGOs, governments, companies or banks looking to improve the transaction capabilities of countries in which they have financial vested interests.

While FINTECH is generally perceived as a corporate capability, the model described here is targeted at countries and regions. Inclusiveness is the goal. Countries with little or no FINTECH maturity will be financially disenfranchised, while those will high maturity scores will dominate the global economy – together – which is the essence of the inclusivity objective. But will some countries leapfrog necessary digital readiness and go directly to the cloud (and other providers) to become FINTECH ready? Will cryptocurrency and blockchain level the playing field? Will central banks become less relevant – or FINTECH governors? Many such questions will be answered over time, but in the meantime, it makes sense for countries to invest in their digital infrastructures and adopt FINTECH as quickly as they can – so they can play in the FINTECH world.

***Acknowledgement***

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# Research into quality control strategy of fresh agricultural products based on differential game

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**Keywords**
quality control; strategy; fresh agricultural products; differential game

**Abstract**

*Quality of agricultural products catches the eye of the public. This paper considers two levels of supply chain including a supplier and a retailer to establish two kinds of differential game models: Stackelberg game model led by retailers and the game model under subject cooperation. Optimal quality effort level is considered as state variable and optimization decision of supplier and retailer can be solved using the method of feedback. The results show that under certain conditions subject cooperation can achieve Pareto improvement of suppliers, retailers and the entire supply chain system profit. The conditions of achieving Pareto are analyzed to promote the coordination of the fresh agricultural product supply chain on the basis of above research.*

# Twitter and economic talks: analysing president Jokowi's Tweets

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**Keywords**
Economy; Indonesia; Infrastructure; President Jokowi; Twitter

**Abstract**

*With 11,389,075 followers on Twitter, Jokowi, President of Indonesia, uses Twitter not only to pass along political information but also to share official and unofficial activities and meetings. Additionally, President Jokowi's Twitter can also be considered as a tool he uses to frame issues and agenda, as well as to control narrative. This paper aims to investigate the extent of President Jokowi talks about economy in his Twitter in 2018 since economic issues are 2 out of 9 President's priority agenda (known as Nawacita). Using content analysis, 552 President Jokowi's tweets gathered from Twitonomy Database were analysed. Two key findings emerged. Firstly, there are 88 economy-related-tweets in 2018. Secondly, there are 75 infrastructure development-related-tweets, most of which were emphasised as fundamental support for Indonesia's economic development. These two key findings show that President Jokowi is most concerned with expansive infrastructure development as key solution to Indonesia's current economic problems. These also demonstrate the alignment between President Jokowi's most concern reflected in Jokowi's Twitter and development policy reality.*

## Introduction

Indonesian twitter users grow massively over the last two years. About 100 million of 262 million Indonesian population primarily use Twitter as a news source to keep-up to date on key issues and politics (Kilic, 2017). This motive is linked with Twitter's principle as "what's happening in the world and what people are talking about right now" platform. Twitter also places an emphasis on free expression and think every voice has the power to impact the world. As President of Indonesia, Jokowi uses this massive online audience to both support and bypass mainstream media and to take his thought and voice straight to Indonesian people (Ichsani & Subhan, 2017)

Much research has examined issues related to political campaign (Aragón, et al., 2013; Conway, Kenski, and Wang, 2015), leadership (Gonzalez and Wang, 2016), influence (Dubois and Gaffney, 2014) in online political networks, topics trending in Twitter (Groshek and Groshek, 2010), government's use of Twitter (Scherpereel, Wohlgemuth, and Lievens, 2017; Hegelich and Shahrezaye, 2015; Golbeck, et al., 2018; Sevin and Manor, 2019.

On his early presidency in 2014, President Jokowi along with his "Kabinet Kerja" (the Working Cabinet) set 9 priority agenda, which is widely known as Nawacita. Among those 9 agenda, economy-related-program are discussed in three points. This invites questions and protests around the country, in which Indonesian citizens concern more on human resources development. On the other hand, President Jokowi believes that current Indonesia economic problems are led by lack of infrastructure development, thus President Jokowi would not reduce the budget allocation for infrastructure. This paper attempts to investigate the extent of President Jokowi talks about economy in his Twitter in 2018 and what policies are most shared through his Twitter platform.

## Literature Review

President Jokowi's Nawacita programs are related to Security and Defence, Education and Culture, Foreign Affairs, Domestic Policy and Public Administration, Regional Autonomy Development, Law and Act, Agrarian Affairs, Social, Housing, Economy stressed on Industry and Trade, as well as Monetary and Fiscal.

Nawacita programs are described as follow (kpu, 2014):

Call back the state to protect all the people and gives a sense of security to all citizens, through "free active" foreign policy, trusted national security and development of state defence integrated "Tri Matra"

based on national interest and strengthen identity as a maritime country. (Related to Policy on Security and Defence; Foreign Affairs)

Make the government do not absence by building good, effective, democratic, and trusted governance by giving priority on efforts to restoring public trust towards democratic institutions by continuing democracy consolidation through reforming the political party, system, election, and institutions of representatives. (Related to Policy on Domestic and Public Administration)

Develop Indonesia by strengthening areas and village within the framework of national unity. (Related to Policy on Regional Autonomy Development)

Refuse weaker country by reforming the system and law enforcement with free corruption, dignified, and trusted. (Related to Policy on Law and Act)

Improve the quality of human life in Indonesia through improving the quality of education and training by implementing *Indonesia Pintar* (Smart Indonesia) program and improving the welfare of community by implementing *Indonesia Kerja* (Working Indonesia) and *Indonesia Sejahtera* (Prosper Indonesia) programs by endorsing land reform and "the 9 hectares of land ownership" program, housing program in villages or subsidised flat cheap program, and social security for the people in 2019. (Related to Policy on Education and Culture; Agrarian Affairs; Social, Housing)

Increase productivity of the people and competitiveness on international market so that Indonesian can step forward together with other Asian countries. (Related to Economy, Policy on Industry and Trade)

Achieve independence in economy by moving strategic sectors of domestic economy. (Related to Policy on Economy, Monetary and Fiscal)

Perform country character revolution through policy on resetting national education curriculum by emphasising citizenship educational aspect, that puts proportionally aspects of education, such as the teaching of Indonesia history, value of patriotism, the spirit in defending Indonesia and character education into curriculum in Indonesia. (Related to Policy on Education and Culture)

Strengthening *Kebhinnekaan* (unity in diversity) and strengthening social restoration through teaching *Kebhinekaan* and creating spaces for community to have dialogue. (Related to Policy on Security and Defence)

**Methodology**

This work gathers primary data from *Twitonomy Database* of Jokowi's tweets on 1 January - 31 December 2018. About 552 tweets posted by Jokowi are analysed using Content Analysis with quantitative approach. Through Content Analysis, this article provides data on number of economic policies and infrastructure development policies mentioned in Jokowi's Twitter. The quantification procedure is done by determining categories and indicators which are also functioned as guideline for coders to keep the reliability of the coding process (Eriyanto, 2011). The basis in determining the indicator is based on:

Government Authority on Law No.32-year 2004 on Local Government (Article 10, Clause 3)

PP No. 25 year 2000 on Government Authority and Provincial Authority as Autonomous Region.

Document: Vision, Mission, and Action Program Jokowi-Jusuf Kalla 2014. *Road to Change for Sovereignty of Indonesia.*

**Results and Discussion**

Two key findings emerged. Firstly, there are 88 economy-related-tweets in 2018. Secondly, there are 75 infrastructure development-related-tweets, most of which were emphasised as fundamental support for Indonesia's economic development. 17 economic sectors are set based on the National Development Planning Board (Bappenas) and 10 economic sectors found in Jokowi's tweets. Three economic sectors are mentioned more than 10 times, respectively Financial services and insurance sector (31 tweets), Manufacture Industry (16 tweets), and Trade and Motor Reparation (12 tweets). Other sectors are mentioned less than five times are Information and Communication (4 tweets), Accommodation, Food & Beverages Supply (4 tweets), Transportation and Warehousing (1 tweet), and Mining and Excavation (1 tweet). Brief description of coding results on economic field are as follow:

Table 1. Frequency of tweets related to economic field

| Economic Sector | Frequency of Tweets | Economic Sector | Frequency of Tweets |
|---|---|---|---|
| Manufacture Industry | 16 | Educational Services | 2 |
| Trade and Motor Reparation | 12 | Agricultural, Forestry, and Fishery Industry | 9 |
| Information and Communication | 4 | Transportation and Warehousing | 1 |
| Government Administration, Defence, and Social Insurance | 8 | Mining and Excavation | 1 |
| Financial Services and Insurance | 31 | Accommodation, Food & Beverages Supply | 4 |

In addition, 4 grand outcomes target related to infrastructure development are set by the National Development Planning Board (Bappenas) and those 4 grand outcomes target are all found in Jokowi's tweets as follow:

Table 2. Frequency of tweets related to infrastructure development policies

| Outcome Target | Frequency of Tweets | Outcome Target | Frequency of Tweets |
|---|---|---|---|
| Connectivity | 47 | Ketahanan Air | 18 |
| Energy Sovereignty | 6 | Basic Infrastructure | 4 |

Those grand outcomes are constructed by 9 infrastructure sectors. Three infrastructure sectors are mentioned more than 10 times, respectively Highway (21 tweets), Irrigation (18 tweets), and Newly built road (12 tweets). Other sectors are mentioned less than 10 times are Airports (7 tweets), Energy sovereignty including oil and gas, power and mineral resources (6 tweets), Housing (4 tweets), Train (3 tweets), BRT 93 tweets), and Broadband & e-services (1 tweet).

President Jokowi's tweets in 2018 reinforce his main policies during his presidency. Economic and infrastructure development sectors are discussed in 163 over 552 tweets which equals to 29,52%. Focusing on infrastructure program, which spend Rp 410.7 trillion (US$28.1 billion)—the largest ever in the country's history, President Jokowi receives number of protests from Indonesian citizens. Nevertheless, Jokowi defends his expansive infrastructure policies in the second period of his presidency in 2019-2024.

**Conclusion**

The objective of this paper is to investigate the extent of President Jokowi talks about economy in his Twitter in 2018. Nine priority agenda widely known as Nawacita discuss economy-related-development three times, while other fields such as Security and Defence, Education and Culture, Foreign Affairs, Domestic Policy and Public Administration, Regional Autonomy Development, Law and Act are mentioned once and twice.

Two key findings emerged. Firstly, there are 88 economy-related-tweets in 2018. Secondly, there are 75 infrastructure development-related-tweets, most of which were emphasised as fundamental support for Indonesia's economic development. These two key findings show that President Jokowi is most concerned with expansive infrastructure development as key solution to Indonesia's current economic problems.

**Limitations**

This work was only conducted to investigate President Jokowi's tweets in 2018 and the result should therefore be viewed with caution as it only captured one out of 5 years of Jokowi's presidency in

Indonesia. A comprehensive of five years of Jokowi's tweets during his first period of presidency was not addressed in this work and should therefore be undertaken in the near future.

In addition, using quantitative approach, this work provided findings, which were very fundamental for researchers wishing to explore Jokowi's economic and developmental policy by using qualitative approach.

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# Data acquisition and analysis of milk based on MALDI-TOF MS

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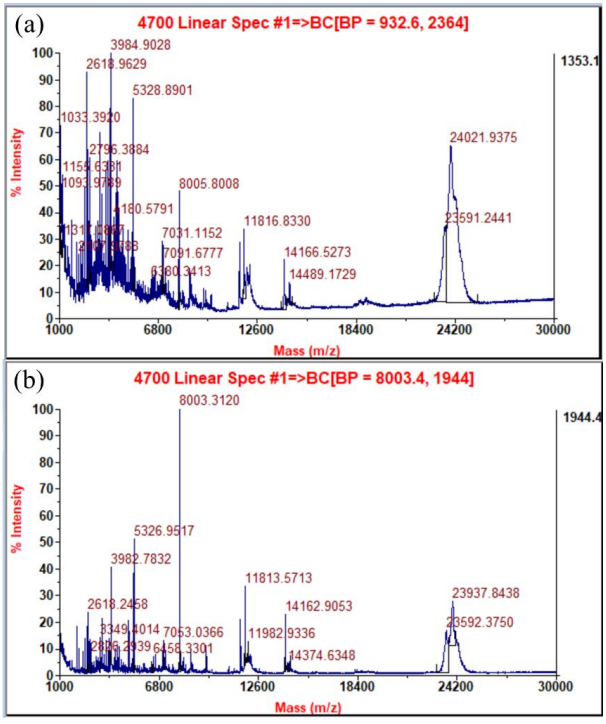
**Keywords**
Milk; MALDI-TOF MS; Data acquisition; Analysis

**Abstract**

*For centuries, milk has been widely consumed by humans due to its great nutritional relevance. The extensive consumption of milk makes it potential adulteration targets, bringing economic benefits to unscrupulous producers. Such practices must be detected and controlled as they can have negative impact on product quality and human health. Matrix-assisted laser desorption/ionisation time-of-flight mass spectrometry (MALDI-TOF-MS) is a potentially useful technique, with proven abilities in the identification of proteins, peptides, and fats. In this work, we therefore aim to explore the MALDI-TOF MS-based method for the detection of milk. MALDI data for two series (whole milk and low-fat milk), directly obtained from the market, were collected and analyzed. Fig.1 show the MALDI spectra obtained from (a) whole milk and (b) low fat milk. Significant differences were found in their MALDI spectra. The biggest difference comes from the molecular weight range from 1000 to 4000, which may be due to the presence of lipids in milk. As no pretreatment of the milk samples is required and owing to the speed and ease of use of MALDI-MS, the proposed analytical protocol can be used as a general strategy for detecting milk samples obtained daily from producers in the dairy industry.*

Fig. 1 MALDI-TOF mass spectra of (a) whole milk and (b) low-fat milk in positive linear ion mode.



# Sustainable Consumption: the purchase of certified agricultural products

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**Keywords**
Market-oriented policy instrument; Willingness to pay; Choice experiment

**Abstract**

*Agricultural environmental pollution and food safety control are two hot issues which to some extent are homologous in causes and mutually complementary in policy management. Market-oriented policy instruments can create economic incentive for farmers to produce in more eco-friendly ways. Therefore, it is important to analyze consumer preferences and willingness to pay for certified agricultural products in order to stimulate green demand. The present study investigated the effects of consumer attitudes, trust, knowledge, and personal characteristics on the heterogeneity of WTP via the choice experiment. Take the staple food – rice as an example, a total database of 907 rice consumers was collected from nationwide in China. The results show that consumers were willing to pay a premium for certified products, of which the organic label was the highest price. By using the latent class model (LCM), the presence of consumer preference heterogeneity is confirmed, and consumer's preference can be categorized into three classes named as "certification label preferred", "price sensitive", and "information preferred". The knowledge of the certification label, attitudinal factors, trust and socioeconomic characteristics can well explain the sources of the heterogeneity of preferences. Based on the findings in this study, policy recommendations are proposed.*

# Necessities of Combating Dissatisfactions at Workplaces for The Retention of Job-Hopping Generation Y Employees

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**Keywords**
Employee, Generation Y, Private, Retention, Strategy, Turnover.

**Abstract**

*Employees from Generation Y (Generation Y) are confident, realistic, jolly and have the tendencies to turnover frequently at their workplace. Although many investigations have been carried out on employee turnover for the last century, comprehensive literature reviews still reveal that the problem of turnover remains unsolved. Excessive turnover causes a great loss to an organization. In this conceptual study, the authors find out the necessities of formulating an integrated employee retention strategy to overcome the problems and filling the gaps for failures. It is observed that at present the young employees from Generation Y are not contented with their profession and have a general tendency of leaving the job with or without valid reasons. Most of the Millennial employees (Generation Y) directly or indirectly opted for voluntary resignation for better opportunities or self-employment. It is also discovered that frustration is the most influential factor which leads to frequent turnover among Generation Y. The same consequence is also reported from the perspective of the employees and employers. Thus, this conceptual study is going to find out the necessities of different integrated retention approaches related to turnover of employees and the possible measures which include management initiatives, soft HRM & work-life balance to combat the frequent turnover problems. Most of the study on turnover is carried out in the western context, whereas the turnover problems exist all over the world including in a non-western developing country like Bangladesh. Another remarkable issue is the rate of turnover is higher in the private sector than in the public sectors.*

*The private sector has significant stakes in a developing country. Since every organization has the earnest desire to get the best output and lesser turnover to avoid brain drain, refrain from excessive turnover costs, and retain competent staffs. It has become an important challenge for any organization to keep productivity and output constant through retention. It is found that employees who are satisfied with their job got better retention, companionship with fellow staff members, and produce a higher quality of work. Through this study, it is discovered that there are ample necessities to formulate retention friendly strategies to mitigate the target group dissatisfactions and demands. Retention policies are vital instruments for Generation Y retention, which is likely to discover integrated strategic solutions and guidance against the global storms of Generation Y turnover.*

## 1. Introduction

Employees from Generation Y are confident, realistic, jolly, and same time got frequent turnover tendencies. They are protected as children, grown up in Global recession, motivated by scholars and do not hesitate to communicate by mobile or email. It is found that Generation Y members got some special attributes that can be very much beneficial and same time unfavourable depending on the organizational settings. It is very much important to be satisfied ones' profession and to love one's job and remain in the job. Human resource executives all over the world understand that retention factors influence employee retention. Only respondents based in the western countries found that their organizations marginally ready to address these turnover problems by redefining and redesigning the retention strategies in line with the requirement of Generation Y. Unfortunately, such strategic policies and literature not present much beyond western context.

Besides covert losses, employee turnover includes overt costs like selecting, onboarding, recruiting, appointment, training, and filling the vacancies. Covert cost also includes the cost of productivity as some staffs have to keep pending some of their duties for undertaking additional pressures due to jobs which are left behind. It is also wise to include costs like loss of individual experiences and other adverse effects on the organizational environment. In many aspects, these costs are not perceptible neither easy to measure. As a result, most of the cases employers underestimate the necessities of turnover and count over all great loss. Diversified private organizations need to use different retention tactics in handling the fluctuating new generational employees, especially Generation Y as they have got many preferable retention factors which differ from previous generations.

## 2. Literature Review

These in-depth literature reviews establish all the important issues related to employee turnover from the turnover research to date by giving special emphasis on Generation Y retention approaches. The comprehensive literature review reveals the necessities of implementing Generation Y centric retention policies. The literature review also suggests the crucial elements that need to be considered in ensuring job satisfaction and Generation Y retention at the workplace. These elements include management initiatives, soft HRM, and work-family balance (Schwepker and Schultz, 2015; Naim and Lenka, 2018; Iden, 2016; Laura et al.,2015; Rubel et al., 2017). It is found that in recent years, the world is facing massive Generation Y turnover problems (Lyons et al., 2015; Nabi et al.,2017; Wiggins, 2016; Simmons, 2016; Manjur, 2018; Ahmed,2018 ) and therefore, the urge to bridge the gap concerning retention of Generation Y arises (Burton and Peachey, 2014; Hom et al., 2017).

The literature reviews on Generation Y viable demands reflects the mediating role of job satisfaction stresses upon the necessities of examining turnover intention relationships (Wells & Peache, 2011; Kang, Gatling & Kim, 2015). Globally, many research works are already taking place, but these problems have not been resolved, In Bangladesh, only a few researchers took the initiatives to study the situation. However, these are not related to the subject matters. Nonetheless, most of them did not cater for the different causes and consequences of employee turnover in generational aspects, which also appeared as research gaps. Moreover, most of the studies are conducted in the Western context. It is essential to carry out an extensive research in order to bridge the gap in the literature concerning the retention of Generation Y at private sectors in Bangladesh (Kang, Gatling and Kim, 2015; Graen and Grace, 2015; Hom et al., 2017;Henrik, 2015; Lyons et al., 2015;Wiggins ,2016; ;Simmons, 2016).

### 2.1 Generation Y and Turnover

Generation Y (Generation Y) is also known as Millennial. They are born between 1981 to 2000. Generation Y has access to job opportunities both at home and abroad (Wells and Peachey, 2011). It has been discovered in the previous studies that 6 out of 10 Generation Y are currently dissatisfied and looking for new job opportunities. The excessive cost of the turnover is measured each year, and the organizations in the USA are losing billions of US dollars (Gallup,2017). For Generation Y, changing the job seems to be part of their daily routine. These Generation Y job hoppers like to build a parallel career all over the world (Sedrak and Cahill, 2011). The turnover trends of employee remain high and are increasing gradually. The turnover attitudes of Generation Y have caused the private sectors to become unstable (Hom, Lee, Shaw, and Hausknecht, 2017; Henrik, 2015). Innovative retention strategies are required to retain Generation Y. The retention strategy is a plan which consists of a set of decisions to retain the workforces (Lee, Hom, Eberly, Junchao and Mitchell, 2017; Rani and Samuel, 2016; Kashyap and Rangnekar, 2016).

The theories reveal that the intention to leave an organization is related to job satisfaction and other requirements of the target group (Liu, Mitchell, Holtom and Hinkin, 2012). Generation Y has chronic turnover tendencies compared to their predecessors (Lyons, Schweitzer and Ng, 2015). Generation Y, unlike the other generations, lacks the respect to values and understanding. They do not hesitate to express if they feel dissatisfied. The figure shows the differences between the generations and the ways employees quit their jobs (Wiggins,2016). Figure 1 indicates a significant difference between Generation Y and the previous three generations.

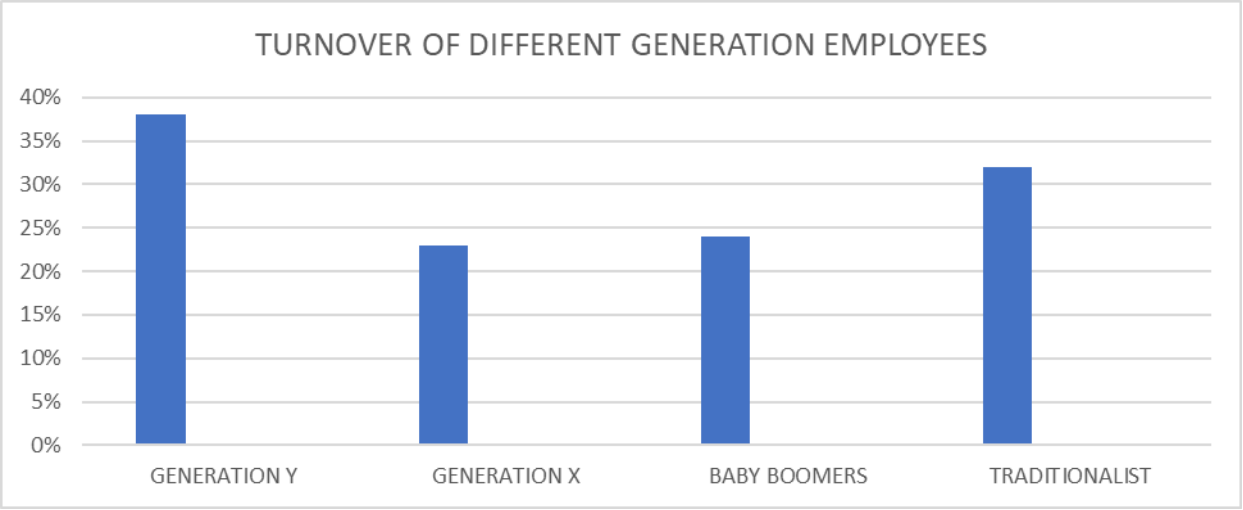


Figure1. Employee Turnover by Generation (Wiggins,2016)

Due to the frequent turnover, the different organization had to redesign the existing retention strategy from existing theories to sustain competently against the crisis of turnover intentions. Private industries need to identify and overcome the problems associated with retention factors, turnover intentions and job satisfaction (Karmaker and Saha, 2016). Mutual relationship and good behaviour among supervisors and workers are very important in maintaining a sound working environment. It is recommended that organizations should know the characteristics of different generations and accordingly modulate their policies to satisfy the different distinct groups of generations (Oke, Walumbwa & Myers, 2012).

| Clash points | Traditionalist | Baby Boomers | Gen -X | Generation Y/Millennial |
|---|---|---|---|---|
| Work career goal | To build legacy | To build a stellar career | To build a portable career | To build a parallel career |
| Changing jobs | Carries a stigma | Puts your career behind | Is necessary | Is part of their routine |
| Other characteristics | Top down, Hard HRM, Not Technology Oriented | Not much Tech Savvy | Well oriented with Technology | Focused on Self Career, Optimistic; Focused on Self Career, Optimistic; Team Player; Flexible Work life & Work-life Balance, Prefered Soft HRM |

Table 1: Generational clash points (Sedrak and Cahill, 2011; Murphy,2010; Yang and Wang, 2013; Do, Budhwar and Patel, 2018; Mishra and Mishra,2017; Ashton, 2017).

From the table, it can be revealing that Millennials want continual and easy feedback to evaluate them. They made their demand in some cases. The ongoing arrival of Millennials & their turnover attitudes at the workplaces requires extra concentrations to mitigate this problem (Sedrak & Cahill, 2011).

### 2.2 Management Initiatives

Management at all levels should take the initiative to combat the turnover and to fulfil the judicious requirements to retain its employees. Although it increases temporary expenditures, in most cases, the total expenditures remain lower than the turnover cost if retention is ensured (Janet, Geoffrey, Ariane and Lesley, 1996). Management needs to understand that a few elements are required to ensure job satisfaction and employee retention. These are compensation, promotional opportunities, management style, family life balance, and work environment. Furthermore, management practices, leadership features, and organizational culture also influence the manager's ability to become successful in a multigenerational environment (Iden, 2016). There is a positive and significant link between job satisfaction and Human Resource Management Initiatives supported by teamwork, job autonomy, and leadership behaviour.

### 2.3 Soft HRM

Soft HRM approach includes the encouragement of good working environment. Considering employees as an important factor, it is also wise to include this factor in determining the employees' benefits and employees' welfare. There is also a need to promote motivation, job satisfaction and commitment (Legge, 1995). There are different models of HRM used; the soft approach of managing HR is preferable over the hard approach. Ihuah, (2014) states that for the development of HRM, through the traditional and human relations approach, four models namely the Harvard Model, the Michigan Model, the Guest Model, and the Choice Model are available in the soft approaches. It requires easy incorporation of different constraints towards the HRM strategy in managing the HRM of the organization. Soft HRM can assure efficiency, work performance, job satisfaction, and retention of Generation Y employees. The managerial philosophy, skills, work conditions, personal behavioural perceptions, and market competition need to be aligned in the soft HRM principles (Personal Communication, December 2018). Soft HRM is important for the owners, managers, decision makers, government, and non-governmental stakeholders' effort to retain valuable young staffs (Ihuah, 2014).

### 2.4 Work-Life Balance

There is a significant relationship between work and family, which is observed from social support literature and the different empirical studies. Work-life balance (WLB) appears to be one of the key variables when addressing issues of employee management and retention. It is presumed that the link between employee attitudes, such as job satisfaction, organizational commitment, personal dimensions, WLB (Work-Life Balance) are dependent and interrelated (Personal Communication, April 2019). WLB is essential for Generation Y employees. Generation Y employees are leaving their job remarkably than their predecessors. Generation Y is very much concern about high reimbursement and work-life balance (Wiggins, 2016). Generation Y is also inclined towards management innovativeness, social revolutions, opening up opportunities and building up concrete career planning emphasizing work-life balance. Generation Y is giving the highest priorities on work-life balance. The work-life balance is one of the many variables which organizational leaders must consider in reducing Generation Y turnover.

### 2.5 Job Satisfaction and Employee Retention

Job satisfaction is a common predecessor to employee retention (Yang et al., 2012). Job satisfaction relates to general life satisfaction. Many employees enhance higher job satisfaction when they are facilitated with personal and professional advancement through learning, developing skills, and experiences (Festing & Schafer, 2014). Herzberg's Two Factor Theory also shows that the employee intends to leave an organization is normally related to job satisfaction (Liu, Mitchell, Holtom, & Hinkin, 2012). The employees feel satisfied with their role in the organization, and such feeling depends on the employers' understanding of the characteristics of the job and career attitudes. Job satisfaction has been assumed as an important factor to influence the employees' intention to stay in their workplace. Job satisfaction is one of the methods used to establish and maintain a healthy organizational structure (Do, Budhwar & Patel, 2018).

Nowadays, corporate organizations believe that employees are important assets, and they strongly desire to ensure employee retention, as well as having job satisfaction from their employees (Personal Communication, March 2019). Assessing the levels of job satisfaction has become a common activity in the organizations in which management is concerned with the physical and psychological well-being of the individual (Mishra & Mishra, 2017). Therefore, it is evident that managers, supervisors, human resource specialists, employees, and the public in general, are concerned with improving job satisfaction. Job satisfaction is related to turnover intentions and the different retention factors like Management Initiatives, Soft HRM and Work-Life Balance (Kang, Gatling & Kim, 2015; Wiggins, 2016; Naim & Lenka, 2018; Roy et al.,2017; Karmaker & Saha, 2016).

### 2.6 Job Enrichment Theory.

Herzberg's (1959) collected evidence which revealed that intrinsic factors are related to job satisfaction, while extrinsic factors created job dissatisfaction. This shows that employees feel satisfied and happy at work if existing conditions are directly influencing their inner feelings and self-esteem as they interact with the environment. Herzberg believed that hygiene factors such as company policies, working

conditions, and compensation do not serve to motivate individuals, but could cause or prevent dissatisfaction and thus retain valuable employees (Herzberg, 1959). However, considering the feasibility and requirements, all the pros and cons of the theory are evaluated and explored. The intrinsic factors against job satisfaction as a motivator and further hygienic factors against retention approaches. The researcher predicted that these research theories contribute regarding the connection between employee retention, management initiatives, leadership, soft HRM, and job satisfaction. All these are extrinsic factors which may reduce job dissatisfaction and ensure the Generation Y employee retention.

A recent study by Mihajlov and Mihajlov, (2016) found that extrinsic factors lead to job satisfaction. The results contradicted Herzberg's theory which stated that extrinsic factors are a resource of dissatisfaction only. As such, further study is required to test this old theory in this new generational context. Herzberg et al. (1959) postulate a two-factor theory that categorizes the factors affecting job satisfaction and dissatisfaction. The factors affecting job attitudes as discussed by Herzberg's Motivation-Hygiene Theory are indicated in Table 2.1:

| Hygiene Factors (Extrinsic Factors related to dissatisfactions & retention) | Motivating Factors (Intrinsic Factors related to job satisfaction) |
|---|---|
| Company policy and administration,<br>Supervision<br>Relationship with supervisor<br>Working conditions<br>Relationship with peers,<br>Personal life<br>Relationship with subordinates | Achievement internally,<br>recognition,<br>work itself,<br>responsibility,<br>advancement, growth, and so on. |

Table 2: Factors Affecting Job Attitudes of Herzberg's Motivation-Hygiene Theory

## 3. Emerging Problem

Employees from Generation Y tend to switch job frequently (Hom, Lee, Shaw, and Hausknecht, 2017; Henrik, 2015). The chronic turnover intentions of Generation Y cause overt and covert losses like losses of innovations, skills, abilities, and organizational funds (Simmons,2016 and Murphy, 2012). The losses of employee's turnover are always higher than the estimated costs. It is estimated the cost of the turnover is more than 150% of the salary (Gilbert, 2011). Excessive turnover causes massive overt and covert loss of productivities. Frequent turnover also creates a poor organizational climate, downgrade the customer services, break the customer relations, and create negative ratings for the organizations (Rana, 2015; Demirtas and Akdogan, 2015; Ahmad and Kuang, 2018; Sunder et al., 2017).

This Generation Y has more than two times of turnover than Generation X, and 4.5 times than baby boomers and the other predecessors (Lyons, Schweitzer and Ng, 2015). It is obligatory to retain Generation Y at the workplaces because soon they will be the highest in the workplaces (Laura, Madden, Blake and Timothy, 2015). The Asia Pacific region is not concerned in motivating their employees, and there is a scarcity of integrated retention approaches both in Bangladesh and in the global perspective in the field of management (Roy, Vander, Weijden and Vries, 2017; Ashton, 2017; Ahmed, 2018). HRM is required to understand the significances of obtaining and retaining the competent Generation Y staffs for the success of the organization. If the policies and strategies of an organization are poor, then most of the employees would suffer (Park and Gursoy, 2012).

## 4. Research Methodology

An intensive and pertinent literature review has been conducted focusing on Management Initiatives, Soft HRM, Work-Life Balance, Job Satisfaction, Generation Y requirements and on Generation Y Employee Retention Strategies to develop a conceptual framework. Scarcity of indexed literature on new generational employees in Bangladesh leads the researcher to conduct qualitative interviews. To endorse the proposed Augmented-Conceptual Framework, an elaborated in-depth qualitative interview was conducted with three strategic groups of people who are directly or indirectly involved with business policy-making process which includes ten top managers, five entrepreneurs, and five research scholars.

**5.Findings**

Employee turnover has become one of the top listed issues in private sectors at present. Every organization has the earnest desires to get the best output, lesser turnover, and retain experienced staff. This turnover causes a great financial loss in the form of visible direct costs such as recruitments, marketing, selection, onboarding for long training, and developing a new employee. Consequently, the organization also spend hidden costs which include loss of productivity. It has become a sensational issue for any organization to keep and uphold productivity and output through retention. Employees who are happy and contented at work are satisfied with their job. Employees who are satisfied with their job are willing to remain in their position, companionship with fellow staff members, and produce high quality of work (Personal Communication, February 2019). This extensive review of the literature shows that there are a few elements which could achieve the retention of employees and job satisfaction. These elements include the leaders' attitude, management style, work-family balance, and work condition. Generation Y has specific viable requirements to serve in the workplace in the 21st century. Regardless of the country, Generation Y wants flexible leadership and management, meaningful and friendly working conditions and practising soft HRM (Oke et al. ,2012; Do, Budhwar, Patel, 2018). This review also urges the mediating role of job satisfaction about integrated Generation Y retention policies (Queiri and Madbouly,2017; Rubel, Kee, and Rimi, 2017; Karmaker and Saha, 2016). The author presents the related literature on Generation Y turnover intentions, job satisfaction, and the generation preferred retention factors based on previous studies.

Extensive literature review on Generation Y is accompanied by the social perceptions, attitudes, behaviours, and management associated with the generation Y retention. From this review, it is found that management initiatives are required for retaining the valuable employees (Do, Budhwar and Patel, 2018; Hagel, Wong, Cathy, and Robin, 2014; Ruys, 2013). Soft HRM assists to resolve employee shortage crises which ensure employee job satisfaction and employee retention. An employee from Generation Y cannot be retained through hard approaches. Thus, it is not worth to think about the hard approaches in the present scenario as such soft HRM approaches are more appropriate (Ashton, 2017; Gill, 1999; Cook, MacKenzie and Forde, 2016). Work-life balance (WLB) is the second important element of life. WLB is important for Generation Y, and all the other generations also (Ohlrich, 2015; Oke et al. ,2012; Do, Budhwar, Patel, 2018). Employees quit or remain in their job also depending on job satisfaction & dissatisfaction such as different intrinsic and extrinsic factors (Liu, Mitchell, Holtom and Hinkin, 2012). This fact is supported by the underpinning theory of Herzberg Two Factors Theory (Herzberg et al. ,1959; Mihajlov & Mihajlov, 2016; Malik, Danish & Munir, 2012; Yang & Wang, 2013; Cropanzano & Mitchell, 2005).

Employee retention strategy refers to the plans and means, and a set of decision-making behaviours formulated by the organizations to retain their competent workforce. In this integrated retention strategy, all the factors that create the literature gaps are considered judiciously. Different retention factors ,intention of turnover and two-factor theory are found to be most suitable and reveal strong foundations which also deserved to be injuncted job satisfaction as a mediator in the relationship between various antecedents of retention factors and Generation Y employee retention (Herzberg et al. ,1959; Malik, Danish & Munir ,2012; Yang & Wang, 2013;Homans, 1958; Kultalahti & Viitala ,2015; Kangas et al.,2016).

The literature review guided us strongly to conceptualize an integrated retention strategy for Generation Y employees who have the general tendencies of job hopping all over the world. Different literature stresses on investigating the effects of different retention factors which include management initiatives, soft HRM, and Work-Life Balance (WLB) requirements of generation Y employees by giving more emphasis in terms of retention and ensuring job satisfaction (Gotsis and Grimani, 2016; Do et al.,2018; Graen and Grace ,2015; Ashton, 2017; Cook et al.,2016;Lee, and Ha-Brookshire, 2017; ;Rani and Samuel ,2016). Therefore, by focusing on the viable requirements of Generation Y, an integrated retention strategy related to the conceptual framework are developed.

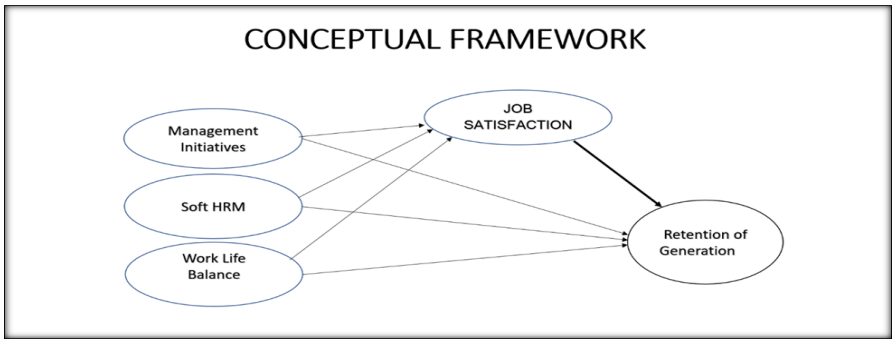


Figure 2.2: Conceptual Framework on Ways of Combating Turnover

**7. Discussions and Conclusions**

There is a need to implement Generation Y centric retention factors against the frequent turnover of Generation Y employee. However, due attention is not given yet in this field (Wiggins,2016). All over the world, Generation Y centred retention strategies, turn over intentions, and job satisfaction is hardly explored compare to its devastating effects. Therefore, these factors deserve extra attention (Simmons,2016). Different authors and researchers also contradict each other and urged for further investigation (Schwabel, 2016; Nafisa, 2016). It is found that the mediating role of job satisfaction between retention policies and turnover intention need to be re-examined as it is ambiguous and has not been explored much so far (Rubel, Kee, and Rimi, 2017; Nazrul and Gour, 2016). Hagel, Wong, Benko, and Erickson, (2014) have stated that most of the management has a long way to go in the field of turnover of employees. Barkema, Chen, George, Luo, and Tsui, (2015) state that there is a shortage of management literature in the South Asian countries, particularly in respect of index management journals. Such studies have not been undertaken in a non-western context in Bangladesh to date. There are paucities and necessities for conducting studies concerning Generation Y retention in Bangladeshi perspective.

The problem of turnover remains unresolved. Excessive turnover counts the great loss to any organization of the world. It is observed that at present the young employees from Generation Y are dissatisfied with their profession and have a general tendency of leaving the job with or without valid reasons. Another remarkable investigatory is the rate of turnover is higher in the private sector than in public sectors. It may be deduced that employees who are satisfied with their job got better retention, companionship with fellow staff members, and produce a higher quality of work. Besides motivational approaches, there are necessities to formulate Generation Y retention friendly strategies to mitigate the target group dissatisfactions and demands to fight against the global storms of Generation Y turnover.

However, the unavailability of conceptual knowledge against the Generation Y turnover in developing non-western countries would be the main contribution of the current study. The apparent importance of retaining the employees as a challenge of managing job-hopping attitudes of Generation Y employees. This study provides a synthesis of Generation Y preferred viable concepts for retaining Generation Y against turnover intentions. Generation Y preferred factors (management initiatives, soft HRM, work-life balance, and job satisfaction) against the turnover intention have not been explored and integrated into previous studies. Innovative retention strategies are required to satisfy and retain Generation Y employees (Lee et al., 2017; Kashyap and Rangnekar, 2016). In the West, job dissatisfaction and excessive turnover become one of the top challenges, and the same phenomenon appears in the non-western countries, South Asia and the developing countries such as Bangladesh (Ahmed,2018; Rani and Samuel, 2016). As such, this concept paper conceptualises the necessities of different integrated retention approaches related to the turnover of Generation Y employees, which included retention factors like Management Initiatives, Soft HRM and Work-Life Balance.

To sum up the whole situation, practically through this study, the government, leadership, and management is likely to realize the necessities of Generation Y retention strategy. The output of the study is helpful for all stakeholders in the private sectors. The proposed concept of formulating and redesigning retention strategies ensures appropriate management initiatives, soft HRM, work-life balance, which can retain and satisfied the job-hopping Generation Y employees. It is likely to ensure organizational productivity and overall success at the private sectors. This concept is helpful to combat the overt and covert organizational losses, including fighting against competitors using the right efforts. The outcome

ensures job satisfaction, lowering absenteeism, turnover intentions, loss reduction, and uplifting the interests for all the stakeholders.

## 8. Limitations and direction for future research

This concept paper is not conclusive, as such further empirical studies may be carried out to justify the conceptual framework, and to what extent the different retention factors have impacted over Generation Y employee retention at non-western context. Further comparative studies may be carried out focusing on different Generations and genders. Further cross-national and multinational research work might promote the paucity of modern literature in a non-western context against the frequent turnover challenges of millennials.

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# The effect of job proficiency, commitment, and cooperative relationship to project performance

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**Keywords**
Contractor selection, Cooperative relationship, job proficiency, commitment, project performance

**Abstract**

*Contractor selection is very important to ensure work can be done on time, on budget, and meet the quality. This research aims to analyze and understand in depth the effect of job proficiency, commitment, and cooperative relationship to project performance. PT. Vale is one of the mining companies located in Sorowako, Indonesia, where the research was conducted. The data needed is obtained from a sample of employees who are specifically involved in handling the procurement of construction services. The technique of collecting data using questionnaires and documentation. These data are analyzed using the Multiple Linear Regression tool with the SPSS Program software application. The research findings show that the variables of job proficiency, commitment, and cooperative relationship simultaneously significantly affect the performance of the project with the coefficient of determination $R^2$ of 0.565. Cooperative relationship partially has no significant effect to project performance while job proficiency and commitment partially has significant and positive effect to project performance. Job proficiency consist of five indicators which are availability of qualified personnel, appropriate equipment, Health, Safety and Environmental management, financial capacity to finance the project, and project management capabilities. Commitment consist of two indicators which are contractor's loyality to the Owner, and the willingness of the contractor to change the work method for better job result. Cooperative relationship consists of three indicators which are the contractor has ever done similar project on the Owner, the contractor has never been legally disputed with the owner, and the contractor does not have a poor track record of the other project owners.*

*The novelty of this study lies not only in the main variables used in predicting project performance, but also on indicators of each variable. The object of this research is also different, where this study focuses on constructive projects while previous research generally uses a variety of projects. The findings of this study are very useful as a basis for consideration in selecting prospective contractors who will be given the task of working on the project more successfully.*

# Adoption of green jobs in Mauritius: drivers and challenges

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**Key Words**
Challenges, Drivers, Green jobs

**Abstract**

*This study investigates the drivers and challenges faced by Mauritian organisations in implementing green jobs. Data was collected through online questionnaires to companies in six major sectors of the economy to identify their level of awareness, to investigate their readiness to embark into green jobs while at the same, assess the drivers and the challenges.*

*The results showed that the implementation of green jobs in Mauritius is at an early stage and that much needs to be done. Furthermore, Spearman rho correlation found no relation between sector activity and the level of awareness. Moreover, regardless of the sector that the companies are; they face the same difficulties to implement green jobs. The study however showed that firms that do not have green jobs, do engage in green practices like the use of renewable of energy, minimise pollution and maximise the use of day light. The major drivers identified were customer preferences and government regulations while the major challenges which emerged were costs and the lack of trained employees.*

*Based on the findings recommendations were made with respect to the enhancement of existing regulations and policies, subsidisation of costs and dispensing of training programmes to stakeholders concerned.*

## Introduction

Growing concern about environment problems during the past years has made "go green concepts" important for businesses (Yi Yong & Mohd-Yusoff, 2016). In fact, the term 'green jobs' was first introduced as an amendment to the Workforce Investment Act on a pilot basis in USA, it was then defined in the Green Jobs Initiative in 2008 by the UNEP (Renner, M; Sean, S; Jill., K, 2008) to assess, analyse and promote further green jobs through environmental policies in both developing and developed countries (Jarvis, et al., 2011). The expansion of renewable energy, making buildings and industry more energy efficient, and the need to produce fuel efficient vehicles are core components of a new policy conversation taking place in various countries thus giving "green job" an iconic status (Sweeney, 2009).

At the same time, unemployment is now a major challenge worldwide with about 172 million people being unemployed in 2018 globally, with the youth being among those most affected. (ILO, 2019). Thus, the challenge for economies at the dawn of this 21st century is not only to provide jobs to the current and future generations, but to also ensure that jobs provided are "green" so that those concerned are provided with a sustainable living, in line with the Sustainable Development Goal 8 which is about promoting an inclusive and sustainable economic growth, employment and decent work for all (ILO, 2017)

However, research pertaining to the extent to which organisations are prepared to offer green jobs, including the challenges and constraints they face while doing so still warrants further probing. While the research conducted so far pertains to developed countries like the USA, a lot remains to be done for different regions of the world (Kouri & Clarke 2014) and for Small Island Developing States (SIDS), one of the most vulnerable categories of nations as far as climate change and sustainable development is concerned.

This paper therefore investigates into the drivers and challenges faced by companies in Mauritius in the quest of adopting green jobs.

## Literature Review

According to Workforce Information Council, (2009), green jobs exist mostly in the energy, recycling, and smart agriculture sector. Scully-Russ (2013: 261) advocates that "there is no common nomenclature that can be used across the variety of industries and professional fields that are involved in the emerging industry." Worldwatch Institute, (2009:2) in Kouri & Clarke (2014) defined that green jobs

are work in agricultural, manufacturing, Research and Development (R&D), administrative, and service activities that contribute(s) substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution. Moreover, green jobs need to be decent by providing good working condition as well as a fair pay, however in practice this rarely exist (ILO, 2013). The transition to green is expected to lead to the loss of some existing jobs and the creation of new jobs and new sectors (Pociovălişteanu, et al., 2015).

Table 1 shows three different definitions of green jobs found in the literature the normative, the industry, and the occupational definition (Scully-Russ, 2013), pp 261).

| Normative | Industrial | Process/occupational |
|---|---|---|
| "Well paying, career track jobs that contribute directly to improving or enhancing environmental quality.... Range from low skilled, entry level to high skilled, high paid jobs, and include opportunities for advancement in both skill and wages.... Tend to be local work transforming and upgrading the immediate built environment and natural environment.... Simply put, if a job improves the environment but doesn't provide a family-supporting wage or a career ladder,... it is not a green job" (Gordon *et al.*, 2008) | "A green job is one in which the work is essentialto products or services that improve energy efficiency, expand the use of renewable energy, or support environmental sustainability. The job involves work in...green economic activity categories [i.e. specific industries]..." (Bureau of Labor Statistics, 2010) | "Green activities have different effects on different technologies. A more prudent approach is to focus on the 'greening' of occupations, which is defined as the extent to which green economic activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work or worker requirements" (Dierdoff *et al.*, 2009, pp. 4) |

Table 5: Perspectives and conceptual frameworks on green jobs (Scully-Russ, 2013)

Ultimately, the tentative though popular consensus agrees that positive employment effects from policies designed to achieve environmental goals constitute Green Jobs. (Kouri & Clarke , 2014). Peters, et *al.*, (2011) stated that green jobs can be characterised in four groups; firstly, by means of the product made, the process used, the industry in and, or the characteristics of the occupation of the jobholder.

**Green Product Approach**

It includes green products or services that achieve the environmental objectives. Examples of the green products are Hybrid or electric automobiles, insulation products. However, this approach fails to consider the green activities that are not precisely linked with the manufacturing of a particular product or service, such as energy conservation within an organisation (Peters, et al., 2011).

**Green Process Approach**

This approach takes into account activities that exist within firms like waste management, energy use monitoring, recycling and reusing activities. Various environmental and occupational protection rules have been applied over the years, and businesses incrementally implemented standard and processes that decrease air and water emissions and solid wastes. These activities tend to be more specific to the firm (Peters, et al., 2011).

**Green Occupation Approach**

This approach starts with the identification of the jobs linked to energy conservation and production and environmental protection. The way green businesses are run is very essential for policy planning information. Those occupations include environmental engineers, architects, biologists, agronomists, hydrologists (Peters, et al., 2011)

**Integrated Approaches**

This approach combines elements of two or more of the above approaches, they allow for the establishment of state-level baselines for policy planning purposes (Peters, et al., 2011).

For a business to be considered as green, it has to consider at least one of "4Rs" – reduction, reuse, recycling, and recovery and each of those "Rs" can be attained through green business practices (Kassey,

2001) cited by (Čekanavičius, et al., 2014). On their part, Renner et *al.*, (2008) identified four types of effects that may happen to traditional jobs during the transition to green job.

| Type of effect | Observation |
|---|---|
| Positive and negative employment effects | • Green policies and business practices can create new jobs or preserve existing ones<br>• However, environmental regulations can, in theory, have negative job consequences (by raising costs, reducing demand, or rendering a factory or company uncompetitive); but, this has proven to be an extremely rare outcome |
| New job creation and job preservation | • Certain green jobs will be created through the development of new technologies and the emergence of new industries (wind turbines, solar photovoltaics, fuel cells, biofuels etc.)<br>• As existing firms and industries green their operations, current jobs may be transformed and thus preserved against possible loss (implying changes in work methods, retraining) |
| Direct and indirect employment effects | • Jobs are created directly through increased demand and output induced by environment-related expenditures<br>• Indirect employment effects arise in supplier industries<br>• Induced job effects occur as wage incomes are spent generating demand in additional industries |
| Temporary and long-term jobs | • Construction and installation jobs (for instance, of a wind turbine) are usually of a short-term nature (as are jobs that are supported by a specific policy measure or programme)<br>• Manufacturing and maintenance jobs, on the other hand, are in principle, of a long-lasting nature |

Table 6: Types of employment effects for green economies

On the other hand, Fankhauser, et al., (2008) found that the effect of climate policy on employment exists in the following three stages:

In the short term, jobs will disappear in some affected sectors like the carbon-intensive sectors while other jobs will be emerging in low-carbon sectors which are more labour intensive than conventional sectors. This is commonly known as the direct employment effect.

In the medium term, the effect of climate change policy expands to the economy where jobs are created while others are eliminated to adjust the value chain. New jobs like carbon traders, wind power engineers and climate change consultants will be created.

For the longer-term opportunities for investment and growth will be created through innovation and development of new technologies. More jobs are expected to be generated in the research and development of low-carbon technologies which will yield investment and further job-creation. The labour force is projected to possess green skills

Being a Small Island Developing States (SIDS), Mauritius is vulnerable to climate change whereby it was placed 18th by the World Risk Report (UNU, 2014).It is forecasted that it will face further instability of rainfall patterns, increase in the intensity of tropical cyclones and sea-level rise in the future (IOM, 2015). Another challenge faced by Mauritius is the high rate of unemployment of 7.3% in 2016 of which 21 200 were aged between 16-24 (Republic of Mauritius, 2017) showing a slight decrease in 2017 to reach the rate of 7.1 % (Republic of Mauritius, 2018). Various green practices have been initiated at a national level as well at corporate level since the past few years to raise awareness of the population on its importance in the Republic of Mauritius. As an initiative from the ILO to assess green jobs in Mauritius it was found that some opportunities do exist but much needs to be done (ILO, 2013a). The Mauritian textile sector has adopted green initiative like the use solar water heating systems, recycled wastewater, recycling and natural air-cooling practices (ILO, 2013a).

Despite such initiatives, only around 6.3% of total employment was considered as green jobs in 2010 in Mauritius, which is estimated at 558,100 jobs. The main sectors as per (ILO, 2013a) are mostly found:

a) In electricity generation amounting 23% of jobs examples are supply of bagasse derived from sugar cane to electricity plants;

b) In agriculture with about 12% of employment can be considered green as well as decent, primarily in sustainable fishing, followed by forestry but also in organic agriculture; and

c) In only some textile companies which are greening their processes –for example the use of solar water heating systems, grey water use, recycling and natural air-cooling – only around 5% of employment in that sector was considered as green.

In order to encourage sustainability, good governance and transparent business practices, the Stock Exchange of Mauritius Sustainability Index (SEMSI) was launched in September 2015. It also captures the price-performance of companies listed on the Official Market or the Development & Enterprise Market which reveal strong sustainability practices against a set of internationally aligned and locally relevant environmental, social and governance (ESG) criteria (Stock Exchange of Mauritius, 2015). Furthermore with a view to do away with plastic bags since it does not contribute to the safeguarding of the environment but also to encourage sustainable development, the Environment Protection (Banning of Plastic Bags) Regulations 2015 was amended prohibiting the use of plastic bags with or without handles or gussets for carrying goods purchased at a point of sale such as a wholesale or a retail outlet, of plastic bags by exempting biodegradable and compostable plastic bags (Republic of Mauritius, 2016).

However, no research has been conducted till now to gauge the extent to which organisations operating in Mauritius are prepared to adopt green jobs, more so, the factors which will induce or reduce the adoption of green jobs. Therefore, this study aims at investigating into the drivers and challenges faced by local companies in implementing green jobs. The objectives of the research are set out as follows:

To identify the level of awareness of green jobs among Mauritian firms

To identify the drivers and challenges for shifting from brown jobs to green jobs

To investigate into the extent to which local firms are ready to embark on green jobs

To propose recommendations which will facilitate the adoption of green jobs among Mauritian companies

**Methodology**

The present study made use of the descriptive method of research, as it is a way to obtain information about the current situation (Creswell, 1994). This method was found suitable for this study since it intends to describe the existing status of green jobs in the Mauritian sector. Both primary and secondary data were used, in terms of published documents, articles, books, websites, academic journals, local magazines, reports and literatures related to the research problem in order to gain a better insight of the concept. An online survey, in the form of an e questionnaire was found appropriate as a method of primary data collection because of ease of administering, coding, processing and analysing. The online questionnaire was addressed to the General Managers, and Human Resource Managers from sectors such as Agriculture and forestry, Building and Construction, Manufacturing, Business and financial services, Retail and Tourism sectors. A stratified random sampling was used since it was a suitable approach to make equal proportion, meaningful, comparisons between sub-groups in the population (Gay, 1987). This method is also seen as an efficient one as the means of the stratified samples are likely to be closer to the mean of the whole population (Robson, 1993). Consequently, the sample in this study was disaggregated by 6 sectors to address the effect of green jobs.

For the purposes of the survey, the convenient sample size was estimated to be 270 taking into consideration the actual population of 102,527. A sample of 500 was derived with a margin of error of 5 % and confidence level of 90% for the current study. A total of 500 respondents were thus contacted by email to fill the e questionnaire and a total of 150 questionnaires were submitted, however 20 among them were eliminated from the study due to large amount of missing data. A total of 130 questionnaires were retained for analysis. Verification for duplicate IP addresses further demonstrated the trustworthiness of respondents as out of 130 surveys completed, 128 different IP addresses were used.

Kumar (2011) mentioned that any research instrument that is used to collect data for a particular research need to be reliable, that is the instrument should be generating the same output over and over again if the test is carried out repeatedly under the same conditions. In this study, the reliability of the instrument was tested using the Cronbach's α Test and a score of .750 was obtained which indicate as per Nunnally (1978) that an instrument is considered to be reliable if it gets a score of 0.70 or higher.

**Findings/ Results**
**Sector of Activity**

| SECTOR OF ACTIVITY | FREQUENCY |
|---|---|
| Food & Agriculture | 10 |
| Construction & Building | 24 |
| Manufacturing | 32 |
| Business and financial services | 31 |
| Retail | 7 |
| Tourism & Hotel | 12 |
| Others | 14 |

Table 3: Sector of Activity

Table 3 indicates the number of companies, sector wise who took part in the study. The highest being the manufacturing and lowest being retail sector.

Level of Awareness about Green Jobs

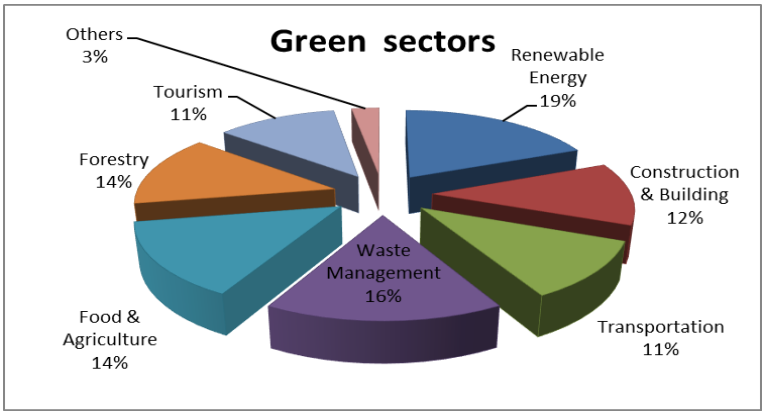


Figure 2: Perception of Green Sectors

The majority of the respondents perceived that the renewable energy sector (19%) and the waste management sector (16%) %) as green sectors as opposed to Transportation and Tourism which were nor perceived as green. As for the sectors categorized as "others", it includes the city planning, conservation, green IT, finance and the ocean economy.

According to Table 4, the median and a mode of 5 show that most respondents have selected 'strongly disagree' to the statement that Green Jobs have a negative impact on the environment. Moreover, a mode of 3 indicates that the majority of the respondents were neutral on whether green jobs offer adequate wages and offer job security.

| | Mean | Median | Mode | Std. Deviation |
|---|---|---|---|---|
| Green Jobs are jobs are jobs in the production of goods and the provision of services that have a negative impact on the environment | 4.02 | 5.00 | 5 | 1.358 |
| Green Jobs offer adequate wages | 2.88 | 3.00 | 3 | .768 |
| Green Jobs provide a safe working condition | 2.49 | 2.00 | 2 | .900 |
| Green Jobs respect workers' rights | 2.45 | 2.00 | 2 | .827 |
| Green Jobs offer job security | 2.81 | 3.00 | 3 | .864 |
| Green Jobs provide reasonable career prospects | 2.48 | 2.00 | 2 | .837 |
| Green Jobs are jobs in administrative, and service activities that contribute substantially to preserving or restoring environmental quality | 2.05 | 2.00 | 2 | 1.018 |
| Green Jobs are decent jobs that limit greenhouse gas emissions | 2.18 | 2.00 | 2 | .830 |

| | | | | |
|---|---|---|---|---|
| Green Jobs minimize or eliminate waste and pollution | 1.89 | 2.00 | 2 | .696 |
| In the evolution of a green economy, a job that is seen as a green job today might not be the case in the future | 2.69 | 2.50 | 2 | 1.055 |

Table 4: Awareness level of Green Jobs

**Drivers and Challenges of Green jobs**

The survey inter alia also indicated that:

most respondents (63.1%), representing more than half of the selected sample do not have green jobs;

only 38% of the respondents' company produce or provide green products or services; and

about 58% of the respondents' company do not have an environmental policy

It was also found that the majority of firms that do not have green jobs have the intention to do so either by producing or providing green products or services or by having an environmental policy in the future. In this respect, the drivers and challenges for the adoption of green jobs were further investigated.

**Drivers of green jobs**

Respondents agreed to the seven statements found in table 5 as follows:

| Statements | Mean | Median | Mode | Std. Deviation |
|---|---|---|---|---|
| Changes in the environment either natural or man-made have a direct on the production of goods | 2.19 | 2.00 | 2 | .855 |
| Regulation and policies passed by the government to promote cleaner production | 2.18 | 2.00 | 2 | .814 |
| Technology and innovation lead to green practices | 2.28 | 2.00 | 2 | .863 |
| Green technology may be influenced by consumer behaviour towards adopting cleaner technologies | 2.04 | 2.00 | 2 | .830 |
| Consumer demand influences green markets, as they have started looking for safer and cleaner products | 1.97 | 2.00 | 2 | .725 |
| Consumers' preferences and habits are changing due to climate change | 2.25 | 2.00 | 2 | .918 |
| Consumers are limiting the demand for products that is considered as a danger to the environment | 2.45 | 2.00 | 2 | .973 |

Table 5: Drivers of Green Jobs

With means ranging from '1.97' to '2.45', a mode and median value of 2, most respondents agree with the statements on the drivers of green jobs. Interestingly, the most popular drivers being consumer preferences for green products and regulations and policies and lowest one being consumer demands.

**Challenges for adopting Green Jobs**

Table 6 demonstrates the mean, mode, median and standard deviation of the challenges of green jobs.

| Statements | Mean | Median | Mode |
|---|---|---|---|
| Lack of Government Policy | 2.94 | 3.00 | 3 |
| Lack of financial means | 3.29 | 3.00 | 3 |
| Lack of technical staff with necessary skills | 3.35 | 3.00 | 3 |
| Lack of relevant information on green jobs | 3.26 | 3.00 | 3 |
| Costs of products - usually labelled / green products cost more | 3.47 | 4.00 | 4 |
| Lack of technical support | 3.27 | 3.00 | 4 |
| Lack of training | 3.30 | 4.00 | 4 |
| Cost involved in changing the way of doing business | 3.52 | 4.00 | 4 |

Table 6: Challenges for Adopting Green Jobs

Costs involved and lack of technical staff were perceived as being the major challenges for the adoption of green jobs by Mauritian companies. The factor contributing least as a challenge was government policies.

**Discussions**

Based on the findings, the Spearman correlation was used to assess whether there is a relationship between challenges of green jobs and main sector activity and it was found that there is no relationship between challenges of green jobs and main sector activity i.e. irrespective of the sector of activity of the respondents the challenges that they face are the same. This may be explained by the fact that green job is a new concept as stated by Bahauddin & Iftakhar, (2013) and that among the Mauritian Companies, for many organisations this concept is not being applied as they are still focusing on the traditional way of doing business with conventional jobs though they are having negative effect on the environment. Moreover, though several consultations were carried out with the Ministry of Labour, Industrial Relations and Employment, the Mauritius Employers' Federation and various other stakeholders (ILO, 2013) there is still a lack of awareness of the concept of green jobs. This may have emerged out of the confusion as there is no distinct universally established definition of a green job as mentioned by GHK (2009) cited by Bowen, et al., (2016). Another reason that may explain the lack of awareness could be that it is a challenge to differentiate between green jobs and non-green jobs as the skills are sometimes confusing as indicated by Rademaekers, et al., (2015). Lack of technical support that was found from table 6 which was ranked among the highest challenges could have also contributed to the lack of awareness.

The study probed further to assess whether there is a link between firms that do not have green jobs but who are engaged in green practices. The Pearson r correlation was used as it measures the degree of the association between linear related variables with the assumption that both variables are normally distributed.

The results of table 7 showing the relationship between firms that do not have green jobs, but engage in green practices indicates that most of the results have a significant > 0.05 whereby H0 is being accepted by concluding that there is no relationship between firms that do not have green jobs but engage in green practices.

However, there are 3 variables, namely: use of renewable of energy, minimise pollution and maximise the use of day light where the results are < 0.05 specifying that though those firms claimed that they do not have green jobs, but they do engage in those green practices in conducting their business activities on a day to day basis.

| Practices | | Are green jobs available within your organisation? |
|---|---|---|
| Recycling | Chi-square | 1.409 |
| | df | 1 |
| | Sig. | .235 |
| Waste segregation | Chi-square | 3.810 |
| | df | 1 |
| | Sig. | .051 |
| Use of renewable of energy | Chi-square | 8.736 |
| | df | 1 |
| | Sig. | .003* |
| Energy and conservation | Chi-square | 1.322 |
| | df | 1 |
| | Sig. | .250 |
| Tree planting | Chi-square | .528 |
| | df | 1 |
| | Sig. | .467 |
| Minimise pollution | Chi-square | 4.620 |
| | df | 1 |
| | Sig. | .032* |
| Use of green packaging | Chi-square | .336 |
| | df | 1 |
| | Sig. | .562 |

| | | |
|---|---|---|
| Energy efficient air conditioning | Chi-square | 3.164 |
| | df | 1 |
| | Sig. | .075 |
| Light out policy | Chi-square | .003 |
| | df | 1 |
| | Sig. | .959 |
| Measure power consumption | Chi-square | 1.110 |
| | df | 1 |
| | Sig. | .292 |
| Train employees | Chi-square | 1.480 |
| | df | 1 |
| | Sig. | .224 |
| Eco labelling | Chi-square | 3.381 |
| | df | 1 |
| | Sig. | .066 |
| Less printing | Chi-square | 1.114 |
| | df | 1 |
| | Sig. | .291 |
| Maximise the use of day light | Chi-square | 5.889 |
| | df | 1 |
| | Sig. | .015* |
| Smoke free building | Chi-square | 1.235 |
| | df | 1 |
| | Sig. | .266 |
| Biodegradable cleaning agent | Chi-square | .009 |
| | df | 1 |
| | Sig. | .924 |
| Use of operable window | Chi-square | 2.110 |
| | df | 1 |
| | Sig. | .146 |

Table 7: Green Practices adopted by companies

*. The Chi-square statistic is significant at the .05 level.

According to Peters, et *al.*, (2011), green jobs can also take an integrated approach where it combines elements of green processes, green occupations or green products. Moreover, a business is considered as green when it considers the 4Rs" – reduction, reuse, recycling, and recovery and each of those "Rs" can be attained through green business practices (Kassey, 2001) cited by (Čekanavičius, et al., 2014). Thus, those companies that use of renewable of energy, minimise pollution and maximise the use of day light may be considered as having green jobs always within their companies, but due to a lack of awareness they are not able to mention that. This could also have arisen out of confusion on between the terms 'green practices' and 'green jobs' Rademaekers, et al., (2015).

**Conclusion, Limitations & Scope for Future Research**

The main aim of this study was to assess the drivers and challenges of green jobs among Mauritian companies. The study found a general lack of awareness about green jobs irrespective of the sector of operation of the respondents. The main drivers of green jobs were identified as being consumer preferences and regulations and policies. However, one of the biggest challenges assessed was the costs involved and also the lack of technical skills.

However, the study also deduced that many companies, although not fully engaged in green jobs, were already imbibed with green practices such as the use of renewable energy, minimising pollution and maximising the use of day light. This seems to be an encouragement for the adoption of green jobs in Mauritius.

In the light of the findings, it is proposed to enhance existing government regulations to facilitate the implementation of green jobs together with developing a Green Skills Development Plan to promote the development of green job skills which is fundamental for the shift to green jobs. This will be done with

the involvement of all stakeholders, including among others the Mauritius Institute of Training and Development, Employment Information Centers, the Career Guidance Services, and companies from the private sectors. The government may also establish cost-sharing, financing mechanisms with the private sector to cross subsidise the costs involved in trying to shift to green jobs at the same time, the researchers realise that the study was limited by the resources available and the small sample size. Further research could concentrate on enlarging the sample and thus having a sector wise perception of the drivers and challenges of green jobs faced by Mauritian companies.

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# An investigation of emotional intelligence factors among medical affairs professionals dealing with oncology solid tumors for effective relationship management by means of factor analysis

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**Keywords**
Emotional intelligence, Medical Affairs, Oncology, Solid tumors, Relationship management

Abstract

*Recently there was headline in Wall street journal, 2018 stating close to 400 healthcare professionals a year are committing suicide. This headline is alarming and should get the immediate attention understanding the reasons for the suicides and then by means of creating support interventions to help healthcare professionals. It has been proved by research that following are 3 top reasons affecting mental and thus physical health of health care professionals: burnout, pressure and underdeveloped emotional intelligence. The burnout has an impact on around 40 percent of health care professionals in oncology field; pressure has impact on 31 percent of healthcare professionals in oncology field and 23 percent of health Care professionals approximately are facing issues due to underdeveloped emotional intelligence. This research paper focuses on investigating the Emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management by means of using multivariate statistical tool factor analysis. Relationship management means being self-aware, manage self, being aware of the situations and people in those situations so that cordial productive relationships are maintained for longer term which is one of the core competencies required by medical affairs professionals (Vanesse and Steven, 2001; Brindan et.al, 2013).*

*For the purpose of primary data collection questionnaire was circulated to 100 medical affairs professionals from Mumbai banking using convenience sampling technique. The findings suggest that self-awareness, self-management, perspective taking, seeking feedback, caring, trustworthiness, conflict handling, building relationships, learning agility and organizational understanding are the important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management.*

## Introduction

There is a global epidemic. Recently there was headline in Wall street journal, 2018 stating close to 400 healthcare professionals a year are committing suicide. This headline is alarming and should get the immediate attention understanding the reasons for the suicides and then by means of creating support interventions to help healthcare professionals. It has been proved by research that following are 3 top reasons affecting mental and thus physical health of health care professionals: burnout, pressure and underdeveloped emotional intelligence. The burnout has an impact on around 40 percent of health care professionals in oncology field; pressure has impact on 31 percent of healthcare professionals in oncology field and 23 percent of health Care professionals approximately are facing issues due to underdeveloped emotional intelligence.

Medical affairs professionals must be able to grasp the fundamental dynamics and gradations within an organization and between its people; hence effective relationship management is one of the core competencies of the medical affairs professionals. They should be able to act as influential advocates for their activities with fellow teammates inside the company and be proficient at maintaining interaction with a growing array of external stakeholders through several networks including personal, conferences and social media (Brindan et.al, 2013; Howe et.al, 2012).

This research paper focuses on investigating the Emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management by means of using multivariate statistical tool factor analysis. Relationship management means being self-aware, manage self, being aware of the situations and people in those situations so that cordial productive

relationships are maintained for longer term which is one of the core competencies required by medical affairs professionals.

For the purpose of primary data collection questionnaire was circulated to 100 medical affairs professionals from Mumbai banking using convenience sampling technique. The findings suggest that self-awareness, self-management, perspective taking, seeking feedback, caring, trustworthiness, conflict handling, building relationships, learning agility and organizational understanding are the important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management which after factor analysis are integrated into 3 skills namely Social and learning skills, Self-regulation and rapport building skills and Inventory taking and Assessment skills.

**Literature review**

There is in-depth research carried out in the domain of emotional intelligence importance among healthcare professionals and on its multifarious aspects, but limited researches are targeted on investigation of Emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management.

**Medical affairs professionals and need of emotional intelligence**

There is a global epidemic. Recently there was headline in Wall street journal, 2018 stating close to 400 healthcare professionals a year are committing suicide. This headline is alarming and should get the immediate attention understanding the reasons for the suicides and then by means of creating support interventions to help healthcare professionals. It has been proved by research that following are 3 top reasons affecting mental and thus physical health of health care professionals: burnout, pressure and underdeveloped emotional intelligence.

Burnout: on an average 40 percent among the oncologist be it medical, surgical or radiation. According to National Academy of Medicine health care professionals exhibited signs of burnout, a syndrome marked by "a high degree of emotional exhaustion...and a low sense of personal accomplishment."

Pressure: Health care professionals are making life and death decisions all day long. There is lot of stress where vital decisions have to made in the moment. A mistake can mean death. In most professions, a mistake doesn't have these severe consequences. Medical affairs professionals have to deal with different stakeholders throughout their job profile like regulatory authorities, doctors their own team members, agents, patients and many more. Effective and accurate communication with these individuals is also one of the major factors leading to stress among health care professionals.

Underdeveloped EI: To get into good school and then esteemed college, students have to focus on their cognitive development, such as memorizing, studying causes and effects, and building associative skills and are surrounded by books and laboratory test and clinical trials. There isn't also the time or focus on emotional development such as self-awareness, knowing their own patterns and triggers, emotional regulation, managing difficult conversations and building their empathy. And suddenly medical affairs professionals have to deal with different stakeholders throughout their job profile like regulatory authorities, doctors their own team members, agents, patients and many more. Effective and accurate communication with these individuals is also one of the major factors leading to stress among health care professionals.

Emotional Intelligence training and coaching can help physicians address these areas with focus on self-emotional appraisals.

There are many models and definitions for Emotional Intelligence. However, in a simple language "Emotional Intelligence is to think, feel and behave intelligently when one is emotional"

"Emotional Intelligence Sets Apart Good and Effective healthcare professionals". A study of 2,800 physician "star performers" showed that 75 percent of a high-achiever's success is a function of emotional intelligence; only 25 percent of success reflects technical competency (El-Aswad, Nadler, Ghossoub, 2017).

Salovey and Mayer coined the term "emotional intelligence" in 1990 (Salovey and Mayer, 1990). They were cognizant of the preceding studies on non-cognitive parameters of intelligence and they described emotional intelligence as "a form of social intelligence that involves the ability to monitor one's

own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action" (Salovey and Mayer, 1990).Emotional intelligence can be seen to be a pre-requisite for cultural intelligence.

**Emotional intelligence has 4 important dimensions (Goleman, 1998)**

Self- awareness: Self-awareness includes awareness of the individual with regards to his/her strengths, weakness, opportunities and challenges. Self-awareness means knowing self, being aware, it takes practice to observe ourselves and once we recognize our emotional state, we can bring about changes to suit situations.

Self-management: Once an individual becomes aware of the emotions, its essential to check the impact of these emotions on mental and physical health. Then individual can streamline negative emotions into productive manner for benefit of self and others. This is self-management that is how one deals with the emotions – acknowledge, express gratitude for positive emotions and express and vent out the negative emotions in a guilt free manner. Self-management deals with appreciating positive emotions and managing negative emotions (Staw, 1994; Salovey, 1990; Gorman et.al, 2005, Anderson, 2000).

Social awareness: Social awareness is awareness that an individual's behavior has influence on surrounding situation, individuals and the climate. It includes awareness of the other individuals, teams with recognition and respect of their emotions and feelings.

Relationship management: Relationship management means being self-aware, manage self, being aware of the situations and people in those situations so that cordial productive relationships are maintained for longer term (Hudak et.al, 2000, Arora et.al, 2010). Once an individual practices self-awareness, self-management, social awareness, relationship management (Naik, 2018) becomes easier to practice which is an essential aspect for achievement of goals and objectives of the organization leading to increase profitability.

**Research Objectives**

The primary objective of this research paper is to examine the literature related to medical affairs professionals and emotional intelligence. The next objective is to investigate the emotional intelligence factors among medical affairs professionals dealing with oncology solid tumors for effective relationship management (Donavan et.al, 2004; Berry et.al, 2007).

Research Methodology

The research design focuses on quantitative research study by means of using statistical analysis tool factor analysis to determine important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management. (Creswell, 1994). In this study use is made of questionnaire and informal interviews, for gathering the primary data and secondary data is gathered by means of published and unpublished paper and electronic sources like journals, newspaper, articles etc (Naik et.al, 2017). For the purpose of primary data collection questionnaire was circulated to 100 medical affairs professionals from Mumbai banking using convenience sampling technique. For the research under study the tool used for data analysis was factor analysis. The cronbach α value is within permissible limits to carry factor analysis.

$H_0$: There is no internal consistency and reliability among the variables selected in the study for conducting factor analysis focusing on important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management.

$H_1$: There is an internal consistency and reliability among the variables selected in the study for conducting factor analysis focusing on important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management.

After discussion with the medical affairs professionals and the literature review, following parameters are considered as important with respect to emotional intelligence for effective relationship management:

Self-awareness
Self-management
Perspective taking

Seeking feedback
Caring
Trustworthiness
Conflict handling
Building relationships
Learning agility
Organizational understanding

**Data Analysis**

Multivariate statistical analysis tool factor analysis is used to determine emotional intelligence factors (Brindan et.al, 2013).

| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.841 | 38.408 | 38.408 | 3.033 | 30.325 | 30.325 |
| 2 | 2.043 | 20.427 | 58.835 | 2.648 | 26.478 | 56.803 |
| 3 | 1.248 | 12.480 | 71.315 | 1.451 | 14.512 | 71.315 |
| 4 | .780 | 7.797 | 79.112 | | | |
| 5 | .681 | 6.812 | 85.925 | | | |
| 6 | .580 | 5.801 | 91.725 | | | |
| 7 | .364 | 3.637 | 95.362 | | | |
| 8 | .199 | 1.987 | 97.349 | | | |
| 9 | .150 | 1.502 | 98.851 | | | |
| 10 | .115 | 1.149 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

Table 1. Total Variance Explained

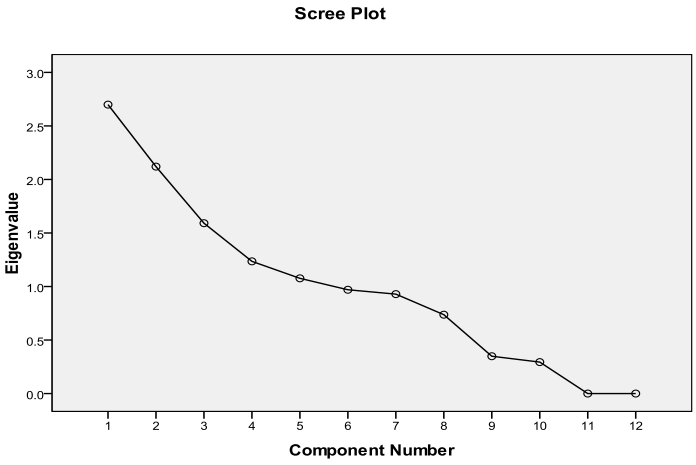
| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| SA | .235 | -.032 | .763 |
| SM | .002 | .876 | .076 |
| PT | .046 | .324 | .735 |
| SF | .250 | .753 | .301 |
| CR | .272 | .716 | -.162 |
| TW | -.083 | .681 | .208 |
| CH | .667 | .458 | -.247 |
| BR | .906 | -.047 | .208 |
| LA | .891 | .113 | .109 |
| OU | .878 | .086 | .218 |

Extraction Method: Principal Component Analysis.

a. 3 components extracted

Table 2 Rotated Component Matrix[a]

Based on the table 2, the following graph which is called as Scree Plot is plotted to know the number of factors which is available in the analysis.




Graph 1. Scree Plot

From the above graph of Scree plot 1, it can be concluded that the factors having the Eigen values more than 1 have to be considered. This study determines 3 factors.

Interpretation (From Table 2)

From the Table 2 of Component Matrix, it can be seen that the following factors can be classified as follows:

Factor 1
Conflict handling
Building relationships
Learning agility
Organizational understanding
Factor 1 can be renamed as Social and learning skills
Factor 2
Self-management
Seeking feedback
Caring
Trustworthiness
Factor 2 can be renamed as Self-regulation and rapport building skills
Factor 3
Self -awareness
Perspective taking
Factor 3 can be renamed as Inventory taking and Assessment skills

With the results of the statistical analysis, coupled with the formal and informal discussions with the medical affairs professionals from Mumbai it is concluded that Social and learning skills comprising of conflict handling, building relationships, learning agility and organizational understanding ; Self-regulation and rapport building skills comprising of self-management, , seeking feedback, caring, trustworthiness and Inventory taking and Assessment skills comprising of self-awareness, and perspective taking are the important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology Solid Tumors for effective relationship management. Medical affairs professionals especially in oncology field do not only relate to stakeholders like their own team, physicians and patients at professional level. The major part of their job also involves handling the emotional responses of these stakeholders like anger, fear, depression and so it is essential that they get a training in self-emotional appraisals with regards to the above mentioned emotional intelligence factors (Scott, 2002; Budhwar et.al, 2009; Hubert, 2016).

**Findings and Discussions**

This research paper investigated that Social and learning skills comprising of conflict handling, building relationships, learning agility and organizational understanding ; Self-regulation and rapport building skills comprising of self-management, , seeking feedback, caring, trustworthiness and Inventory taking and Assessment skills comprising of self-awareness, and perspective taking are the important

emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology for effective relationship management.

Self-awareness means knowing self, being aware, it takes practice to observe ourselves and once we recognize our emotional state, we can bring about changes to suit situations. Self-management deals with regulating the emotions for effective decision making. Perspective taking is where team members see each other make efforts to grapple with perspective leading to building an environment of trust among the team. Seeking feedback involves learning the art of taking and giving feedback to all the stakeholders in a constructive manner (Petrides, 2007; Kanwar et.al, 2009; Cherniss, 200). Caring includes providing emotional support to team, if genuinely required volunteering for help, let members know they are valued and such other acts. Trustworthiness includes take time away from group tasks to develop emotional bonds with each other leading to creation of environment of trust. Conflict handling includes using playful devices and ground rules to correct errant behavior. Building relationships focuses on appreciating a team member in front of all and telling the mistake in isolation with a plan to improve (Vanesse and Steven, 2001). Learning agility includes the ability to keep on learning and infer accurately from what the individual already knows. Organizational understanding includes being able to create networks and relations along with awareness of the entire commercialization process and wider marketplace dynamics (Brindan et.al, 2013) so that medical affairs professionals can deal with other business leaders on an identical footing. So, these 10 factors are integrated by means of factor analysis into 3 important components:

Social and learning skills: focusing on relationship management and knowledge and learning values of the respondents

Self-regulation and rapport building skills: focusing on creating a collaborative environment within self as well with others for the respondents

Inventory taking and assessment skills: essential for knowledge of self and others for the respondents

So, these 3 components can be seen to be interlinked and essential for holistic relationship management of medical affairs professionals with self and others.

**Limitations**

The current study is limited as generalization of the result is difficult as data is collected only from medical affairs professionals from Mumbai. The confidentiality with respect to names of organizations selected and respondents from whom data is obtained is also a limitation as the organizations and respondents requested for the confidentiality.

**Scope of the Research**

The scope of the future research is to devise a proposed training model integrating the all the emotional intelligence factors which are essential for effective relationship management and test the same by means of appropriate statistical tool. The longitudinal time series studies can also be conducted to check the practical implementation of the training model in other health care professions also (Anderson, 2000; Conte, 2005).

**Conclusion**

Emotional intelligence in the health care space is important for the effective relationship management with various stakeholders. Medical affairs professionals especially in oncology field do not only relate to stakeholders like their own team, physicians and patients at professional level. The major part of their job also involves handling the emotional responses of these stakeholders like anger, fear, depression and so it is essential that they get a training in self-emotional appraisals. With the results of the statistical analysis, coupled with the formal and informal discussions with the medical affairs professionals from Mumbai it is concluded that Social and learning skills comprising of conflict handling, building relationships, learning agility and organizational understanding ; Self-regulation and rapport building skills comprising of self-management, , seeking feedback, caring, trustworthiness and Inventory taking and Assessment skills comprising of self-awareness, and perspective taking are the important emotional intelligence factors among Medical Affairs Professionals Dealing with Oncology (Salovey & Mayer, 1990; Goleman, 1998). These factors will enable the medical health professions to regulate self-first, understand the importance of effective relationship maintenance and then can attract others into a

compelling vision of a common future by being able to manage relationships with them in a productive manner.

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# The effect of perceived organizational supports towards employee engagement: A study of Malaysia's oil and gas offshore operations

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**Keywords**
Perceived organizational support, Employee engagement, Oil and Gas, Offshore employee

**Abstract**

*With the rapid growth of business and changes in economic landscape, employee engagement still remains a relevant subject to be discussed in any part of organization. Therefore, this study examines the effects of perceived organizational supports towards employee engagement among the offshore employee in Malaysia. A pilot study was conducted by utilizing online questionnaire via Google Forms were distributed. A number of 40 completed responses we subsequently collected, and data were then analysed using IBM SPSS V25.0. The findings show that perceived organizational supports have positive relationship with employee engagement and emphasized that co-worker support has significant relationship towards employee engagement among offshore employee in Malaysia.*

## Introduction

In the past few decades, there has been abundance of focus in relation to employee engagement. Countless have claimed that employee engagement is positively related to productivity (Rich et al., 2010), organizational commitment (Chalofsky & Krishna, 2009), and organizational citizenship behaviors (Moliner, Martinez-Tur, Ramos, Perio, & Cropanzano, 2008; Rich, 2006), and negatively related to outcomes such as turnover intentions, and burnout (Schaufeli, Bakker, & Van Rhenen, 2009). At the same time, it has been testified that employee engagement is on the decline and there is a deepening disengagement among employees today (Bates, 2004; Richman, 2006). It has even been stated that only about 15 percent of employees worldwide are engaged in their job (Gallup, 2018). In Malaysia context, even though the engagement score has improved by 4 percent from 59 percent to 63 percent, it still stands among the lowest as compare to other countries in Asia region (Aon, 2018). In the current business environments, prior research has indicated that when an employee perceives organizational support, it strengthens employees' cognitive and emotional evaluation towards their job and organization (Byrne & Hochwarter, 2008; Erdogan & Enders, 2007; Ristig, 2009).Perceived organizational support is defined as the employees' beliefs concerning the extent to which the organization values their contribution and cares about their well-being (Eisenberger et al., 1986). Perceived organizational support was studied from three perspectives i.e. management support, supervisor support and co-workers support (Woo, 2009).

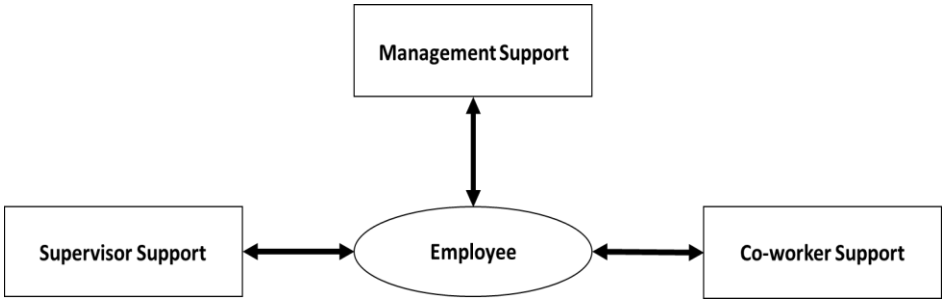


*Figure I: Organizational Support Model*

According to Alvi et. al, (2014), employees with high level of organizational support can be more engaged with the tasks provided them to complete and to take part or put their commitment in achieving organizational goals. This study also confirms that perceived organizational support is the strongest predictor of employee engagement. However, according to a research which conducted by Chairuddin et.

al. (2015), perceived organizational support had insignificant influence on employees work engagement and organizational commitment. In addition, there are limited number of researches that have been conducted in the oil and gas industry based on Malaysia context. Therefore, by conducting this study, it will provide a clear perspective with respect to the context of Malaysia especially in offshore environment. Therefore, this exploratory study will examine the relationship between perceived organizational support and employee engagement.

**Literature Review**

***Employee engagement***

Engagement has become increasingly recognized as a key research topic in the organizational sciences (Sonnentag, 2011). Employee Engagement was defined as the "harnessing of organization members' selves to their work roles: in engagement, people employ and express themselves physically, cognitively, emotionally, and mentally during role performances" (Khan, 1990). The cognitive aspect of employee engagement concerns employees' beliefs about the organization, its leaders and working conditions. The emotional aspect concerns how employees feel about each of those three factors and whether they have positive or negative attitudes toward the organization and its leaders. The physical aspect of employee engagement concerns the physical energies exerted by individuals to accomplish their roles. To achieve this engaged state, Kahn (1990) proposed three antecedents: psychological availability, psychological safety, and psychological meaningfulness (Khan, 1990). Despite of that, employee engagement was defined as the employees' psychological presence during work role that includes two critical components namely attention and absorption (Rothbard, 2001). Employee engagement is the positive, fulfilling and psychological state of mind that is manifested by vigor, dedication and absorption (Schaufeli et al., 2002). In conceptualizing employee engagement as multi-dimensional construct, it was defined as the extent to which an individual is attentive and absorbed in the performance of his/her roles. Employee engagement has been distinguished into two types: job engagement and organizational engagement. Job engagement refers to the extent to which an individual is actually fascinated in the performance of his/her own individual job role. Meanwhile, organizational engagement reflects "the extent to which an individual is psychologically present as a member of an organization" (Saks, 2006).

*Perceived Organizational support*

Perceived organizational support is defined as the employees' beliefs concerning the extent to which the organization values their contribution and cares about their well-being (Eisenberger et al., 1986). According to Organizational Support Theory (OST) (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger & Stinglhamber, 2011), employees develop a general perception concerning the extent to which the organization values their contributions and cares about their well-being. Perceived organizational support had emphasized that in order to meet socio-emotional needs and to assess the benefits of increased work effort, employees form a general perception concerning the extent to which the organization values their contributions and cares about their well-being. Such perceived organizational support would increase employees' felt obligation to help the organization reach its objectives, their commitment to the organization, and their expectation that improved performance would be rewarded (Eisenberger, Huntington, Hutchinson, and Sowa, 1986; Rhoades and Eisenberger, 2002). According to previous research, perceived organizational support was studied from three perspectives i.e. management support, supervisor support and co-workers/ peer support (Woo, 2009). The term "organizational support "shall not be limited only solely up to the organization but it shall cover its agent as well. Agents performing tasks such as supervisor, co-workers or peer for the organization are itself organization and their action will be actions of organization, as mentioned that wishes and feelings of agent are the feeling and wishes of organization (Levinson, 1965).

*Management Support*

Management support means support from organization and the most widely used and accepted definition of organizational support was given by Eisenberger et al., (Eisenberger et al., 1986). They define "organizational support" as "employees' perception about the degree to which the organization values their contributions and cares about their well-being". Kiewitz, et al., (2009) concluded that organizational support factors are very important to study since when organization fails to meet their obligations towards their employees, organizations will face a reduction in perceived organizational support level

among the employees. Similar conclusion was discussed by Ahmed et al., (2012) and Coyle-Shapiro and Conway, (2005) when they found that incentive encouragements offered by organization form a positive feeling towards the employee about organizational support. Hence, there is substantial association between incentive encouragements and employees' perception towards organizational support. Conclusively it can be derived that employee perception of organizational support is outcome of employee and organization relationship as noted by Eisenberger et al., (1986). This relationship is created and is based on the trade-off between organization and employees. Employees offer their loyalty, commitment, motivation and other outcomes in return of the support that is offered by the organization. With reference to the antecedents of perceived organizational support the basic construct is exchange relation as being describe in Social Exchange Theory (SET). In the words of Blau (1964) exchange relation whether it is social or economic exchange is based on future expectations, but time frame and nature are different. Economic exchange is based on specific time frame and having contractual nature. On the other hand, social exchange is open ended, informal and long-term relation which is based on verbal obligation to "reciprocate" (Blau, 1964; Gouldner, 1960). In the words of Ahmed et al., (2012); Woo (2009) and Chou and Robert (2008), perceived organizational support has three constructs i.e. management support, supervisor support and co-workers' support. Therefore, it is predicted that management support will be related to employee engagement (job and organization engagement) as follows;

$H_1$: Management support will be positively related to job engagement
$H_2$: Management support will be positively related to organization engagement

*Supervisor Support*

In any organization, it comprises a combination of people who strive to achieve a common purpose or goal. Employee are requiring interacting with relevant people such as management, supervisor, co-workers and subordinates in order to get things done which among them, supervisors are the party that have more influential to employees. Supervisor serve a bridging role between management and employees (Jokisaari and Nurmi, 2009). These actions performed by supervisors are considered as the actions performed by the organization since supervisors are considered as agents of the organization. In the words of Eisenberger et al., (1986), employees perceive organization like a human being and acts are considered to be the acts of human being. Similarly, agents performing tasks for the organization are itself organization and their actions will be actions of organization, as Levinson (1965), mentioned that wishes and feelings of agents are the feelings and wishes of organization. In the word of Kottke and Sharafinski (1988). It is an evident from literature that, employees received an appraisal from their supervisor or leader or senior which link it to "supervisor support". The term of "supervisor support" is quite consistent with the notion given by Levinson (1965), where he argued that employees view their supervisor in negative or positive sense, and they consider it as a sign of organizational support. If a supervisor is supportive then employee will be having positive perception towards organizational support but if the belief about supervisor is opposite, the corporate image of support will also be negative. This notion is validated by numerous researchers e.g. Eisenberger et al., (2002); Rhoades, Eisenberger & Armeli (2001). Supervisor can also be called as a leader, because as a leader should be readily available to its followers, a supervisor should be there to help and make employees at how perform their tasks. This notion is also supported by Brown and Duguid (1991) who discussed that leadership, is use of internal capabilities, skills, personality, experience and honesty under the banner of authority vested in and widely accepted by co-workers and followers which supported by Harvey, Royal and Stout (2003), when they discussed that leadership is all about achieving some objectives. Wayne, Shore and Liden (1997) concluded that supervisor support is having great bearing on the employee's perception of organizational support as well. Thus, it can be inferred that employees are in exchange relationship with their supervisor. This study considers this notion and takes management support and supervisor support as part of the constructs of concept in defining perceived organizational support. Therefore, it is predicted that supervisor support will be related to employee engagement (job and organization engagement) as follows;

$H_3$: Supervisor support will be positively related to job engagement
$H_4$: Supervisor support will be positively related to organization engagement

*Co-worker Support*

Based on the argument by Eisenberger et al., (1986), employees perceive an organization a comparable means of a human being and acts are reflected to be the acts of human being. Correspondingly, agents performing tasks for the organization are itself organization and their actions will be actions of organization, as Levinson (1965), mentioned that demands and moods of agents will define the demands and moods of the organization. Care from the management or employees will be reflected as the care from the organization. This agency position is not only given to supervisor or leader, rather employees or co-workers, are also agents of organization, as they are also representative of organization. So, it can be indirectly perceived that organization is having agency relationship with all of its employees. From an employee perspective it can be inferred that there are two types of agents or representative of any organization i.e. supervisor or leader and the other one is co-worker or peer. Therefore, organizational support will include support from organization or management, support from supervisor and support from co-workers or peers. The aforesaid literature is evident that support from co-workers or peers can influence positively employees' perception of support from organization. Therefore, it is predicted that co-worker support will be related to employee engagement (job and organization engagement) as follows;

$H_5$: Co-worker support will be positively related to job engagement
$H_6$: Co-worker support will be positively related to organization engagement

**Data and Methodology**

*Data and Procedure*

For this purpose of this study, pilot study has been conducted where 40 respondents have been participated in which it has been segregated to respondents by each region within Malaysia namely Sabah, Sarawak and Peninsular Malaysia. The data for this study was collected through online questionnaire and blast to oil and gas operators focal before disseminating the online questionnaire via Google forms to their respective permanent offshore employees. The survey included a cover letter/ consent form that inform participants about the purpose of the study. Participant were asked to complete the survey as part of study on employee engagement and perceived organizational support. Participation was on voluntary basis and participant were informed that their responses would remain confidential. Table I presents the demographic information of respondents.

| Demographic Profile | Sabah | Sarawak | Peninsular Malaysia | Total |
|---|---|---|---|---|
| Gender | | | | |
| *Male* | *11* | *11* | *18* | *40* |
| *Female* | - | - | - | - |
| *Total* | *11* | *11* | *18* | *40* |
| Citizenship | | | | |
| *Malaysian* | *11* | *11* | *18* | *40* |
| *Non-Malaysian* | - | - | - | - |
| *Total* | *11* | *11* | *18* | *40* |
| Education Level | | | | |
| *Diploma* | *6* | *7* | *8* | *21* |
| *Degree* | *1* | - | - | *1* |
| *Master* | - | - | *1* | *1* |
| *PhD* | - | - | - | - |
| *Others* | *4* | *4* | *9* | *17* |
| *Total* | *11* | *11* | *18* | *40* |
| Marital Status | | | | |
| *Single* | 1 | 1 | 2 | *4* |
| *Married* | 10 | 10 | 16 | *36* |
| *Divorce* | - | - | - | - |
| *Widow/Widower* | - | - | - | - |
| *Total* | *11* | *11* | *18* | *40* |
| Race | | | | |
| *Malay* | 3 | 8 | 15 | *26* |
| *Chinese* | - | - | 1 | *1* |

| | | | | |
|---|---|---|---|---|
| *Indian* | - | - | 2 | *2* |
| *Bumiputera Sabah* | 6 | - | - | *6* |
| *Bumiputera Sarawak* | - | 3 | - | *3* |
| *Others* | 2 | - | - | *2* |
| *Total* | *11* | *11* | *18* | *40* |
| Offshore Working Tenure | | | | |
| *Less than 2 years* | - | - | 1 | *1* |
| *Between 2 - 5 years* | 2 | 3 | 3 | *8* |
| *More than 5 years* | 9 | 8 | 14 | *31* |
| *Total* | *11* | *11* | *18* | *40* |

*Table I: Demographic information on respondents*

*Theoretical framework*

This study will further explore the relationship of each dimensions of perceived organizational support that consist of management support, supervisor support and co-worker support towards employee engagement as shown in Figure II.

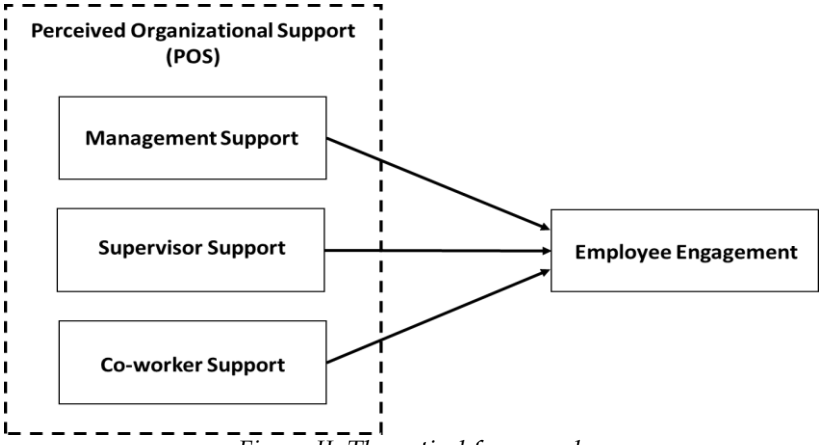


*Figure II: Theoretical framework*

*Estimation procedure*

*Job engagement*

Job engagement was measured using the five-item "Job engagement scale" through adopt Survey of Job engagement (Saks, 2006) e.g., "I really throw myself into my job", "Sometimes I am so into my job that I lose track of time", "This job is all consuming: I am totally into it", "My mind often wanders and I think of other things when doing my job" and "I am highly engaged in this job". Each item was rated on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Higher values reflect greater support. The Cronbach values for these scales was 0.82 and 0.773 for our study.

*Organization engagement*

Organization engagement was measured using the six-item "Organization engagement scale" through adopt Survey of Organization engagement (Saks, 2006) e.g., "Being a member of this organization is very captivating", "One of the most exciting things for me is getting involved with things happening in this organization", "I am really not into the goings-on in this organization", "Being a member of this organization make me come alive", "Being a member of this organization is exhilarating for me" and "I am highly engaged in this organization". Each item was rated on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Higher values reflect greater support. The Cronbach values for these scales was 0.90 and 0.785 for our study.

*Management support*

Management support was measured using the eight-item "management support scale" through adopt and adapt Survey of Perceived Organizational Support (SPOS) (Rhoades et al., 2001) by changing "organization" to "management", e.g., from "my organization really cares about my well-being" to "my management really cares about my well-being" and "my organization cares about my opinions" to "my

management cares about my opinions", respectively. Each item was rated on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Higher values reflect greater support. The Cronbach values for these scales was 0.89 and 0.873 for our study.

*Supervisor support*

Supervisor support was measured using the four-item "supervisor support scale" through adopting Survey of Perceived Organizational Support (SPOS) (Rhoades et al., 2001), e.g., "my supervisor cares about my opinios" and "my supervisor strongly considers my goals and values". Each item was rated on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Higher values reflect greater support. The Cronbach values for these scales was 0.89 and 0.778 for our study.

*Co-worker support*

Co-worker support was measured using the five-item "co-worker support scale" through adopting Hammer et al., 2004 survey questions, e.g., "I receive help and support from my co-workers" and "I feel I am accepted in my work group". Each item was rated on a five-point scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Higher values reflect greater support. The Cronbach values for these scales was 0.83 and 0.902 for our study.

***Results and Discussion***

The analysis with diagnostic checking on normality test using Shapiro-Wilk test. Based on normality test, P-value < 0.05 which indicate that the data was not normal. From the inter-item correlation matrix which shown in Table III, the results show that about 42.7% correlation between job engagement and organization engagement.

| | JOB ENGAGEMENT | ORGANIZATION ENGAGEMENT | MANAGEMENT SUPPORT | SUPERVISOR SUPPORT | COWORKER SUPPORT |
|---|---|---|---|---|---|
| **JOB ENGAGEMENT** | 1.000 | - | - | - | - |
| **ORGANIZATION ENGAGEMENT** | .427 | 1.000 | - | - | - |
| **MANAGEMENT SUPPORT** | .189 | .381 | 1.000 | - | - |
| **SUPERVISOR SUPPORT** | .122 | .081 | .660 | 1.000 | - |
| **COWORKER SUPPORT** | .437 | .336 | .335 | .307 | 1.000 |

*Table III: Inter-Item Correlation Matrix*

For job engagement, it shows co-worker support has the highest correlation at 43.7% as compared to management support and supervisor support which at 18.9% and 12.2% respectively. Hence, from this result it can be concluded that co-worker support has a strong relationship to job engagement as compare to the management and supervisor support. Despite of that, for organization engagement, as expected, management support has the highest correlation at 38.1% as compared to supervisor support and co-worker support at 8.1% and 33.6% respectively. From this finding as well, the lowest correlations between organization engagement and supervisor support was also being observed at 8.1%. It shows that there was a weak relationship between organization engagement and supervisor support. Hence, from this result it can be concluded that management support has a strong relationship to organization engagement whereas supervisor support has the weakest relationship with organization engagement.

| | MANAGEMENT SUPPORT | SUPERVISOR SUPPORT | CO-WORKER SUPPORT |
|---|---|---|---|
| **JOB ENGAGEMENT** | .830 | .933 | .057* |
| **ORGANIZATION ENGAGEMENT** | .048** | .900 | .036** |

*Note: The value in the parentheses are P-Value indicate significant at 95% (**) and 90% (*)*

*Table IV: Chi-Square & P-Value*

Based on Chi-Square test results as per shown in Table IV, interesting findings were found. The results show that co-worker support has significant relationship towards employee for both job and organization engagement at 90% and 95% confidence level respectively. Besides that, management support has a significant relationship with organization engagement as expected. With the above findings, it can be concluded that the outcome of this study has supported H2, H5 and H6 and the rest of the hypothesis were not supported. This finding emphasizes the importance of co-worker support which it

was supported from study conducted by Eva et. al. (2019) which indicate that higher co-worker support can be used to supplement the lack of supervisor support when required.

**Conclusion and Recommendation**

The employee engagement is a crucial element to ensure employee productivity (Rich et al., 2010) and organization commitment (Chalofsky & Krishna, 2009) especially in offshore environment. The findings summarized the important of perceived organizational support as a predictor to employee engagement. It also reveals that co-worker support has a strong relationship to both job and organization engagement as compare to the management and supervisor support. This may due to the fact of offshore operations in nature whereby their co-worker is the one that always be there and close to the employee which to the extent of similar treatment as their second family. Their co-worker or peer will be the one that also be there for them and motivate each other. Although this just a pilot study among offshore employee in oil and gas industry in Malaysia, with this insight, it definitely contribute to the existing literature and provide signal to management in providing a conducive working environment in order to develop good management agent or representative at site through co-worker support which indirectly will increase the level of engagement. This finding also can be adopted to remote or isolation working environment where organization need to assign an employee with co-worker or buddy system instead of alone mission in any situation to maintain satisfactory level of engagement and support required by employee.

**Limitation of Study**

There are some limitations that have been discovered in this study. Firstly, the data was collected through pilot approach which only consider minimum number of respondents which the findings cannot be generalised yet until the full-blown study being conducted. Secondly, the main focus will be the permanent staff of the operators. Hence, the views from Service Company or contractor that directly work under the operator (e.g. general helper, catering crew, radio operator, crane operator, material coordinator) will not be considered in this study. This approach has been taken due to the fact that different organization has its own organizational cultures which directly translate to the way employees behave. According to an article written by Rick T., (2015), the most important thing about culture is that it's the only sustainable point of difference for any organization since anyone can copy a company's strategy, but nobody can copy their culture. Thirdly, the respondents will be only limited among the technician. This is due to the fact that technician is the lowest rank among permanent staff at offshore. Besides that, researcher also observed area of improvement to apply dual language on the online questionnaire for the full blown exercise to ensure respondent fully understand the question and provide correct feedback since about 42.5% of respondents do not have higher education level which can be translated into their proficiency in understanding questionnaire in English. Lastly, it is proposed future study to evaluate the impacts on new manpower mix according to their generation cohorts which will provide better insight for management to pay more attention.

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# Relevant analysis of grain safety and social development factors based on grey modeling technology

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**Key Words**
Grain safety; Grey relational analysis; GM (1,1); PSO; China

**Abstract**

*In the context of marketization and informationization, the problem of grain safety is facing more multidimensional impacts, more complex environment, greater challenges and more multi-source risks in China. At present, grain safety has become an important part of national security strategy of China. How to effectively identify the internal structural contradictions and potential risks of grain is an urgent problem to be solved. From two perspectives of domestic macro-economic factors and agricultural industry factors, this paper is to analyze the relationships between grain safety and social development factors. First, grey generation technology is applied to pre-process multi-source heterogeneous data series. Then, by establishing improved grey correlation model and particle swarm optimization algorithm (PSO), grey intelligent correlation model based on grain safety comprehensive index is constructed that tries to explore the correlation between grain safety and GDP level, urbanization level, education level, CPI index, retail price index of grain, total sowing area, total power of agricultural machinery, fertilizer application rate and other factors. Aiming at the main factors, the developing trends are forecasted which are helpful for analysis the trend of grain safety risk of China in the future. Finally, the corresponding countermeasures and suggestions are put forward to provide decision support for relevant government departments in China.*

# Dynamic and static Raman spectroscopic characterization analysis of dairy products

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**Keywords**
Data analysis, Raman spectroscopy, Dairy product, Quality control

**Abstract**

*The quality characterization analysis of dairy products is an important procedure to realize their quality control. Raman spectroscopy can characterize the component information of dairy products. This paper elaborated the Raman spectral information of dairy products from the dynamic and static levels. The signal assignments of pure milk products and low-fat milk products based on the traditional Raman spectroscopy and two-dimensional correlation Raman spectroscopy were presented, respectively.*

## Background

Raman spectroscopy is a kind of vibration spectroscopy, which can characterize the abundant component and structure information of samples. At the same time, the Raman scattering interface of water is small, and its Raman effect is weak. Therefore, the signals of liquid samples can be collected directly by Raman spectroscopy. Raman spectra of two kinds of liquid milk products were collected in this experiment, and their Raman spectra data were analyzed from dynamic and static levels, respectively. Figure 1A shows the Raman spectra of a brand of pure milk product under different laser accumulation time (50 s - 250 s). The main Raman peaks were tentative assigned as follows according to the literatures (Zhang et al., 2019; Zhang et al., 2017; Rodrigues Júnior et al., 2016; Almeida et al., 2011): The Raman band at 1760 $cm^{-1}$ could be contributed from C=O stretching ester of fatty acids. The band at 1668 $cm^{-1}$ could be associated with the C=O stretching mode from the CONH group of amides I of proteins and C=C stretching mode from unsaturated fatty acids. The band at 1618 $cm^{-1}$ could be associated with the ring vibration of phenylalanine probably assigned to proteins and aspartame. The band at 1567 $cm^{-1}$ was mainly due to N-H deformation and C-N stretching of amide II of proteins. The strongest Raman band was at 1455 $cm^{-1}$ and could be contributed from $CH_2$ deformation of fats and carbohydrate molecules. The band at 1314 $cm^{-1}$ was suggested to $CH_2$ twisting of lipid molecules. The band at 1277 $cm^{-1}$ could be assigned to $CH_2$ twisting mode of carbohydrates. The Raman spectral range between 800 and 1200 $cm^{-1}$ was suggested to carbohydrates, such as C-C stretching and C-O-H deformation (1168 $cm^{-1}$, 1135 $cm^{-1}$, 1093 $cm^{-1}$ and 1045 $cm^{-1}$) as well as C-O-C deformation (955 $cm^{-1}$ and 891 $cm^{-1}$). Except the band at 1014 $cm^{-1}$, which could be assigned to the ring breathing of the ring vibration of phenylalanine probably assigned to proteins and aspartame. There were about three bands in the range of 250 - 800 $cm^{-1}$, which could be attributed to C-C-O deformation (632 $cm^{-1}$), C-C-C deformation and C-O twisting (499 $cm^{-1}$) and lactose (368 $cm^{-1}$).

Figure 1C shows the Raman spectra of the same brand of low-fat liquid milk product under different laser accumulation time (50 s - 250 s). The main Raman peaks were assigned as follows: The band at 1669 $cm^{-1}$ was the contribution from the C=O stretching mode, the so-called amide I mode associated with CONH group of proteins and from C=C stretching mode of unsaturated fatty acids as well. The band at 1615 $cm^{-1}$ could be associated with the ring vibration of phenylalanine probably assigned to proteins and aspartame. The band at 1570 $cm^{-1}$ could be contributed from N-H deformation and C-N stretching of amide II of proteins. The band at 1461 $cm^{-1}$ could be contributed from $CH_2$ deformation of fats and carbohydrates. The band at 1325 $cm^{-1}$ was suggested to $CH_2$ twisting mode associated with the presence of lipid molecules. The band at 1268 $cm^{-1}$ could be attributed to $CH_2$ twisting of carbohydrate molecules. The region between 800 and 1210 $cm^{-1}$ was dominated by characteristic vibrational modes related to

carbohydrates, such as C-C stretching and C-O-H deformation (1208 $cm^{-1}$, 1169 $cm^{-1}$, 1133 $cm^{-1}$, 1092, and 1042 $cm^{-1}$) as well as C-O-C deformation (809 $cm^{-1}$). The strongest Raman band at 1013 $cm^{-1}$ was assigned to the ring breathing mode associated with the presence of the amino acid phenylalanine and aspartame. There were about two bands in the range of 250 - 800 $cm^{-1}$, which could be attributed to C-C-O deformation (635 $cm^{-1}$), C-C-C deformation and C-O twisting (501 $cm^{-1}$). It was found that the fat peak (1760 $cm^{1}$) was disappeared in Raman spectra of low-fat milk by static spectral analysis. So that these Raman spectral characterization information was key quality characteristics of milk products and could be used for quality discrimination of milk products.

Furthermore, the dynamic spectral analysis method was used to analyze the samples. Two-dimensional correlation analysis method was applied to obtain the three-dimensional spectra of the experimental samples, the average spectrum was used as the reference spectrum (Park et al., 2018; Noda and Ozaki, 2005), as shown in Figure 1 B and D, respectively. The results showed that the pure milk product had four auto peaks around (1664, 1664), (1453, 1453), (1315, 1315) and (1079,1079) with positive intensities, as well as twenty-four cross peaks around (1648, 1461), (1461, 1648), (1664,1315), (1315,1664), (1664,1087), (1087,1664), (1664,469), (469,1664), (1461,1315), (1315,1461), (1461,1087), (1087,1461), (1461,852), (852,1461), (1461,461), (461,1461), (1307,1087), (1087,1307), (1307,461), (461,1307), (1087,469), (469,1087), (1006,469) and (469,1006) with positive intensities. The low-fat liquid milk product had four auto peaks around (1607,1607), (1461,1461), (1014,1014) and (494,494) with positive intensities, as well as twelve cross peaks around (1607,1461), (1461,1607), (1607,1014), (1014,1607), (1607,478), (478,1607), (1453,1014), (1014,1453), (1453,478), (478,1453), (1014,445) and (445,1014) with positive intensities. The figure showed that there were obvious differences between the two dairy products in three-dimensional space. At the same time, it was found that the band at 1760 $cm^{-1}$ of fat peak was also disappeared in the three-dimensional image of pure milk product after the dynamic algorithm procession, because the intensity of the fat peak exhibited no obvious changes under different laser acquisition time conditions. The two-dimensional correlation calculation mainly focused on the dynamic change, so that the dynamic calculation results of the fat peak was closed to zero.

Therefore, dynamic and static comprehensive data analysis should be used to obtain accurate dairy product characterization information.

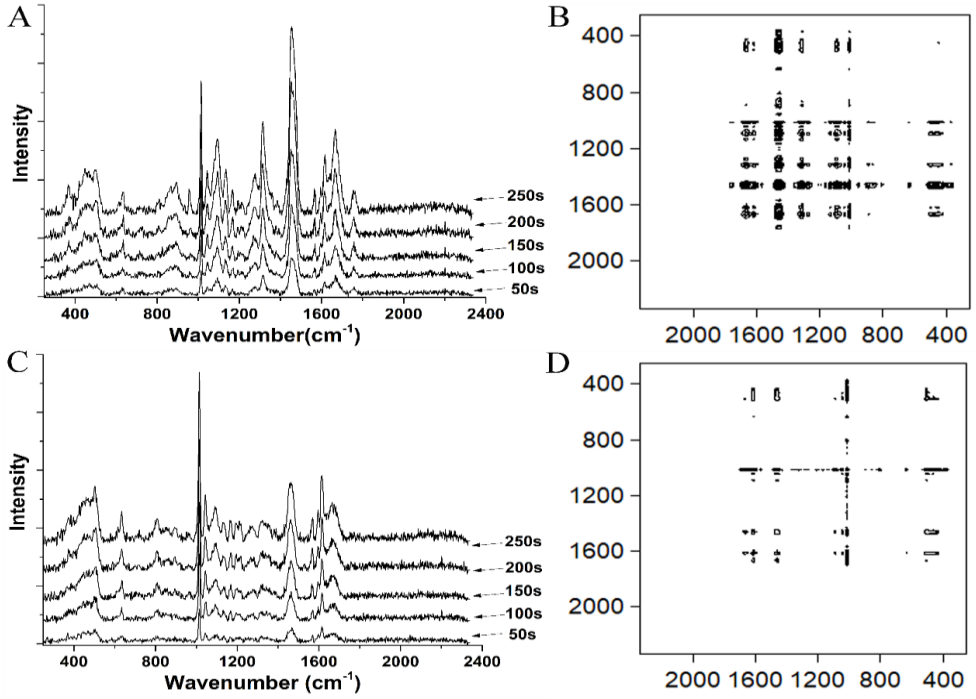


Figure 1 (A) Raman spectra of one pure liquid milk product under different laser accumulation time (50 s – 250 s). (B) synchronous two-dimensional correlation Raman spectrum of the pure liquid milk product. (C) Raman spectra of one low-fat liquid milk product under different laser accumulation time (50

s - 250 s). (D) synchronous two-dimensional correlation Raman spectrum of the low-fat liquid milk product.

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# Delivery service investment strategy of perishable food for competing firms with social media

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**Keywords**
Delivery service investment, Food Supply Chain, Social Media, Nash Equilibrium, Stackelberg Game

**Abstract**

*We investigate the impact of investments in delivery service of perishable food with two competing firms, which are both manufacturers and retailers. Due to the perishability of the food, retailer price is inversely proportional to the remaining expiration days. Customers diffuse between different markets, based on purchasing experience and under the effect of social network (i.e., comments on shopping websites). At the beginning of a period, the firms decide on investments costs, aiming at maximizing the profit per unit time or market share. We distinguish two variants: one where both firms decide autonomously (Nash equilibrium) and a leader-follower (Stackelberg game) case. For both cases, the optimal investment cost, optimal profit per unit time and the effect on market share are analyzed or numerically calculated. We also solve the two cases without social network. Numerical analysis shows that both firms invest more when the social network exists, and higher profits are gained.*

# The influence of internal control system and the use of information technology to the village government accountability in managing village fund allocation at Takalar regency

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**Keywords**
Internal Control System, Utilization Of Information Technology, and Accountability

**Abstract**

*This study aims to Determine and analyse the influence of internal control systems, and utilization of information technology on the accountability of Governments in managing village fund allocation. This study uses primary data obtained from the distribution of questionnaires. The respondents in this study were a number of staff and employees at the Office of Community Empowerment and Village Government Services of Takalar Regency, village Officials (village chief, secretary and treasurer) and Several community leaders in Takalar District. The number of samples in this study was 110 respondents. Analysis of research of data using multiple linear regressions. The results of the study show that: (1) The internal control system has a positive and significant effect on the accountability of Governments in managing village fund allocation.*

# Government regulation policy and contracts in food supply chain: a view of quality chain coordination

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**Keywords**
Food quality chain, Coordination contract, Government regulation policy, Game theory

**Abstract**

*In a view of quality chain coordination, a food supply chain is discussed in this paper, within a market with quality-conscious and price-sensitive customers, and government's quality regulation policy, as Figure 1 shows. In this system, the producer needs a unit production cost to produce, a quality setup cost to ensure the food with a certain quality degree and sells to the retailer at a wholesale price. The retailer has a unit operation cost for each unit food sold. The demand dependents on retail price and quality degree. The government set a standard of the quality, and a subsidy/penalty scheme for the producer. Given the producer's role in the quality chain and its weakened position in FSC, here, we consider the quality-setup-cost sharing contact scenario (CSC scenario) and the retailer-selling-income sharing contact (ISC scenario). In CSC scenario, the retailer burdens the producer's quality-setup-cost with a certain proportion. In ISC scenario, the retailer transfers its selling-income to the producer in a proportion.*

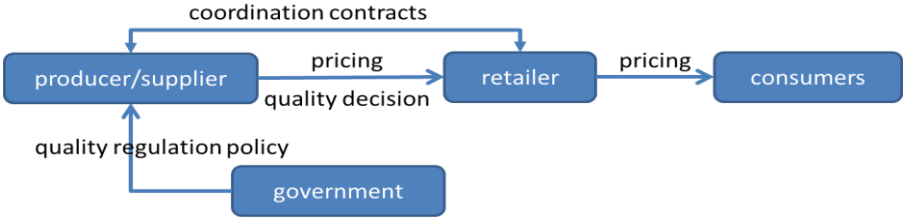


*Figure 1. FSC with government's quality regulation policy in a quality-conscious and price-sensitive market*

*Based on the above background, game theory is applied to analyze the impacts of price elasticity, quality elasticity and quality cost of the food and different contracts on pricing, producing and the revenues of the stakeholders and the food supply chain. The results found that stricter quality regulation policy, i.e. raising the quality standard and the subsidy/penalty rates, has a significant impact on the food quality. Also, with the quality-cost sharing contract and the retailer-income sharing contact, the quality of the food and the demand of the market will increase and the retail price will decline, and with value constraints of the sharing ratio, the revenues of the stakeholders will increase at the same time.*

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# Quality-driven consumer perception in Chinese dairy market: post milk scandal era

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**Keywords**
Consumer behaviour, Chinese Dairy market, Food quality, Post milk scandal

**Abstract**

In 2008, the Chinese Dairy market was almost destroyed due to the Milk Scandal across China. The Milk Scandal of 2008 brought public attention to the food safety and quality of the brand "Made in China'. More and more Chinese parents lose faith to the baby formula "Made in China" and spend heavily to buy "Foreign" baby formula. This research investigates the quality-driven online purchase behaviour of consumers in Chinese dairy market at the Milk Scandal of 2008. It aims to explore the perceptions of consumers towards the baby formula. This research investigates consumers' perceptions via analysing their comments about baby formula in online forum. The results show that Chinese parents relate the quality of baby formula to the country of origin, price, and the additives in the baby formula. We discuss the implications of these findings in terms of managerial recommendations and offer suggestions for future research.

# Role of attitude towards knowledge sharing, perceived norms and perceived control to predict knowledge sharing behavior among auditors in service organizations of Pakistan

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**Keyword**
Knowledge sharing behavior, Attitude, perceived behavioral control, perceived norms, auditor

**Abstract**

*The main purpose of this study is to investigate how behavior can be associated with the Attitude towards Knowledge sharing, perceived norms related to knowledge sharing, behavioral control, and intention to share knowledge with the knowledge sharing behavior (KSB). This study is cross-sectional because it is conducted within a one-time frame and based on survey design. Researchers visit various audit firms and collected the data through a self-administered questionnaire from various auditors of different firms. The sample consists of auditors of the Auditing firms of Lahore, Pakistan. Overall, 290 questionnaires were distributed among the auditors. Out of 290 questionnaires, 275 were used for analysis. In this research, the non-probability convenience sampling technique was used. The analysis shows that Perceived norms and perceived lack of facilitating condition have a significant effect on knowledge sharing behavior. Perceived behavioral control mediates the significant relationship of attitude, perceived norms with knowledge sharing behavior. Similarly perceived behavioral control does not mediate the relationship among perceived lack of facilitating condition and knowledge sharing behavior. limitations and future direction have been discussed in the last section of the paper.*

## Introduction

Data is seeing an important tool for any firm in any sector. In any organization, knowledge is a consider valuable resource for any business. In initial's the knowledge management system implementation through the knowledge sharing, that provide a proper relationship among the specific person and firm, through sharing data which remain inside administrative in any firm. Knowledge remains among persons; so, sharing knowledge inside auditing organizations is rely on sharing knowledge by the auditors in the organization.

In public accounting or auditing firms a high switch ratio of workers. Especially those employees who have a lot of experience of many years, leave a firm due to this their information or data would be misplaced. Executive of audit company proposes that get the help from those auditors who do not have the proper job information and the job experience will cause the audit insufficiencies in some previous years: whereas those auditors who have more working practice may switch company and low skilled auditor complete different task (Munter 2015). By encourage, the auditor toward contribution in the knowledge-sharing behavior made a proper explanation for fewer knowledge waste in auditing companies. After those auditors who have experience can share the knowledge in company knowledge management system, fewer experience auditor had admittance the knowledge management system, similarly, those auditors who can share knowledge have a lot of greater experience in the performance. So, to retain experienced auditors in public firms is become one of the big issues for that public accounting and auditing firms.

Different audit studies record the significance of knowledge-sharing. Vera-Munoz et al. (2006) recommend distribution information may support to upsurge the success, competence of auditor (Vera-

Munoz et al. 2006;). Contained research can show auditor skill which proposes the quality of audit progresses when they use the technique of knowledge sharing behavior (Car-son 2009; Reichel and W-ang 2010). The different expertise has to get growth to get access and understanding in the auditor's knowledge sharing behavior. Many previous studies investigate the accounting participant, shows the intentions to share the knowledge and then draw the conclusion on that collection of that data. So, it's important to know the real sharing behavior of person similarly many methods that can be used to share the knowledge between the auditors.

In different research shows the significance to increase the sharing of knowledge in every organization. Vera-Munoz et al. (2006) show how to manage the information in the company as well as cheers the persons to share more knowledge. Auditors must perform a different task during work with great care. Auditors always understand the company policies, the way of managing accounts properly understand it then distribute work among the members of audit, similarly, it is not necessary to distribute the information of the firm among the auditors. In some studies, expert auditors can emphasize to share more knowledge at the workplace because it will help them to understand work more easily. Car-son (2009) and Reichel and W-ang (2010) shows knowledge which is increased through sharing in business whether in the workplace which may be used to help customers in similar business. They show the excellence of audit which improves when companies show some skills over knowledge sharing activities.

Past studies have less attention to knowledge sharing behavior of auditors in the organization. Now a day, many beginner's face problems when they initially start their audit job. The problem encourages this research is the basic thing to understand each factor in which many problems faced by the auditors in Pakistan which affect their knowledge-sharing problem. In Pakistan, there is no work is made on the auditor knowledge sharing behavior inside the organization. So now a day it becomes compulsory to share the knowledge inside the organization to help the junior and new employees and build their interest in the work. By sharing knowledge, knowledge cannot decrease. My research is based on the knowledge sharing that senior auditors may help their junior auditors or not and guide them in a proper way.

**Research Objectives**

To examine the problem, describe in the study, the research objective has been developed.

1: The of perceived norms on knowledge sharing behavior?

2: The impact of perceived lack of facilitating conditions on knowledge sharing behavior?

3: The impact of attitude towards knowledge sharing on knowledge sharing behavior?

4: The effect of perceived behavioral control on knowledge sharing behavior?

5: Perceived behavioral control will mediate the effect of perceived norms, Perceived lack of facilitating conditions, attitude towards knowledge sharing on knowledge sharing behavior?

**Literature review**

**Theory of reasoned action**

Arjen and Fish have been in 1970 give an explanation where they defined "attitude and subjective norm as two dimensions of behavioral intention which is showing by the person (Ajzen & Fishbein, 1980). Fish has been and Arjen (1975) described attitude as a person shows favorable or unfavorable emotion by performing the target behavior. The intention to show or not to show the behavior is the best predictor of person's behavior, and individual's attitude can be led the behavior is good predictors of intention (e.g. how they feel positively or negatively leads the behavior). In Ajzen (1985) stated the perceived behavioral control directly connected with behavior" of the personal intention which is showed by the person.

In any case, a hypothesis which is arranged by conducting a mandatory through individuals who don't have adequate control on enthusiasm. (Arjen, p. 181). Arjen depicted that there is a very fewer distinction among Concept of arranged behavior (TPB) and the concept of contemplated action (TRA), On the other hand, person's conduct is as indicated by deliberate control of the psyche. Distinctive components aggravate whether people have their control, for example, cash, time, aptitudes and so forth.

The concept of contemplated activity (TRA) purposefully prevent this conduct in circumstances where an individual control his conduct and mindful of it. Baozi (1982) clarified TRA understanding, down to earth and infiltrating model has the capacity to depict the conduct. Contemplated activity recommended that conduct of individuals is self-absorbed by inclining towards the activity. In any case,

Communication goal finished through a merger of two measurements: conduct can prompt frame of mind and emotional standards. A few practices anticipated by contemplated activity (Shepard, Hat wick 1988).

The knowledge is to know about the thing. It cannot be mixed with the data because data can occur from raw facts, but the knowledge is to understand those things. Behavior is a person's action which can be shown in a situation. It can be related to your identity, attitude, and personality. Similarly, knowledge is also more complex than the information because the information is about to gather the data in a meaningful way, but the knowledge is the name of interpreting that information and gets the results. Knowledge is influenced by the person who can hold it in a meaningful way. Knowledge is the name of attitude belief and behavior (Lee and Yang, 2000). Similarly, many results occur from knowledge by doing some interaction of persons or any other experiment (Iske and Boersma, 2011).

"According to Gammelgaard and Ritter (2000), knowledge can be defined as:

A fluid mix of framed experience, values, contextual information, and expert insight that provide a framework for evaluating and incorporating new experiences and information. Knowledge originates and prospers in the minds of experts. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routine, process, practices, and norms".

Attitude defines as the essential qualities of a mind to give response positively or negatively to himself, others and the surroundings (Ajzen, 1985). The attitude of a person can be express in two ways, whether it can be positive or whether it can be negative. The positive attitude of the employee will be shown if the atmosphere is according to his personal like. Due to a positive attitude, he can share knowledge as more as he can according to his own desire. So, it would help to achieve the organization overall objectives and company can exist in the competitive world. Similarly, if the working condition like environment is not according to the auditor's choice so he can not share the knowledge with his subordinates.

An attitude is a person's comparatively enduring sentimental orientation for an entity. A one's arrogance shows a performance which is determined by salient beliefs about positive outcomes caused by the performances and the consistent evaluation of the outcomes. Concurrently, these beliefs may be affected by some "outside variables." Such outside variables do not differ with the penalties of the behavior and they might exist and develop self-sufficiently with or without performing the behavior. Through impacting a person's salient views about the behavior, the outside variable can control an individual's attitude toward the behavior to some degree. To avoid misunderstanding between the above psychosomatic term "external variable" and the related terms.

The Theory of Planned Behavior (TPB) can further explain the Theory of Reasoned Action (TRA) that including the perceived behavioral control (Ajzen, 1988). The theory of planned behavior defines the behavior by intention to share knowledge among different people in the organization.

"Notwithstanding the theory's general success, solving different problems remain (Armitage & Conner, 1999b; Conner & Armitage, 1998; Sheeran & Orbell, 1999a; Sutton, 1998). The current article reports one of these hitches, which is namely the nature and amount of perceived behavioral control. The theory of perceived behavior control was consequent from the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), which is assumed that most human shows social behavior is below volitional control and it can be forecast from intentions of the personal behavior alone. The concept of PBC (perceived behavioral control) was additional to deal with circumstances in which different people may lack complete control over the sharing behavior of interest. And it can immediately be seeming that carrying out this intention of sharing knowledge is not totally under the individual's control".

In any case, a shot of reflection demonstrates that the "social control" paving the way to the achievement of various zones which might be estimated these objectives with their very own possible issues of usage. To put it plainly, even standard regular practices of any individual can be liable to surprising issues, and volitional control on conduct is, therefore, best estimated any issue or matter of degree moderately than its sort. Numerous ideas of (PBC) saw social control was exhibited into the (TPB) hypothesis of arranged conduct to put up the nation volitional components trademark, at any rate potentially, in all activities. Notwithstanding when not exact, the apparent social control is like influence people expectations. A more elevated amount of apparent conduct control should reinforce an individual's close to home aim to finish the conduct, and upsurge exertion and ingenuity. Thusly, the (PBC) saw conduct control may influence the conduct in a roundabout way, by its impact on people aim.

Furthermore, when (PBC) saw social control is taking by an individual in a various way so it will convey progressively helpful data around the real control of an individual which can work out in any condition.

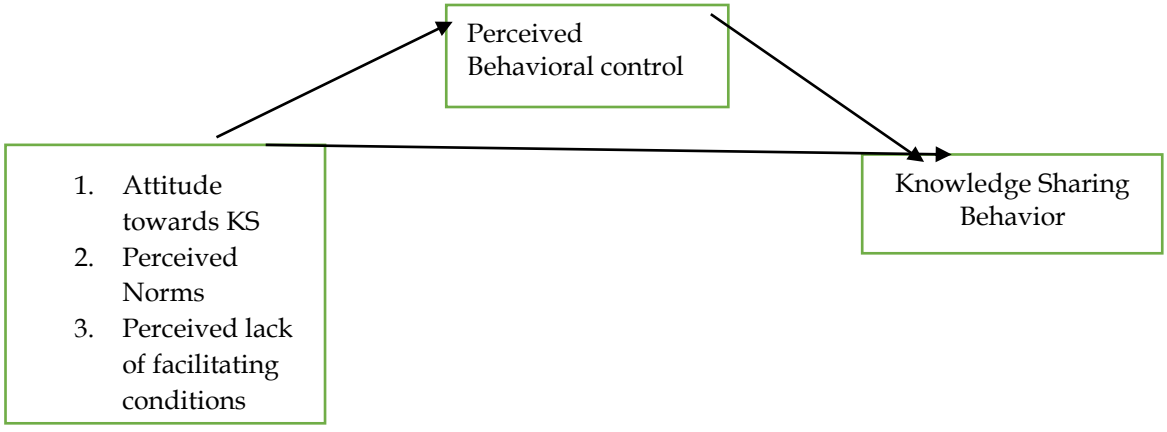
A "subjective-norm is the perceived social pressure to perform or not to perform the behavior" (Arjen, 2OO1). In standards, a person must have agreed to share information if he is not agreeing he is unable to share such information with their respected colleagues, employees, and other higher members of the company. Sometimes the environment does not suit so in this way information or data cannot be shared with friends and other members. In different audit firms, senior auditors manage each and everything related to their fieldwork so they can also help their subordinates

Information translation shows the data change the knowledge of the person related to knowledge of the company. O-Leary (2002) proposes the significant to comprehend services which can be leading to the sharing of knowledge. Though some dissimilar explanations of KM by usingthe information it can give competitive advantage related to other business (Davenport and Prusik 1998.

Many types of aspects like top organization and organizational culture, expertise, exercise, tutoring, incentives, and knowledge sharing, these aspects are the key features of the organization that leads the organization to the top. Robbins (2003) proposes that establishments would generate administrative values that sustenance to share and grow different methods that inspire employees where they settled information and proficiency with employees.

In this "perceived lack of facilitating, conditions can be defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system (Venkatesh et al., 2003, p. 453, p. 453)".

Theoretical framework




Development of Hypotheses:

H1: There is a significant connection among Attitude towards knowledge sharing and knowledge sharing behavior.

H2: There is a significant connection between Perceived Norms and knowledge sharing behavior.

H3: There is a substantial connection among Perceived lack of facilitating conditions and knowledge sharing behavior.

H4: There is a significant connection among Attitude towards knowledge sharing and Perceived Behavioral control

H5: There is a significant connection between Perceived Norms and Perceived Behavioral control.

H6: There is a substantial connection among Perceived lack of facilitating conditions and Perceived Behavioral control.

H7: Perceived behavioral control shows mediation among attitude, perceived norms, perceived lack of facilitating with knowledge sharing behavior.

**Research methodology**

The main purpose of this study which shows that the behavior can associate the Attitude towards KS, perceived norms related to KS, behavioral control and intention to share knowledge with the knowledge sharing (KSB). A most imperative aspect that shows is a unit of investigation. The unit of

analysis is characterized as essential angle where the specialist needs to explore in his investigation (Marden, 2012). The auditors of different audit firm can be taken as a unit of examination in this research study. This study is cross-sectional because it is conducted within a one-time frame. Researcher visits various audit firms and collects the data by filling the questionnaire from different auditors of the different firms. Here mark people which is selected for research and collection of data is auditors of the Auditing firm of Lahore, Pakistan. 290 questionnaires including 29 items were distributed among workers of various auditing firms of Lahore. Out of 290 surveys, 275 were completely filled and were used for analysis. The information which is collected from different auditors which are working in different audit firms. In this research, the "non-probability convenience sampling technique was used". The significance of selecting that sampling method was time and the money constraint. The questionnaire was distributed among the individuals of the different age group and experience with respect to gain the distinctiveness. And the main reason to select the Lahore city due to lack of time and the money. Data is measure through Amoss and Spss.

**Measure**

In our study, the variables of the study can be measured on the Likert scale. All the variable measure on the same scale. The bilateral explanation was used for the diminishing the error which occurs during the filling of the questionnaire.

**Knowledge sharing behavior**

The knowledge sharing is important by which it is asked to the employees of the audit firm, whether they intended to share knowledge or not infirm when they were performing an audit in their respected audit firms. "For this purpose, the five-rating scale is used 1=strongly disagree and to 5=strongly agree. The knowledge sharing behavior contains 9-items (such as; e.g. Most people who are important to me think that I should share knowledge with the firm").

**Attitude Toward Knowledge Sharing**

In any organization, the attitude of the auditors gives importance to the knowledge sharing, whether they are agreed or not, and their attitude is positive to the situation or it will be negative, so attitude contributes more in the knowledge sharing. "Five questions are drawn from Bock et al. (2005) and Fishbein and Ajzen (2010) were used to measure attitudes toward knowledge sharing. For this purpose, the five-rating scale is used 1=strongly disagree and to 5=strongly agree. The Attitude Toward Knowledge Sharing contain 5-items (such as; e.g. In general, auditors' knowledge sharing can improve an audit firm's value and competitive advantage").

Perceived Norms Related to Knowledge Sharing

A proper pattern which can be taken according to the work relating to the behavior of the person, where norms can be divided into two parts whether it can be positive according to the desire of the person or it can also show negative by the person. "Perceived norms were also measured through four questions (Bock et al. 2005; Fishbein and Ajzen 2010). For this purpose, the five-rating scale is used 1=strongly disagree and to 5=strongly agree. The Perceived Norms Related to Knowledge Sharing contain 4-items (such as; e.g. When it comes to knowledge sharing, I want to do what my audit manager thinks I should do)".

**Perceived Behavioral Control**

The perceived behavior control can also affect the behavior whether it may make some effect directly or indirectly on knowledge sharing behavior. "Perceived behavioral control variable was assessed through four questions (Fishbein and Ajzen 2010). The participants show their control relating to the knowledge sharing behavior. The perceived behavior can also be an important variable of the study. For this purpose, the five-rating scale is used 1=strongly disagree and to 5=strongly agree. The Perceived Behavioral Control contain 4-items (such as; e.g. I am confident that I can share my knowledge)".

**Perceived lack of facilitating conditions**

Knowledge sharing can also be depending on the facilitating condition If the conditions cannot be properly provided so it must be difficult to share the knowledge among the employees of the audit firm. This variable contributes as a moderator in the research made an important impact on it. "The question of this variables is not available, so the questions can be created by the researcher. For this purpose, the five-

rating scale is used 1=strongly disagree and to 5=strongly agree. The perceived lack of facilitating conditions contain 3-items (such as; e.g. I do not like to share knowledge with my audit team because they are not supportive)".

**Analysis**

**Demographics of the Study**

| Demographical Characteristics | Groups | Frequency | Percentage |
|---|---|---|---|
| Age | 22-25 | 130 | 47.3 |
| | 26-29 | 71 | 25.8 |
| | 30-33 | 48 | 17.5 |
| | Above 33 | 26 | 9.5 |
| Gender | Male | 161 | 58.5 |
| | Female | 114 | 41.5 |
| Marital Status | Single | 163 | 59.3 |
| | Married | 112 | 40.7 |
| Work Experience | Less than 1 year | 86 | 31.3 |
| | 1-5 years | 116 | 42.2 |
| | 6-10 years | 48 | 17.5 |
| | Above 10 years | 25 | 9.1 |
| Qualification | Graduation | 18 | 6.5 |
| | Master | 135 | 49.1 |
| | MPhil | 121 | 44.0 |
| | Others | 1 | .4 |
| Certificates | CPA | 20 | 7.3 |
| | CISA | 22 | 8.0 |
| | CMA | 81 | 29.5 |
| | CIA | 26 | 9.5 |
| | Others | 126 | 45.8 |
| Job Designation | Staff Auditor | 48 | 17.5 |
| | Senior Auditor | 77 | 28.0 |
| | Audit Manager | 49 | 17.8 |
| | Audit Partner | 21 | 7.6 |
| | Others | 80 | 29.1 |
| Work in Organization | Big four accounting firm | 26 | 9.5 |
| | International accounting firm | 45 | 16.4 |
| | Regional accounting firm | 90 | 32.7 |
| | Others | 114 | 41.5 |

Correlation

| | Mean | St. Deviation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| KSB | 2.3090 | .51208 | .753 | | | | |
| ATKS | 3.9464 | .68540 | .733** | .758 | | | |
| PN | 2.2001 | .47181 | .489** * | .487* | .758 | | |
| PBC | 3.5473 | .54749 | .707** * | .645* * | .580* | .827 | |
| PLFC | 3.8159 | .73440 | .367** * | .370* * | .385* ** | .540 | .734 |

**. Correlation is significant at the 0.01 level (2-tailed).

The above table showed the relationships among variables. All values are less than .9 which shows there is no issue of multicollinearity in the data. It also shows the mean values with a minimum range of 2.2 to a maximum range of 3.8. And also shows the value of standard deviation with a minimum value of .471 to maximum value .734.

**Reliability of each variable also shown diagonally.**

**Confirmatory Factor Analysis:**

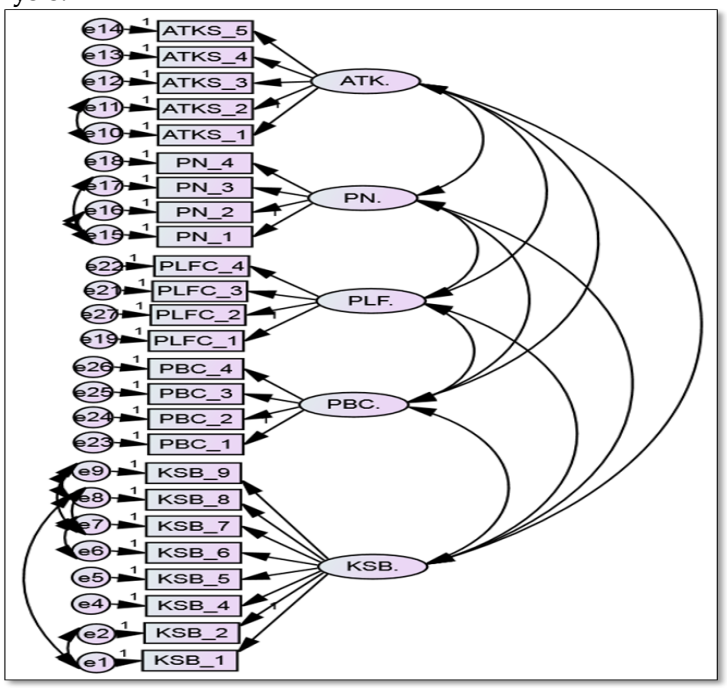



Figure 1: Measurement Model

Standardized Regression Weights: (Group number 1 - Default model)

Above table shows that all factor loading is greater than .3.

Fitness summary:

| CMIN/DF | CFI | GFI | AGFI | RMSEA | PCLOSE |
|---|---|---|---|---|---|
| 1.451 | .954 | .906 | .880 | .041 | .962 |

According to Hu and Bentler, (1999) argued that the value of CFI is considered good if the value of CFI is greater than .9. The value of GFI should be greater than .9. The value of AGFI is considered good if the value of AGFI is greater than .85. And the value of RMSEA should be less than .08 which considered a model good fit.

**Structural Equational Model**

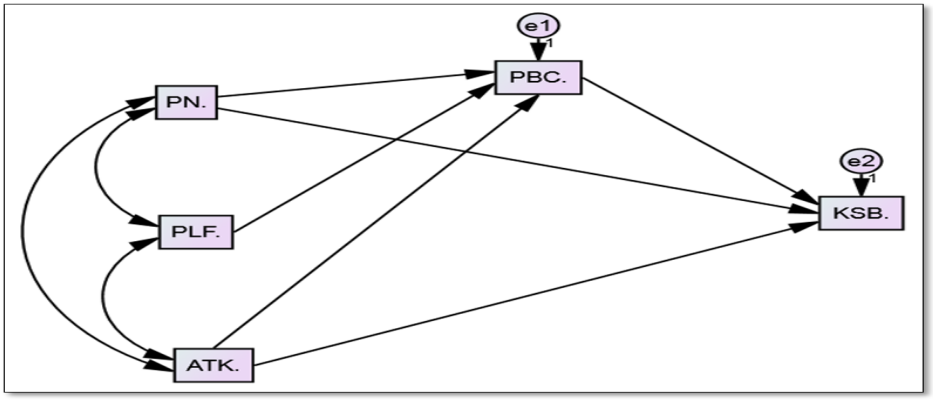



Figure 2: Structural Equational Model

Regression Weights: (Group number 1 - Default model)

| | | | Estimate | P |
|---|---|---|---|---|
| PBC. | <--- | PN. | .378 | *** |
| PBC. | <--- | PLF. | .411 | *** |
| PBC. | <--- | ATK. | .566 | *** |
| KSB. | <--- | PBC. | .422 | *** |
| KSB. | <--- | ATK. | .644 | *** |
| KSB. | <--- | PN. | .062 | *** |

**Bootstrapping Strategy**

For mediation analysis, the bootstrapping strategy is used to examine both the direct and indirect effects of the model.

Mediation Analysis:

| Paths | Direct Beta Without Mediation | Direct Beta with Mediation | Indirect Beta | Results |
|---|---|---|---|---|
| PN-→ PBC--→ KSB | .193** | .121** | .371** | Partial |
| PLFC--→PBC-→KSB | -.081(NS) | -.052(NS) | .355** | Indirect effect |
| ATK-→PBC--→ KSB | .654** | .473** | .258** | Partial |

**Discussion**

There are some hypotheses of this study which is as follows:

The first hypothesis was there is a significant relationship between attitudes towards knowledge sharing and knowledge sharing behavior. According to Yang and Lai (2014) argued that there is an effect of attitude towards knowledge sharing on knowledge sharing behavior. Then the result of this study is consistent with the previous study with (β=.644, p=.001). Related to attitude towards knowledge sharing is a good indicator of knowledge sharing behavior of employees in any organization. If employees perceive good information or knowledge, then they have a positive intention to share knowledge with peers. So, H1 is fully supported. The second hypothesis was there is a significant association between perceived norms and knowledge sharing behavior. According to Rimal et al., (2014) construed that there is a significant relationship between perceived norms and behavior. Because when perceived social norms are relatively high then the behavior to sharing their knowledge also increased in employees. So, H2 is fully supported. The third hypothesis was there is a significant relationship between attitude towards knowledge sharing and perceived behavioral control. The result of this study is persistent with the previous study of (β= .556, p=0.001), (Ajzen, 1988; Yang & Lai, 2014). If the employees perceived behavior their intention to share knowledge also increased. So, H3 is fully supported. The fourth hypothesis was there is a significant relationship between perceived norms and perceived behavioral control. According to Shi et al., (2017a) argued that there is a significant relationship between perceived behavioral control and perceived norms. And the findings of this study are consistent with the previous study with (β=.378, p=0.001). When the perceived norms of employees strong and expectations with peers also significant than the behavior of employees obviously change. So, H4 is fully supported. The fifth hypothesis was there is a significant relationship between lack of workers condition and perceived behavioral control. According to Bockerman and IImakunnas (2019) argued that there is a significant relationship between working conditions and perceived behavioral control and the result of this study is persistent with the previous study with (β=.411, p=0.001). Moreover, when the working environment for the employees is not suitable and comfort then it directly affects the behavior of the employees or also may cause their low job performance. So, H5 is fully supported.

The sixth hypothesis was there is a significant relationship between perceived behavioral controls and knowledge sharing behavior. According to Moghavvemi et al., (2017) argued that there is a positive relationship between perceived behavior control and knowledge sharing behavior. And the result of this study is consistent with the previous study with (β= .422, p=0.001). When employees perceived their behavior about sharing some information to their peers ultimately their effect on the behavior intention of the employees. So, H6 is fully supported. The seventh hypothesis was perceived behavioral control is mediating the relationship between perceived norms and knowledge sharing behavior. Kim and Nah (2018) found that there is a relationship of perceived behavioral control in knowledge sharing behavior and perceived norms with the (β=.371, p=0.001). When an employee's perceived norms are high then the ability to perceived control of employees also increased and direct effect on knowledge sharing behavior. So, H7is also fully supported. The eighth hypothesis was there is a mediating relationship of behavioral control between the perceived lack of facilitating conditions and knowledge sharing behavior. There is no literature found according to this relationship. Therefore, according to my result, there is no mediation exist between lack of workers conditions and knowledge sharing behavior. So, H8 is not supported. The ninth hypothesis was there is the mediation of perceived behavioral control between attitude towards knowledge sharing and knowledge sharing behavior. There is no evidence found in the literature related to this relationship. According to my result, there is significant mediation of perceived behavioral control between attitudes towards knowledge sharing and knowledge sharing behavior. If employees perceived that they could develop relationships with their peers to share their knowledge, then their attitude towards knowledge sharing became positive and their perceived behavior directly effects on their performances. So, H9 is fully supported.

**Implications for the study**

Knowledge can share in every firm at any work because it is necessary for the survival of the other person and a positive environment maintained. Where Questionnaire was distributed among the individuals of the different age group and experience with respect to gain the distinctiveness. The problem encourages this research is the basic thing to understand each factor in which many problems faced by the auditors in Pakistan which affect their knowledge-sharing problem. The considerable studies that show the relationship between the attitude, subjective norms and the controlled behavior with the knowledge sharing behavior.

**Future directions and Limitations**

In this study, the data is only collected from one sector of Pakistan. In future studies data can be collected from other sectors too. This study is conducted only in Lahore, in future this study can also be replicated in other cities too to increase its generalizability.

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# Financial management challenges facing south african small business and informal retailer's in the township retailing environment

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**Keywords**
small business retailers, small business challenges, small business entrepreneurs, South African national traders

**Abstract**

*South African townships have a vibrant small business retailing sector which at some point was dominated by South African local traders. However, in recent times, the country has attracted foreign nationals who now trade in the South African townships. Some foreign nationals have done well in the small business retailing market to the detriment of the South African local small business retail entrepreneurs. The focus of this paper will be to identify what is causing foreign traders to outperform local traders.*

*The aim of this study is to understand the critical challenges (financial management & control factors) facing local traders in the township retailing environments. Primary research was conducted in two of Cape Town's townships, Delft and Eindhoven. A sample size of 55 local participants and 75 foreign participants was used in this study. The methodology used on this study is a quantitative research methodology, using a structured questionnaire as a research instrument and statistical analysis to analyse data.*

*The study found that most South African small business traders lack financial acumen to manage small business retail stores. Furthermore, the study revealed that most of local small business retailers have never had a business finance mentor in their entire trading life. The problem facing local traders is their retail financial illiteracy which manifests itself in their lack of understanding on the impact of financial decisions in their businesses.*

*It is recommended that the South African government, through its wholesale and retail training sector agency establish a targeted retail finance training and development programme to train local retailers on various aspects of small business retailing. There is also a need for a targeted funding model for potential and current local small business retailers which must be developed by the small business finance agencies in South Africa.*

## 1. Introduction

The informal sector entrepreneurs in South Africa have limited ability to generate income due to their low business skills and low capitalisation of start-up and this reduces small business entrepreneurs to permanent survivalist business owners (Rolfe, Woodward, Ligthelm & Guimarães, 2010). Start-up capital is very fundamental in the development of the micro-enterprise sector in South Africa and in the other economies of the world. Without start-up capital small business enterprise new entrants are impeded to pursue businesses to their full potential (Rolfe et al., 2010). Rolfe et al. (2010:8) further noted that "While many of these businesses remain small, with only a few employees, they nevertheless provide a standard of living above the subsistence level".

According to Fotoki (2014: 923) "In countries ranking high in the Global Entrepreneurship Monitor (GEM) analysis, entrepreneurship and new SME creation is an integral and accepted feature of economic and personal life". Entrepreneurs in developed countries are motivated by opportunities while entrepreneurs in developing countries are motivated by necessity (Ligthelm, 2004). Preisendörfer, Bitz and Bezuidenhout (2012) also argues that the vast majority of informal entrepreneurs in South Africa are necessity driven with limited financial resources. South Africa's financial systems also do not appear to be adequate to support local entrepreneurs. However, internationally entrepreneurs have financial support, and they also have ability to use their own savings something that is lacking with South African entrepreneurs (Ligthelm, 2004).

The aim of this paper is to understand the challenges (financial management factors) facing South African small business retailers in township retailing environments. To explore this, we examine financial management & control factors of South African small business retailers in two specific townships in Cape Town; Delft and Eindhoven.

## 2. Literature Review

### 2.1 Entrepreneurship and Entrepreneurial Culture in South Africa

According to Ligthelm (2010: 150) "entrepreneurship in its strongest and purest form is at the level of small and medium-sized enterprises, where individualism, self-reliance and risk-taking are particularly prominent". Entrepreneurs with specific industry experience and those post matric education have likelihood of success compared to those who lack industry specific experience or post matric education (Preisendörfer and Bitz, 2012). The survival prospects of formal and informal of start-up entrepreneurs do not differ significantly in South Africa and when it comes to job creation formal start-ups are the ones that are likely to create more jobs (Preisendörfer, Bitz and Bezuidenhout, 2012). Choto, Tengeh & Iwu (2014: 99) observed that "contrary to the popular view that survivalist entrepreneurs venture into businesses primarily to obtain self-employment and sustain family needs". Even though South Africa grapples with the issue of unemployment (which affect mainly the youth) there is a need for the country to invest in entrepreneurial youth development programme (Gwija, Eresia-Eke, Iwu, 2014). The businesses that these entrepreneurs run in the townships have a role to play in the economy of South Africa even though they are small they create jobs in the long run (Preisendörfer, Bitz and Bezuidenhout, 2012).

The South African government has major role to play in creating entrepreneurial culture in the country (Gwija *et al*., 2014). The government can do that by easing the financial implications of registering small business or star-ups as this could encourage more people such as South African youth to execute their entrepreneurial aspirations and contribute meaningfully in the economy of this country (Gwija *et al*., 2014). Young entrepreneurs in South Africa should be exposed to seasoned entrepreneurs through learnership opportunities, in-service training and even voluntarily service opportunities (Gwija *et al,* 2014).

Urban (2008: 175) suggests that "the effect of cultural values can also be seen in a broader sense; if a society does not provide sufficient jobs for certain ethnic groups, for example immigrants, those ethnic groups that are higher in individualistic values will be more prone to find their venture". In South Africa the typical South African entrepreneur is male, 25 – 44 years of age, lives in an urban area, is involved in the retail and wholesale sector and has a secondary or tertiary level of education (GEM).

### 2.2 Entrepreneurial Challenges in Informal Business Environments

Even though entrepreneurs struggle with external factors in their entrepreneurial endeavours, such as competition and rising costs of doing business in the small business micro-enterprise sector, they need to take ownership of their own development (Fatoki, 2014). Entrepreneurs need to be clear on training needs and developments needs and state clearly the pedagogy they wish training providers should use as a tool for learning (Fatoki, 2014). Small business enterprise entrepreneurs also need to have a positive mind set toward training and development (Fatoki, 2014). Economic challenges for small business entrepreneurs in the informal sector in South Africa affect both local African small business retailers and migrant retailers (Crush, Skinner and Chikanda, 2015). These retailers both lack access to debt finance but for different reasons (Crush *et al*., 2015). For the migrant retailers, the reasons relate to being labelled a foreigner (at times an asylum seeker) and for the South African retailer the reasons relate to lack of audited financial and banking records for the small business (Crush *et al*., 2015). However, even though these retailers both face economic challenges, the migrant retailers seem to thrive compared to their South African counterparts (Crush *et al*., 2015).

South African small business retailers need to understand that businesses are built around relationship's, something which migrant retailers have mastered (Xesha, Iwu and Slabbert, 2014). When you manage a small business as an entrepreneur you require interpersonal skills which means an ability to understand other business owners and being able to communicate with your customers (Xesha *et al*., 2014). Furthermore, Döckel and Ligthelm (2005: 61) noted that "successful businesses show a positive correlation between business management skills and entrepreneurial conduct". Small business retailers in township environments require market orientation towards their customers and competitors (Affendy et al., 2015). Affendy et al. (2015: 8) observed that "it is important for small business owners to serve

customers where they have competitive advantage and also attend regularly to customer complaints". Olawale and Garwe (2010:736) further noted that "Good customer care and efficient service are the hallmark of customer retention. Pricing decisions have to be considered carefully in order to beat competition as well as achieve lucrative profit margins".

Informal retailing businesses in township environments create foundation for growth into small and medium size businesses in the formal retailing sector (Ligthelm, 2004). The entrepreneurial drive of informal business owners allows them to gradually transform their informal business into more formal business structures (Ligthelm, 2004). However, growth of the small business in township retailing environments is intertwined to the size of the market for the sector. Access to a larger market has a likelihood of positively impacting the growth of small businesses (McGaffin, Napier and Karuri-Sebina, 2015). McGaffin et al. (2015: 40) further noted that "Improving the operations and environments of township enterprises must be based on a systemic understanding of how and where these enterprises operate that considers: the quality of life, social capital, knowledge inputs, financing, suppliers, markets, infrastructure, business management skills, availability of specialised services, industry support and government policies".

Ligthelm (2004: 50) observed that "In operating their businesses, informal retailers encounter serious problems that impact negatively on their profitability. These problems range from market realities, such as severe competition among informal retailers to a hostile external environment". These informal retailers require training that is aimed at their needs not generic training that is meant for corporate employees (Olawale and Garwe, 2010). Entrepreneurial trainers and coaches must also be well-trained and be experiences in entrepreneurial thought and development and must make use of technology to advance the entrepreneurial thinking of small business retailers (Olawale and Garwe, 2010:736). Entrepreneurs require training in various aspects of running a business however "financial literacy" is one most critical aspect that entrepreneurs need to have full understanding (Eresia-Eke, 2013). It is through financial literacy that businesses are able have management and financial accounts statements just so that one can be able measure the accurate growth of the business. According to Ishiguro (2015: 56) "effective entrepreneurship education programs should encourage students to explore creative opportunities, to make the idea become a reality, and to receive practical training on the created idea".

Entrepreneurs, even though they need training, but they must also be prepared invest their own financial and human resources in the business they intend to start (Frid, Wyman and Gartner, 2015). Frid, Wyman and Gartner (2015: 11) observed that "if an entrepreneur is not willing to invest in their own new venture, then external investors are less likely to put their hard cash earned into it". Also, according to Frid, Wyman and Gartner (2015: 11) "successful nascent entrepreneurs invest double the amount of personal funds into their efforts compared to nascent entrepreneurs who quit, and the proportion of household income they invest is four times greater". There is undoubtedly a direct positive correlation between investing personal funds in the start-up of a small business and the success of that business as those entrepreneurs who invest personal funds have a higher chance of success compared to those who quit the entrepreneurial process (Frid, Wyman and Gartner, 2015). Financing your own small business venture is a difficult process especially for the poor or those classified as previously disadvantaged in South Africa because these groups of people are financially constrained (Frid, Wyman and Gartner, 2015). However, research has shown that the amount of funds you invest in your own venture tend to lead to success and also attract external investors and partners (Frid *et al.,* 2015). Entrepreneurs are not a homogeneous group they are diverse in their skills and purpose however they all recognise opportunities and are willing to take risks exploiting those opportunities (Osiri, and McCarty, Davis and Osiri, 2015). Osiri et al. (2015: 10) further noted that "entrepreneurship can occur in a variety of methods, such as launching new ventures, developing new products and/or services, or expanding existing operations".

**2.3 Access to Credit as a Challenge for Entrepreneurs**

Investing in youth entrepreneurship in South Africa requires a parallel process of developing a micro-finance sector targeted at small business development and start-ups (Murisa and Chikweche, 2013). It is when a country has a vibrant developmental microfinance sector that it can boost its entrepreneurial culture and possibly make a contribution towards reducing poverty through entrepreneurial endeavours (Murisa and Chikweche, 2013). Murisa and Chikweche (2013: 23) further noted that "a thriving micro-finance sector, governments have proved to be a substantial source of funding, possibly at levels equal to

or, in some cases, much higher than funding from investors and philanthropists from developed countries". Venture Capital firms require preparedness form entrepreneurs who require funding as that preparedness separates those entrepreneurs with good business plans that are fundable from those that are not. That preparedness includes passion for the business that the entrepreneur is raising funds for and understanding of the market the entrepreneur wishes to enter (Chen, Yao and Kotha, 2009). However, entrepreneurs are also judged on business experience, motives and character when Venture Capital firms are looking at funding the entrepreneur's business (Hmieleski and Baron, 2009: 485). This also means that even if the South African government is looking at implementing developmental funding programmes for entrepreneurs in the retail sector there has to be a criterion developed and used to asses' entrepreneurs.

According to Ayandibu and Houghton (2017), starting a small business in a city requires a large sum of money which more often than not the entrepreneurs who are starting the business do not have to enable a start-up. Furthermore, the authors noted that entrepreneurs are therefore forces to look for markets outside the city where barriers to entry are low, however, operating outside the city comes with huge cost implications in the form of transportation of goods. The authors further noted that most potential entrepreneurs are people who struggle to make a living and see entrepreneurship as a gateway from poverty to a better life. However, due to financial constraints these potential entrepreneurs have no chances of accessing credit from the big banks as they do not have any forms of collateral required by the banks or other formal lenders (Ayandibu and Houghton, 2017).

Entrepreneurs who are already in business struggle with financial resources that will allow them to expand their existing businesses (Ayandibu and Houghton, 2017), furthermore, the authors noted that while the South African government (through department of Trade and Industry) has small business financial agencies such as Small Enterprise Development Agency (SEDA), National Empowerment Fund (NEF) and Small Enterprise Finance Agency (SEFA). These agencies also have requirements which entrepreneurs cannot fulfil and in the case of potential entrepreneurs they are even unable to access the information about these agencies and when they do, the information is too complex for their understanding given their low education standards.

The South African Small business market is much diversified as it operates in different industries including the small business retailing sector which is the focus of this paper. However, the small enterprise finance agencies offer credit as if they are dealing with a homogeneous group of entrepreneurs and industries. The credit terms offered to small business retailers cannot be the same as the terms given to small scale famer. Ayandibu and Houghton, (2017) noted that South African small business owners also face challenges that affect their growth and survival just like their counterparts in other African developing countries. The South African market also face a unique challenge in that it has a large number of populations living in the rural areas where access to technology is a challenge. That means that a potential entrepreneur in the village is even more disadvantaged that the one in the city and this is where government support is required in creating ease of access to technology and electricity.

**3. Research Methods and Analysis**

This study identified a gap in the literature and evaluated the South African local small business retailers understanding of financial management control factors in the small business informal retailing sector. As a result, two research questions were developed:

What is the South African small business retailers understanding of financial management factors in small business retailing?

How can the South African small business retailers improve their understanding of financial management and control factors to succeed in small business retailing?

Location of the study: The two specific townships in Cape Town, Delft and Eindhoven were selected as the setting for this study.

The population of this study: The population of this study comprised of all the South African small business retailers trading in Delft and Eindhoven.

The sample of the study: The sample of the study comprised of 55 South African small business retailers and 75 foreign small business traders, obtained using simple random sampling technique. This sample size was targeted based on suggestions Sekeran and Bougi (2003).

Research Instrument: The research instrument used to collect the quantitative data was a closed-end questionnaire.

### 3. 1. Data Analysis

In this study, quantitative data was collected and analysed using SPSS. Descriptive statistical analysis was used to present the results of the study and descriptive statistics assist in the summary and interpretation of data to reach the findings (de Vos et al., 2015:251). The findings are of value to researchers only if the information can be interpreted and used effectively (Wenger, 2007).

### 3.3 Validity and Reliability

Validity and reliability strategies used for this study included an applied sampling processes, reports on the number of respondents and non-respondents, descriptive analysis of all data, and reports on statistical significance testing (Creswell, 2015). For this study a sampling frame has been carefully chosen and representative sample selected to make sure that the study is valid, reliable and generalisable.

### 3.4 Ethical Considerations

In this study, the researcher applied for and was granted ethical clearance from the UKZN research office. The researcher issued consent forms to each and every respondent. The university code of ethics covers matters relating to confidentiality, anonymity, and the ability of the respondents to withdraw at any time during the study without any negative implications. These were strictly adhered to within this study.

## 4. Findings & Results

The township environments represent the informal economy of South Africa and when the foreign nationals began to trade in the township environments, they eroded the market that was previously exclusive to South Africans. The study focused on the financial management & control challenges affecting South African local small business retail entrepreneurs as this is area is very important in the success of any business. Among these factors were funding models of new stores (new entrants), banking, monthly turnovers and budget systems, financial advisory and financial literacy.

Table 4.1 Depicting How Local Trader Funded Their Start-up Business.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Bank Loan | 4 | 7.3 | 7.3 | 7.3 |
| | Other – Family & Rentals | 6 | 10.9 | 10.9 | 18.2 |
| | Own Funds | 45 | 81.8 | 81.8 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.1 above indicates that 81.8% of South African small business retailers mostly use their own funds to start a small retail business while very few (7.3%) use bank loans to start a business. Funding is viewed as a stumbling block for start-ups in small businesses. Potential new entrants might be discouraged to start a small business retail due to lack of funding options. In South Africa, banks usually ask for collateral and a business plan with financial projections for any business loans and locals South African small business retailers have lower level education and therefore unable to produce any business plans let alone produce collateral.

Table 4.2 Depicting Whether Traders Rent or Own Their Business Premises.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Neither | 2 | 3.6 | 3.6 | 3.6 |
| | Own | 34 | 61.8 | 61.8 | 65.5 |
| | Rent | 19 | 34.5 | 34.5 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.2 above, indicates that the majority, 61.8%, of local South African small business retailers own their stores. This means that they do not pay rental which is usually paid by those store owners who rent their business premises. So, the local traders have some form of advantage when it comes to rental as the majority own their stores.

Table 4.3 Depicting the Bank used by the Local Trader.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | ABSA | 5 | 9.1 | 9.1 | 9.1 |
| | CAPITEC | 15 | 27.3 | 27.3 | 36.4 |
| | FNB | 3 | 5.5 | 5.5 | 41.9 |

| | | | | | |
|---|---|---|---|---|---|
| | NEDBANK | 7 | 12.7 | 12.7 | 54.6 |
| | NOT BANK | 20 | 36.3 | 36.3 | 90.9 |
| | 3 / POST OFFICE | 1 | 1.8 | 1.8 | 92.7 |
| | ANDARD BANK | 4 | 7.3 | 7.3 | 100.0 |
| | | 55 | 00.0 | 100.0 | |

Table 4.3 indicates that the majority, 36.3%, of local South African small business retailers do use any form of banking for their businesses. This is a lost revenue for South African economy as banking requires formalisation of the ownership of the small businesses. The table also shows that among those small business retailers who use a bank, the majority at 27.3%, prefer to use Capitec bank. In South Africa Capitec is a bank that has the lower income earners as its target market with very low banking fees.

Table 4.4 Depicting the Local Trader's Business Monthly Turnover.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Less than R20 000 | 53 | 96.4 | 96.4 | 96.4 |
| | R20 000 - R30 000 | 1 | 1.8 | 1.8 | 98.2 |
| | R40 000 - R60 000 | 1 | 1.8 | 1.8 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.4 above, indicates that the majority, 96.4%, of local South African small business retailers have a monthly turnover of less than R20 000. This means that even if these small businesses were to be formalised, they will be exempted from paying any taxes as they are below the South African tax threshold for small businesses. Monthly turnovers are used in South Africa to classify businesses and this study reveals that township traders fall under the small business category.

Table 4.5 Depicting the Number of Times the Local Trader does Budgets for their Business.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Daily | 4 | 7.3 | 7.3 | 7.3 |
| | Weekly | 1 | 1.8 | 1.8 | 9.1 |
| | Monthly | 38 | 69.1 | 69.1 | 78.2 |
| | Quarterly | 3 | 5.5 | 5.5 | 83.7 |
| | Annually | 6 | 10.9 | 10.9 | 94.6 |
| | Don't Budget | 3 | 5.4 | 5.4 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.5 above indicates that the majority, 69.1%, of South African small business retailers do budgets on a monthly basis. There are very few, 5.4%, small business retailers who do not do budgeting at all for their small businesses. Budgeting should be the primary focus of managing the finances of the business in order to also project growth target. Small businesses in retailing requires a daily assessment of budget since they are likely to be doing daily and weekly orders.

Table 4.6 Depicting if the Local Trader has a Financial Advisor in their Business.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | No | 49 | 89.1 | 89.1 | 89.1 |
| | Yes | 6 | 10.9 | 10.9 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.6 indicates that the majority, 89.1%, of small business retailers do not have a financial mentor or advisor to advise them on their business and finances. Business financing requires special skill and formal business have highly qualified accountants to help manage the finances of the business. However small business cannot afford to pay for outsourced financial management.

Table 4.7 Depicting if the Local Trader has ever Received Business or Retail Finance Training.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | No | 51 | 92.7 | 92.7 | 92.7 |
| | Yes | 4 | 7.3 | 7.3 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.7 indicates that the majority, 92.7%, of local South African small business retailers have never been trained on financial management for business. This is an area that would require urgent attention for traders because when business owners have not been trained on financial management then they make use of an external financial management consultant, which small business retailers cannot afford. Financial management and control are key aspect of managing any business, however, big businesses have the benefit of hiring the financial skill through the use of audit and finance advisory firms while small business owners need to acquire the skills for themselves. Charman, Petersen and Piper (2012: 50) further observed that, "the informal economy in developing countries such as South Africa provides an entry point for persons otherwise excluded from the formal labour market due to a lack of education and skills to pursue business opportunities or gain employment".

Table 4.8 Depicting Is Local Trader Offers Credit Sales to Their Customers.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | No | 38 | 69.1 | 69.1 | 69.1 |
| | Yes | 17 | 30.9 | 30.9 | 100.0 |
| | Total | 55 | 100.0 | 100.0 | |

Table 4.8 indicates that the majority, 69.1%, of local South African small business retailers do not offer any form of credit to their consumers. Credit can either help the traders to sell more to their consumers, but it can also destroy the business when the credit is not paid by the consumer. Therefore, if credit is provided by small businesses it needs to be managed very carefully.

## 5. Discussion and Conclusion

This study focused on the financial management and control measures employed by the local South African small business retailers in their township retailing businesses. Although the results cannot be generalised for all South African townships, the data in the two townships provides an insight into the retail financial management understanding by local South African small business retailers.

The study has found these small business retailers are lacking in their understating of financial management control measures used by small businesses. The major problem facing local traders is their retail financial illiteracy which manifests itself in their lack of understanding on the impact of financial decisions in their businesses. It is recommended that the South African government, through its ministry of Small Business Development, assist with developing a strong business forum for South African small business retailers. The forum should assist in building strong business networks amongst local small business retailers. The forum should among other things develop a fund targeted specifically to assisting local traders with their funding and financial training needs. The researcher is aware that their small business funding agencies such as Small Enterprise Finance Agency (SEFA) but these are not specifically earmarked for small business retailers in township environments.

The study can conclude that the South African small business retailers have some level of understating of financial management and control factors in small business retailing. This understanding can be improved through a targeted retail financial training and development of these traders. In most developed economies there is a clear support for small business development unlike the developing economies where policies regulating small business development are not well-developed (Webb, Ireland, and Ketchen, Jr, 2014). However, informal sectors differ across developing and developed economies.

The study recommends a targeted funding model for potential and current local small business retailers which must be developed by the small business finance agencies in South Africa as these retailers face unique challenges. The current funding models but small business start-ups and expansion do not take into cognisance these unique small business retail sector challenges such as facing stiff completion from migrant small business retailers.

It is also recommended that the South African government, through its wholesale and retail training sector agency (W&R Seta) establish a targeted retail finance training and development programme to train local retailers on among other things budgeting skills, cash flow management, stock management and rotation. Retail financial literacy is the biggest part of running a small business in the retailing sector and local traders need a thorough training on it.

## 6. Limitations and Direction for Future Research

The study was conducted in only two township of a huge metropolitan area and it does not represent all the township in the metropolitan area or South Africa. There other elements of this study that will have to be considered if this study was to be applied throughout all the metropolitan's townships.

While the primary objective of this study was achieved but a study for other sectors in the small business sector in South Africa should be conducted in order to have policy recommendations that are sector specific. Small business sector should not be treated as a homogeneous group.

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# On the policy orientation of CPEC in Pakistan: A cynical view

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**Keywords**
CPEC, Trade, Special Economic Zone, Industrial Policy

**Abstract**

*China Pakistan Economic Corridor (CPEC) is framed as a 'Game Changer' in Pakistan. There is no denial on the value of opportunities provided by CPEC, but local government has failed to develop and disseminate relevant policies for different sectors of economy. There is a general stress on propagation of special economic zones, interregional trade, power generation, infrastructure development, and Gwader port; while policies relating to important sector like cargo and transportation, automobiles, housing, banking, shipping, and other relevant industries have not surfaced yet. Most importantly, there is no plan on vocational and technical training of local human resource to meet future demand in industries to be set up in special economic zones. This study provides a documentary analysis of the news coverage and official research reports on the CPEC and argues that although CPEC boasts infrastructural developments in Pakistan, playing blind to the industry level reforms, initiatives, and policies could result in many lost opportunities for Pakistan.*

# Corruption as a determinant of Foreign Direct Investment: The case of India

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**Keywords**
Foreign direct investment, Corruption, Economic growth

**Abstract**

*Foreign direct investment (FDI) has become an important factor of development in emerging economies. The surge in FDI flows during the 1990s has motivated recent studies into their determinants. The level of corruption in the host country has been introduced as one of the main determinants of FDI inflows in host country from the theoretical and empirical studies. Theoretically, corruption can have both positive and negative effects on FDI. Some empirical studies provided evidence of a negative link between corruption and FDI inflows, while others failed to find such a relationship and few studies found possible positive effects of corruption on FDI inflows. The present study aimed to investigate the impact of corruption on FDI inflows in India.*

*A qualitative case study was conducted, and data collected from interviews held with five businesses and four experts. The foreign companies included in our study had wholly owned or joint venture modes of entry.*

*Our study found that corruption negatively impacts FDI inflows in India, and thus the economic growth of the country. Despite the high levels of corruption, we found that India still attracted FDI inflows, mainly due to low cost and availability of skilled labor. Interviewers suggested effective anti-corruption strategies to be implemented to avoid the expansion of corruption and to further attract FDI inflows in the country. Our results confirming corruption as a determinant of FDI in India should be considered by policymakers in devising pro-FDI strategies.*

# Trade and investment prospects between Palestine and BRIC Countries (1996 – 2017)

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**Key Words**
Palestine, BRIC, Exports, Imports and Investment.

**Abstract**

*The study aims to explore the trade and investment prospects between Palestine and BRIC countries particularly Brazil, India and China, in order to stimulate demand and to boost growth in the Palestinian economy. Russia and South Africa are excluded because of their insignificant trade with Palestine. Descriptive statistics and time series model found an increasingly important trade growth between Palestine and BRIC throughout the study period, particularly with China and India. Forecasts results indicate that there is an increasing linear trend for Palestinian imports from the BRIC countries. More business and investment prospects can be achieved in different economic sectors.*

## Introduction

Palestine is an uprising economy with stable annual GDP growth rates, showing an excellent investment environment and huge potential for further growth in many sectors; Palestinian businesses have a reputation for their professionalism as well as the quality of their products. Large Palestinian enterprises are connected, with partnerships extending to Asia, Europe, the Gulf and the Americas. Due to the small size of the local market, access to foreign markets through trade is essential for private sector growth. However, Israeli restrictions on cross-border movements will remain in place, hampering exports and capital goods imports, (Hong Kong Trade Development Council, 2019). In recent years, the Palestinian economy experienced further relative recovery; a combination of political and economic conditions promoted growth, mainly a stable economic situation and regular domestic and clearing revenues, a regulated financial situation, some recovery in economic activity, improvement in aggregate demand, and the ongoing gradual restoration of the Gaza's production base, devastated by the Israeli war in the summer of 2014. Such conditions have boosted production and the growth rate. In the Gaza Strip, growth increased by 7.7 percent compared to 6.1 percent the previous year, mainly supported by an increased investment, while in the West Bank, economic activity expanded a little. Growth rate reached 3.0 percent in 2016 compared to 2.6 percent in 2015, (PMA, December 2017).

The Palestinian economy is small and relatively open. As Table (1) shows, the value of imports was $2,016 Billion standing at 36.77 percent of 1996 GDP, while the total imports increased to $ 5,854 Billion, at a rate of 42.77 percent of 2017 GDP. On the other hand, the Palestinian economy's exports of goods and non-factor services as a share of GDP are less than half those of a comparable group of countries, the value of exports was $ 340 million and just 6.19 percent to 1996 GDP, Exports increased to $ 1,065 Billion and close to 7.78 percent to 2017 GDP. Export performance has deteriorated over the years since Oslo agreement (signed between Israel Occupation and Palestinian Liberation Organization in 1994). In 2017, Palestine trade deficit was $ 4,789 billion of which $516,045 million with BRIC countries.

A companion World Bank report suggests that the removal of restrictions, including improved access to all of the Palestinian economy's natural resources (Area C), could triple the economy's growth rate to 2025, to growth rates in the 8-10% range, and vastly reduce unemployment. Such growth rates would enable the Palestinian economy to roughly double in size between 2017 and 2025. As for Gaza, lifting the blockade would open it up for critical trade needed to rebuild its infrastructure and economy, and could lead to additional cumulative growth in the range of 32 percent by 2025.

Table (1): Merchandaise Export and Import, percentage to GDP, 1996-2017 (thousands US$)

| Year | Exports | Imports | BT | %Exp/Imp | %Exp/GDP | %Imp/GDP | GDP |
|---|---|---|---|---|---|---|---|
| 1996 | 339,467 | 2,016,056 | -1,676,589 | 16.84 | 6.19 | 36.77 | 5,483,540 |
| 1997 | 382,423 | 2,238,561 | -1,856,138 | 17.08 | 6.08 | 35.60 | 6,287,823 |
| 1998 | 394,846 | 2,375,102 | -1,980,256 | 16.62 | 5.49 | 33.04 | 7,189,132 |
| 1999 | 372,148 | 3,007,227 | -2,635,080 | 12.38 | 4.78 | 38.63 | 7,784,423 |
| 2000 | 400,857 | 2,382,807 | -1,981,949 | 16.82 | 5.63 | 33.47 | 7,118,374 |
| 2001 | 290,349 | 2,033,647 | -1,743,298 | 14.28 | 4.50 | 31.50 | 6,455,607 |
| 2002 | 240,867 | 1,515,608 | -1,274,741 | 15.89 | 4.26 | 26.83 | 5,649,354 |
| 2003 | 279,680 | 1,800,268 | -1,520,588 | 15.54 | 4.34 | 27.95 | 6,441,160 |
| 2004 | 312,688 | 2,373,248 | -2,060,560 | 13.18 | 4.40 | 33.39 | 7,107,374 |
| 2005 | 335,443 | 2,667,592 | -2,332,149 | 12.57 | 4.26 | 33.87 | 7,874,882 |
| 2006 | 366,709 | 2,758,726 | -2,392,017 | 13.29 | 4.85 | 36.45 | 7,567,715 |
| 2007 | 512,979 | 3,284,035 | -2,771,056 | 15.62 | 6.36 | 40.71 | 8,066,472 |
| 2008 | 558,446 | 3,466,168 | -2,907,722 | 16.11 | 6.53 | 40.51 | 8,556,857 |
| 2009 | 518,355 | 3,600,785 | -3,082,430 | 14.4 | 5.57 | 38.73 | 9,298,097 |
| 2010 | 575,513 | 3,958,512 | -3,382,999 | 14.54 | 5.73 | 39.38 | 10,051,159 |
| 2011 | 745,661 | 4,373,647 | -3,627,986 | 17.05 | 6.60 | 38.71 | 11,298,873 |
| 2012 | 782,369 | 4,697,356 | -3,914,987 | 16.66 | 6.51 | 39.12 | 12,008,921 |
| 2013 | 900,618 | 5,163,897 | -4,263,280 | 17.44 | 7.34 | 42.07 | 12,275,209 |
| 2014 | 943,717 | 5,683,199 | -4,739,482 | 16.61 | 7.70 | 46.38 | 12,252,882 |
| 2015 | 957,811 | 5,225,467 | -4,267,656 | 18.33 | 7.56 | 41.23 | 12,673,000 |
| 2016 | 926,499 | 5,363,768 | -4,437,269 | 17.27 | 6.98 | 40.42 | 13,269,700 |
| 2017 | 1,064,884 | 5,853,850 | -4,788,966 | 18.19 | 7.78 | 42.77 | 13,686.400 |

Source: PCBS, various issues.

Percentages calculated by researcher.

The Palestinian economy's small and trade-reliant economy is falling behind that of its regional peers. Table (2) clearly shows that, Israel is the main source of Palestine imports; Israel share has declined from 86.46 percent in 1996 to 55.25 percent in 2017, trade deficit with Israel reached $ 2,356 Billion. The second source of imports in 2017 is the group of Asian countries with 20.75 percent, China dominate the group of Asian countries; the third group is the European countries. In the export side, Israel remains the main direction, with 94.04 percent in 1996 and 82.50 percent in 2017.

Elnamrouty (2017) found that the low share of Palestine exports to the rest of the world is due to the different processes imposed by the Israeli occupation on the movement of goods from the exporter's location (West Bank and Gaza Strip) to the target market. Such restrictions on movement also involve significant financial costs as well as costs associated with imperfect information, weak infrastructure, lengthy and uncertain delivery times.

Table (2): Palestine Direction of Exports and Source Imports (Thousands of US$)

| Country Group | Year | 1996 | 2000 | 2005 | 2010 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|
| Israel | M | 1,743,190 | 1,739,541 | 1,873,700 | 2,873,343 | 3,958,259 | 3,044,627 | 3,123,190 | 3,234,784 |
| | X | 319,247 | 369,680 | 290,558 | 488,396 | 791,540 | 803,626 | 770,812 | 878,617 |
| Arab Countries | M | 26,551 | 39,668 | 69,001 | 129,817 | 274,375 | 343,209 | 320,050 | 358,340 |
| | X | 19,054 | 29,122 | 25,855 | 65,898 | 112,610 | 121,105 | 119,032 | 141,439 |
| European Countries | M | 146,987 | 263,605 | 283,183 | 367,477 | 581,191 | 724,021 | 760,125 | 914,772 |
| | X | 244 | 1,675 | 11,644 | 9,865 | 21,253 | 16,473 | 18,777 | 18,115 |
| Asian Countries | M | 52,898 | 218,780 | 376,620 | 458,266 | 754,505 | 977,417 | 1,033,174 | 1,214,635 |
| | X | 107 | 309 | 2,002 | 1,227 | 4,492 | 5,111 | 5,949 | 11,320 |
| American Countries | M | 28,876 | 66,967 | 51,148 | 67,120 | 94,786 | 114,998 | 108,026 | 111,955 |
| | X | 815 | 71 | 4,321 | 9,508 | 13,115 | 11,281 | 11,521 | 14,950 |
| Rest of the World | M | 17,759 | 54,246 | 13,940 | 62,489 | 20,083 | 21,194 | 19,202 | 19,364 |
| | X | 0 | | 1,063 | 619 | 707 | 215 | 408 | 443 |
| Total | M | 2,016,261 | 2,382,807 | 2,667,592 | 3,958,512 | 5,683,199 | 5,225,466 | 5,363,767 | 5,853850 |
| | X | 339,467 | 400,857 | 335,443 | 575,513 | 943,717 | 957,811 | 926,499 | 1,064,884 |

*Source: PCBS various issues.*

**Literature Review**

Palestine Trade Center (2010) concludes that political uncertainty and the movement and access restrictions are the main obstacles impeding investors and direct foreign investment in Palestine. Israel is intentionally feeding the investors' feeling of this uncertainty using a continuous internal and external closure regime. International Bank for Reconstruction and Development (2014) found that labor productivity of Palestinian firms is on par or nearly so with countries at a similar GDP rate. Indeed, labor productivity is higher than in Yemen, Egypt, and Tunisia in recent years. However, it is less than the best-performing comparator countries in the region, including Lebanon and Jordan. This moderate labor productivity performance seems to be the result of firms with relatively low capital investments in low productivity sub-sectors at a relatively high technical efficiency. While low capital intensity may be attributed to the uncertainty in the investment climate. Palestine Trade Center (2014) found that Palestine has a skilled workforce impresses with an efficient banking system and the availability of needed infrastructure throughout all sectors and in almost the whole country. As indicated by the World Bank, the West Bank and Gaza business environment is highly favorable compared with much of the rest of the region. Shunnar (2011) showed that the Palestinian Authority is implementing an open investment policy with the goal of attracting foreign investment and re-orienting domestic savings and investment to augment Palestinian development efforts. World Bank (2017) mentioned that Israel's restrictions on the movement of people and goods, high trade logistics costs, and lack of many instruments and freedom to conduct an independent economic policy, the Palestinian economy's small and trade-reliant economy is falling behind that of its regional counterparts. Meanwhile, various estimates of the impact of easing trade and other ongoing restrictions on the normal functioning of the Palestinian economy show the potential for significantly improving economic conditions, growth, jobs and trade. International Trade Center (2015) concludes the dominance of Israel as both destination for exports and country of origin of imports calls for the diversification of Palestinian export and import markets. In 2012, out of US$ 782 million of total Palestinian exports, goods worth US$ 639 million were exports to Israel. For imports, the value of goods originating from Israel amounts to $ 3.3 billion (out of $ 4.6 billion total import value). Palestinian Federation of Industries (2009) found there are many potential opportunities and reasons to invest in the industrial sector in Palestine, the most prominent reasons are the abundant human resources and the absorptive capacity of the market.

**BRICS**

Previously BRIC was coined by Jim O'Neill in 2001 as an acronym of four countries that were all deemed to be at a similar stage of a newly advanced economic development. In economics, BRIC is a grouping acronym that refers to the countries of Brazil, Russia, India and China. It is typically rendered as "the BRICs" or "the BRIC countries" or "the BRIC economies" or alternatively as the "Big Four". A related acronym, BRICS, adds South Africa. There are arguments that Indonesia should be included into the grouping, effectively turning it into BRIIC or BRIICS (Wikipedia).

Although initially thought of purely in terms of the size of their economies, the members have become an important political force in the global trading system and heavily influenced the World Trade Organization (WTO), and are also known to have significant influence on regional affairs. All are also members of the G20.

The economic potential of Brazil, Russia, India and China is such that they could become among the four most dominant economies by the year 2050. The thesis was proposed by Jim O'Neill, global economist at Goldman Sachs, Financial Times, (2006). These countries encompass over 25% of the world's land coverage and 40% of the world's population and hold a combined GDP (PPP) of $20 trillion. On almost every scale, they would be the largest entity on the global stage. These four countries are among the biggest and fastest-growing emerging markets (Wikipedia).

According to Financial Advisor (August 1, 2018). The global economy is worth an estimated $79.98 trillion, according to the World Economic Forum. As the world's economies grow, however, there is expected to be a reshuffling when it comes to the largest national economies. China and India, for example, are projected to be the two largest economies by 2050. Indonesia, Russia and Mexico are predicted to climb in the rankings, passing Germany, France and the United Kingdom, the report said. Turkey and Vietnam are also viewed as fast risers.

Brazil has population of more than 207 million, in 2017, according to the estimates by the International Monetary Fund; Brazil's economy has a gross domestic product (GDP) of $2,055 Billion being ranked as the 8th largest economy in the world. It is the second largest in the American continent, only behind the United States' economy. Brazil exports $218 Billion and imports $151 Billion.

The economy of **India** is a developing mixed economy. It is the world's seventh-largest economy by nominal GDP $2,067 Billon and the third-largest by purchasing power parity (PPP). The country ranks 139th in per capita GDP (nominal) with $2,134 and 122nd in per capita GDP (PPP) with $7,783 as of 2018. After the 1991 economic liberalization, India achieved 6-7% average GDP growth annually. In 2017, India runs trade deficit $157 Billion. Since 2014 until of 2017, India's economy has been the world's fastest growing major economy, surpassing China.

The People's Republic of China is the world's second largest economy by nominal GDP and the world's largest economy by purchasing power parity. Until 2015, China was the world's fastest-growing major economy, with growth rates averaging 6% over 30 years. China's public sector accounts for a bigger share of the national economy than the burgeoning private sector. According to the IMF, on a per capita income basis China ranked 71st by GDP (nominal) and 78th by GDP (PPP) per capita in 2016. The country has an estimated $23 trillion worth of natural resources, 90% of which are coal and rare earth metals. China also has the world's largest total banking sector assets of $39.9 trillion. China is the world's largest manufacturing economy and exporter of goods, with trade surplus of $419 Billion in 2017.

**Objectives**

After 71 years of occupation, Israel continues to be the main trading partner, accounting for 82.50 percent of Palestine merchandise exports and more than 55 percent of merchandise imports in 2017. Under this context, Palestine needs to diversify trade relations with the rest of the world. Table (3) clearly shows the growing importance of trade relations between Palestine and the emerging markets (BRIC countries). In general, the study aims to achieve the following objectives:

1. To shed light on and analyze Palestine's trade volume and composition with BRIC countries.
2. To determine the most important areas of trade and investment.
3. To identify business climate and the wide range of investment opportunities in Palestine.
4. To forecast the volume of imports from BRIC for the period 2018: Q1 – 2022: Q4.
5. To identify the most significant difficulties and obstacles facing the improvement of trade and investment in Palestine.

**Methodology**

In order to study the trade relationship between Palestine and BRIC countries, the research methodology depends on the analytical descriptive and quantitative approach. The analysis of the study is based on time series secondary data; data start from the first quarter of 1996, to the fourth quarter of 2017. Data were obtained from the official publications of the Palestinian Central Bureau of Statistics (PCBS) and Palestinian Monetary Authority (PMA). The statistical analysis is performed by using E-Views statistical software program. Descriptive statistics and Time series model are conducted for Palestine imports from each BRIC country under study. Stationary assumption is achieved for the data by using Phillps-Perron unit root test. Durbin-Watson test is used to check the assumption of residuals autocorrelation.

**Volume of Trade**

In recent years, particularly after the establishment of the Palestinian Authority in 1994, Palestine foreign trade sector witnessed significant changes in the sources of imports, as mentioned above; 86.46 percent of imports comes from Israel, and this percentage dropped to 55 percent in 2017. The decline of imports from Israel is an unofficial strategy adopted by the Palestinian private sector to diversify the sources of imports to minimize the cost of doing business with Israel; the strategy benefited both European and Asian countries. Table (3) presents Palestine trade with Five BRIC countries. In 1996, only 0.62 percent of Palestine imports came from BRIC countries, increased to 8.52 percent in 2017. The main BRIC trade partners are China, India, Brazil, Russia and South Africa respectively. Russia and South Africa are excluded from this analysis because of their less significant trade importance with Palestine. Despite the high transportation and logistics costs of imports from BRIC with comparison to Israel, the value of imports from China and India has increased more than forty times and twenty-four times for

Brazil throughout the study period 1996–2017. This clearly shows the importance of future trade relationship between both groups.

Table (3): Palestine trade with BRICS 1996 – 2017 (Thousands of US$)

| Year | Brazil | | China | | South Africa | | Russian | | India | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Imp | Exp | Imp | Exp | Imp | Exp | Imp | Exp | Imp | Exp |
| 1996 | 753 | 0 | 10643 | 0 | 221 | 0 | 285 | 1 | 2661 | 0 |
| 1997 | 883 | 0 | 16183 | 0 | 593 | 0 | 1036 | 71 | 3201 | 0 |
| 1998 | 1711 | 0 | 33817 | 0 | 428 | 27 | 4701 | 0 | 7457 | 0 |
| 1999 | 2060 | 0 | 98190 | 0 | 2064 | 0 | 12279 | 0 | 14033 | 0 |
| 2000 | 3841 | 0 | 89304 | 0 | 605 | 0 | 17522 | 0 | 7686 | 463 |
| 2001 | 6707 | 0 | 45989 | 0 | 495 | 0 | 11836 | 0 | 5792 | 34 |
| 2002 | 3836 | 0 | 43969 | 0 | 212 | 0 | 3608 | 0 | 6654 | 0 |
| 2003 | 5584 | 0 | 63584 | 43 | 879 | 0 | 6715 | 2 | 7567 | 78 |
| 2004 | 8655 | 0 | 88705 | 504 | 828 | 9 | 2593 | 0 | 9612 | 20 |
| 2005 | 9213 | 0 | 110936 | 373 | 1419 | 0 | 7070 | 0 | 12375 | 83 |
| 2006 | 15063 | 0 | 114326 | 139 | 815 | 0 | 11868 | 25 | 10968 | 153 |
| 2007 | 9786 | 2 | 143835 | 113 | 425 | 0 | 7988 | 0 | 12561 | 0 |
| 2008 | 18037 | 0 | 121017 | 48 | 306 | 0 | 15559 | 0 | 11828 | 0 |
| 2009 | 15741 | 0 | 157816 | 11 | 517 | 2 | 2513 | 0 | 15113 | 0 |
| 2010 | 9179 | 204 | 181261 | 21 | 366 | 11 | 10263 | 0 | 17084 | 0 |
| 2011 | 18911 | 65 | 194127 | 0 | 315 | 0 | 8548 | 0 | 21467 | 0 |
| 2012 | 19326 | 72 | 197341 | 0 | 774 | 18 | 3963 | 0 | 22674 | 0 |
| 2013 | 20036 | 0 | 236602 | 0 | 560 | 69 | 6185 | 0 | 23507 | 0 |
| 2014 | 23438 | 142 | 281811 | 44 | 660 | 181 | 1969 | 0 | 27611 | 0 |
| 2015 | 37049 | 0 | 368037 | 1 | 320 | 0 | 3955 | 0 | 34815 | 0 |
| 2016 | 26628 | 153 | 382679 | 61 | 1586 | 0 | 7357 | 0 | 38985 | 0 |
| 2017 | 24392 | 196 | 428680 | 19 | 1880 | 0 | 15088 | 0 | 46053 | 0 |

Source: PCBS various issues.

**Descriptive Statistics**

Table (4) shows the descriptive statistics for quarterly data starts from 1996: Q1 to 2017: Q4 of the imports form three BRIC countries.

For Brazil, the imports range from 52 to 15116 (US$ thousands) with mean 3192.24 (median = 2600) and standard deviation of 2802.608.

For China, the imports range from 1079 to 113561 with mean 38736.95 (median = 31894.00) and standard deviation of 30312.406.

For India, the imports range from 170 to 14666 with mean 4087.55 (median = 3256.00) and standard deviation of 2990.372.

Table (4): Descriptive Statistics

| Statistics | Brazil | China | India |
|---|---|---|---|
| Mean | 3191.24 | 38736.95 | 4087.55 |
| Median | 2600.00* | 31894.00 | 3256.00* |
| Std. Deviation | 2802.608 | 30312.406 | 2990.372 |
| Skewness | 1.279 | 0.872 | 1.179 |
| Std. Error of Skewness | 0.257 | 0.257 | 0.257 |
| Minimum | 52 | 1079 | 170 |
| Maximum | 15116 | 113561 | 14666 |

Values are in Thousands of US$

* The median is used because the skewness is more than twice its standard error

**Stationary Condition**

Schwarz information criterion (SC) is used to determine the number of lags used in order to determine the stationary of the imports. Lag order selected by the SC for each country is shown in Table (5). Phillips-Perron Test for unit root (Stationary test) including Trend and Intercept indicates the imports variable is stationary in its level for each country.

Table (5): Stationary test

| Country | No. of lags | Trend & Intercept | Unit root test |
|---|---|---|---|
| Brazil | 1 | 0.0000 | 0.0000* |
| China | 4 | 0.0002 | 0.0158* |
| India | 4 | 0.0003 | 0.0154* |

* The stationary assumption is satisfied

**Regression Analysis**

Table (6) shows the regression coefficients, their P-values, R-Square, and DW for each country.

Durbin-Watson test is used to check if the disturbances are independent, the test statistic (DW) is scaled so that it is around 2 if no autocorrelation is present and near 0 if it is very strong.

By using Durbin-Watson table, $d_L$=1.63, $d_U$ = 1.68, since DW for each country as shown in the table is greater than $d_U$, we conclude there is no autocorrelation, i.e. disturbances are independent.

The coefficients of determination, R-Squares for each country indicate that 89.71%, 85.13%, and 68.52% of the variation in imports is explained by time index for China, India, and Brazil, respectively. The coefficient of determination is the most important criteria because the main objective of this study is to determine the forecast of the imports.

The time index variable is statistically significant for each of country since the P-value is smaller than the level of significance $\alpha = 0.01$

Table (6): Regression analysis results

| Country | Coefficient | P-value | R-Square | DW |
|---|---|---|---|---|
| China | 1085.456 | 0.0000* | 0.8971 | 2.2377 |
| India | 104.1682 | 0.0000* | 0.8513 | 2.3193 |
| Brazil | 87.93372 | 0.0000* | 0.6852 | 1.9200 |

* The variable is statistically significant at $\alpha = 0.01$

**Forecasting for imports in 2018-2022**

After the end of descriptive and quantitative analysis, we are in a position to forecast the future trade, import side between Palestine and the BRIC countries. Table (7) shows the forecasting values for each country based on the final regression model obtained in Table (6). The forecasts results indicate that, there is an increasing linear trend for Palestinian imports from the BRIC countries in the period 2018: Q1-2022: Q4.

Table (7): Forecasting values for each country results for 2018: Q1-2022: Q4 (Thousands of US$)

| Year | China | Brazil | India |
|---|---|---|---|
| 2018: Q1 | 87672.591 | 7107.301 | 8793.818 |
| 2018: Q | 88758.047 | 7195.235 | 8897.986 |
| 2018: Q3 | 89843.503 | 7283.169 | 9002.155 |
| 2018: Q4 | 90928.959 | 7371.103 | 9106.323 |
| 2019: Q1 | 92014.415 | 7459.036 | 9210.491 |
| 2019: Q2 | 93099.871 | 7546.97 | 9314.659 |
| 2019: Q3 | 94185.327 | 7634.904 | 9418.827 |
| 2019: Q4 | 95270.783 | 7722.838 | 9522.996 |
| 2020: Q1 | 96356.24 | 7810.77 | 9627.16 |
| 2020: Q2 | 97441.70 | 7898.70 | 9731.33 |
| 2020: Q3 | 98527.15 | 7986.64 | 9835.50 |
| 2020: Q4 | 99612.61 | 8074.57 | 9939.67 |
| 2021: Q1 | 100698.06 | 8162.51 | 10043.84 |
| 2021: Q2 | 101783.52 | 8250.44 | 10148.00 |
| 2021: Q3 | 102868.98 | 8338.37 | 10252.17 |
| 2021: Q4 | 103954.43 | 8426.31 | 10356.34 |
| 2022: Q1 | 105039.89 | 8514.24 | 10460.51 |
| 2022: Q2 | 106125.34 | 8602.17 | 10564.68 |
| 2022: Q3 | 107210.80 | 8690.11 | 10668.85 |

| | | | |
|---|---|---|---|
| 2022: Q4 | 108296.26 | 8778.04 | 10773.01 |

**Conclusions and Recommendations**

Table (8) Composition of Palestine Exports according to SITC sections (Thousands US$)

| SITC code | 1996 | 2005 | 2010 | 2012 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| 0 | 48,836 | 36,180 | 80,153 | 114,700 | 145,308 | 166,369 | 163,292 | 183,641 |
| 1 | 15,400 | 14,322 | 24,040 | 40,485 | 46,858 | 46,455 | 43,204 | 37,690 |
| 2 | 23,316 | 13,165 | 71,862 | 98,098 | 83,266 | 71,388 | 52,352 | 80,017 |
| 3 | 8,276 | 12,220 | 1,532 | 2,467 | 2,198 | 1,574 | 1,515 | 1,013 |
| 4 | 8,720 | 12,276 | 14,960 | 30,395 | 28,108 | 42,122 | 46,709 | 44,350 |
| 5 | 23,692 | 28,866 | 46,082 | 51,319 | 46,869 | 50,695 | 54,185 | 59,657 |
| 6 | 138,041 | 129,788 | 190,525 | 256,429 | 328,844 | 323,802 | 319,434 | 390,571 |
| 7 | 20,314 | 18,522 | 31,558 | 34,562 | 37,583 | 32,512 | 31,176 | 33,042 |
| 8 | 51,997 | 64,645 | 113,485 | 153,914 | 224,684 | 222,893 | 214,633 | 234,905 |
| 9 | 875 | 5,459 | 1,316 | 0 | | 0 | 0 | 0 |
| Total | 339,467 | 335,443 | 575,513 | 782,369 | 943,718 | 957,810 | 926,500 | 1,064,886 |

Source: Palestinian Central Bureau of Statistics

Tables (8 and 9) shows the composition of Palestine exports and imports according to SITC Sections. In the exports side, table (8) shows that, in 2017, the SITC code (6, Manufactured goods classified chiefly by material), is the main component accounting 36.68 percent of Palestine exports basket. The most important items of section (6, Manufactured goods classified chiefly by material) are articles of stone, plaster, cement, asbestos, mica or similar materials and Footwear, gaiters and the like; parts of such articles. Second; the SITC code (8, Miscellaneous manufactured articles) with 22.06 percent, most important items are Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof and Vehicles other than railway or tramway rolling stock, and parts and accessories thereof. Third; SITC code (0, Food and live animals), accounts 17.24 percent, Edible vegetables and certain roots and tubers, edible fruit and nuts; peel of citrus fruit or melons, and animal or vegetable fats and oils and their cleavage products. The three sections account for 76 percent of Palestine total exports.

Despite overall poor export performance, there have been limited but important gains in export market and product diversification. The gains in market diversification, while small, are important since they represent potential opportunities to diversify not only markets but also market channels, thereby gaining direct exposure to advanced buyers and markets. Nearly half of all exports are in limestone and agricultural produce, mostly with limited processing and low value added. Although export diversification has been limited in value, the emergence and continued growth of some high-value sectors, such as pharmaceuticals, furniture, agribusiness products, information technology (IT) services, and call centers, points to the future potential in services and some high value added industry, (World Bank, 2017)

Table (9) Composition of Palestine Imports according to SITC sections (Thousands of US$)

| SITC code | 1996 | 2005 | 2010 | 2012 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| 0 | 422,863 | 452,224 | 692,850 | 895,751 | 1,125,367 | 1,085,184 | 1,164,629 | 1,244,631 |
| 1 | 107,576 | 102,389 | 166,361 | 189,521 | 196,799 | 277,606 | 300,561 | 324,852 |
| 2 | 68,117 | 62,034 | 65,071 | 58,046 | 84,038 | 95,019 | 103,711 | 98,937 |
| 3 | 384,609 | 718,268 | 1,242,305 | 1,447,718 | 1,868,878 | 1,132,258 | 1,074,516 | 1,134,859 |
| 4 | 22,870 | 20,343 | 19,368 | 25,113 | 29,283 | 28,326 | 27,154 | 42,096 |
| 5 | 158,038 | 222,997 | 326,823 | 389,793 | 491,034 | 491,034 | 504,685 | 544,810 |
| 6 | 462,829 | 490,493 | 688,427 | 848,371 | 889,317 | 938,142 | 1,027,294 | 1,096,477 |
| 7 | 251,261 | 433,895 | 545,165 | 587,106 | 706,555 | 823,396 | 794,295 | 1,014.655 |
| 8 | 133,085 | 147,529 | 212,142 | 255,920 | 291,923 | 311,093 | 366,800 | 352,116 |
| 9 | 5,013 | 17,420 | 0 | 17 | 5 | 1 | 122 | 417 |
| Total | 2,016,261 | 2,382,807 | 2,667,592 | 3,958,512 | 5,683,199 | 5,225,466 | 5,363,767 | 5,853850 |

Source: Palestinian Central Bureau of Statistics

In the imports side as shown in table (9), shows that, in 2017, the SITC code (0; Food and live Animals), dominating the imports basket with 21.26 percent. The most important items under this section is, vegetable products, live animals and animal products, Edible fruit and nuts; peel of citrus fruit or melons, Cereals and Dairy produce; birds' eggs; natural honey; edible products of animal origin

respectively. Second; the SITC code (3, Crude materials, inedible, except fuels), with 19.38 percent. Third; the SITC code (6, Manufactured goods classified chiefly by material and SITC code 7; Machinery and transport equipment), 18.73 and 17.33 percent respectively. The most important items under the two sections are, Wood and articles of wood, Pulp of wood, plastic, textiles, machinery and mechanical appliances; electrical equipment; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles and transport equipment.

Table (10) Composition of Palestine Imports and Exports with Brics Countries by SITC Sections (Thousand US$)

| Country | SITC code | 2010 | | 2012 | | 2014 | | 2016 | | 2017 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Imp | Exp | Imp | Exp | Imp | Exp | Imp | Exp | Imp | Exp |
| Brazil | | 6,892 | - | 16,669 | 72 | 21,561 | 142 | 20,932 | 153 | 19,498 | 196 |
| | | 579 | - | 440 | - | - | - | 146 | - | 50 | - |
| | | 116 | - | 67 | - | - | - | 158 | - | - | - |
| | | - | - | - | - | - | - | 0 | - | - | - |
| | | - | - | - | - | 6 | - | 8 | - | - | - |
| | | 235 | - | 377 | - | 688 | - | 710 | - | 2,928 | - |
| | | 912 | - | 845 | - | 861 | - | 2,333 | - | 1,326 | - |
| | | 235 | 204 | 690 | - | 147 | - | 374 | - | 423 | - |
| | | 212 | - | 237 | - | 175 | - | 1,967 | - | 167 | - |
| China | | 4,552 | 5 | 7,191 | - | 8,643 | 14 | 10,027 | - | 10,115 | - |
| | | 1,206 | - | 397 | - | 67 | - | 456 | - | 831 | - |
| | | 1,400 | - | 1,400 | - | 2,067 | 1 | 4,609 | - | 2,130 | - |
| | | 14 | - | 66 | - | 2 | - | 191 | - | 106 | - |
| | | 370 | - | 74 | - | 70 | 27 | 272 | - | 520 | - |
| | | 9,558 | 3 | 11,453 | - | 16,365 | 3 | 20,014 | - | 19,630 | 9 |
| | | 65,295 | 11 | 76,133 | - | 102,759 | 0 | 138,418 | 61 | 139,630 | 10 |
| | | 37,802 | 1 | 32,992 | - | 79,343 | - | 108,415 | - | 156,511 | - |
| | | 61,066 | - | 67,635 | - | 72,494 | 0 | 100,277 | - | 99,206 | - |
| | | - | - | - | - | 1 | - | - | - | 0 | - |
| | | 4,033 | - | 6,382 | - | 10,343 | 60 | 11,513 | 83 | 15,883 | 131 |
| India | | 232 | - | 113 | - | - | - | 598 | - | 615 | - |
| | | 287 | 0 | 587 | 29 | 656 | - | 410 | - | 413 | - |
| | | 43 | - | 45 | - | 99 | - | 31 | - | 54 | - |
| | | 131 | - | 67 | 4 | 46 | 6 | 16 | - | 81 | 22 |
| | | 3,631 | - | 4,760 | - | 4,712 | - | 5,307 | - | 6,966 | - |
| | | 5,981 | - | 6,965 | - | 7,874 | 12 | 12,929 | - | 13,069 | - |
| | | 1,204 | - | 1,462 | - | 1,122 | - | 3,671 | - | 5,386 | - |
| | | 1,543 | - | 2,292 | - | 2,759 | - | 4,509 | - | 3,588 | - |

Source: Palestinian Central Bureau of Statistics.

Table (10) present Composition of Palestine Imports and Exports with Brics Countries by SITC sections. Palestine exports is highly insignificant to BRIC, this could be due to several reasons, such as,

Limited diversified export basket,

Higher production cost with comparison to labor intensive countries,

Complicated export procedures imposed by Israel and,

Higher transportation cost.

The composition of Palestine imports from BRIC countries shows that,

(0; Food and live animals) is the main imports from Brazil, the value of other imported goods is very limited.

(7; Machinery and transport equipment, 6; Manufactured goods classified chiefly by material, 8; Miscellaneous manufactured articles, 5; Chemicals and related products and 0; Food and live animals) are the main imported goods from China respectively.

(0; Food and live animals, 6; Manufactured goods classified chiefly by material, 5; Chemicals and related products) these are the main goods imported from India.

This finding indicates that, there will be strong business and investment opportunities between Palestine and the BRIC countries particularly with China and India.

Palestine enjoys numerous advantages that make it a highly interesting destination for investment. The strategic geographic location of Palestine, the presence of a skilled and young labor force, numerous free trade agreements with the main trading partners all over the world, the industrial states incentives, strongly encouraging governmental policies for trade and investment in the framework of the Palestinian Investment Promotion Law and investment guarantees and insurance from local and international institutions. It also impresses with an efficient banking system and the availability of needed infrastructure throughout all sectors and in almost the whole country. As indicated by the World Bank, the West Bank and Gaza business environment is highly favorable compared with much of the rest of the region. Palestine performed particularly well in terms of protecting investors (49th globally and 4th regionally) and paying taxes (55th globally and 10th regionally), (Palestine world trade center, 2014).

Descriptive and quantitative analysis and trade forecast proved the growing importance of trade between Palestine and BRIC countries, since the Palestinian economy has a small and trade-reliant economy, Palestine must work hard to sign free trade agreements and encourage investment with BRIC countries particularly China and India. Palestine has free trade agreements with global economic players, such as, The Interim Agreement on Trade and Cooperation with the European Union, EFTA, MERCOSUR, Morocco, Egypt, Jordan, Tunisia, Turkey, USA, Canada and other countries.

Palestine Trade Center (2014). In its report, why invest in Palestine' defined the different investment opportunities in many sectors in Palestine including the following:

Construction sector, Housing has become a growing need in the West Bank, Gaza Strip and East Jerusalem.

Developing the infrastructure in the public transportation sector and its sub-sectors.

Stone and marble products have a good potential based on its large value of exports, many existing export markets, a strong supply base and solid global demand. Palestinian stone and marble are in high demand in international markets.

Agri-Business, include olives, citrus fruits, vegetables, flowers and strawberries, and medicinal herbs, have accounted for the larger part of priority sectors in the Palestine National Export Strategy; high value added, high quality agricultural products are exported to the US, EU and Gulf markets and are gaining larger market shares on yearly bases.

Textiles and Garments: this sector largely consists of sub-contract manufacturing for international brands, with a highly skilled labor force and quality of production.

Other sectors, handicraft, paper industry, processed industry, health and financial sector, etc.

The huge Palestinian trade deficit with the rest of the world requires more action by the Palestinian Authority and international community, to force Israel to improve access to Palestinian resources and markets as well as the free movement of people to boost the growth of the economy.

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# An analysis of usage of passive materials for sustainable and innovative construction process

(*A Technique using of passive material in Chennai Residential Apartments for Sustainability and Energy Conservation*)

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**Key words**
Passive material, passive design, energy consumption, carbon reduction, carbon emission, tropical climate.

**Abstract**

*This paper discusses the importance and approaches of thermal control, carbon emission and carbon reduction in Chennai city at various positions with regard to orientation of high-rise structure. This case study tries to distinguish the relationship between real energy use information and housing design data by changing the passive materials. A number of apartments were randomly chosen as a sample building for the study, which introduces a method to use substantial energy consumption information to estimate the additional energy use related to climatic factors. The factors governing the building temperature and discuss about the Power usage, Carbon emission factor, Carbon footprints, Carbon reduction from the old and new residential houses. This report is almost a case study of Chennai where current construction practices as a normal brick's concrete way of building. In this research suggesting that with certain changes of using passive materials like prefabricated concrete wall, e glass and insular tiles, etc., that owner will be capable to recoup the increased investment within a decade via reduced energy bills with the added benefit of improved comfort. To study heat transfer and the temperature distribution through passive materials can be done by analyzing and stimulating possible economical designs. This work identifies relationships between the increase in mean daily energy consumption information and a trend of building design data of the sample houses and establishes the starting point feasibility for further work for developing passive energy design guides for establishing energy efficiency.*

## Introduction

In India the Ministry of Power estimate about 35 to 40 percent of the total electricity consumed in Residential apartments in India is wasted, because of improper design parameters of buildings, which results in an annual energy related financial loss of nearly 1.7 billion Rupee. Energy is the major factor required to achieve thermal comfort. India takes in different climatic conditions ranging from extremely hot conditions to severely cold conditions (Thirumaran and Subhashini, 2014). Energy availability has been trimmed down and people have to protect themselves from these extremities of the climate in a lifelike manner. The energy consumption in residential buildings is quite high and is expected to further growth because of improving standards of life and increase in the population. Air Conditioning use has increasingly permeated the market during the utmost few years and greatly contributes to the gain in energy consumption (Bhavsar and Bhatt, 2014). There has been a drastic gain in the role of air conditioning system for cooling the residential buildings all-round the globe. The last two decades have seen a serious energy crisis in developing rural areas especially during summer season, primarily due to cooling load demands of residential towers. Increasing use of energy has contributed to environmental pollution resulting in global warming and ozone layer depletion. Passive cooling systems utilize non-

mechanical methods to keep a comfortable indoor temperature and are a key element in mitigating the impact of buildings on the surroundings. Passive cooling techniques can cut the peak cooling load in buildings, so cutting down the size of the air conditioning equipment and the full point for which it is generally required (Arif and Acta, 2012).In the South Indian state of Tamil Nadu serves one of the highest consumption of electricity, whose average consumption per day is more than 300 million units. Tamil Nadu power supply has increased from 200 million units in 2011 to approximately 315 MU per day in 2017.Only at that place is considered the huge power shortage of more than 3000 MW in 2011. This state has surplus power now, but the demand is increasing every year by 6%. In this state the Chennai city consumes more than 44% percentage of force with regard to the entire electricity consumed by the nation. In Chennai maximum power use is caused by high rise residential buildings due to huge population (Abrav, 2016).

**Chennai Residential Building Construction Standards**

When Considering the Chennai as Smart city it must be developed with certain necessary components such as smart infrastructure, smart building and materials, smart city services, smart energy management, smart waste management and smart water management has to be involved. Creating smart environment is ultimate goal for smart city which incorporates Energy efficiency in building, intelligent lightning, smart grids, irrigation remote control, renewable power and district heating and cooling has to be provided. The normal Chennai housing construction is done mostly using bricks and reinforced concrete. This Reinforcement concrete acts as a composite material, which occupies an important place in the modern construction of different types of structures due to its several advantages. Due to its flexibility in form and superiority in public presentation, it has replaced, to a great extent, the earlier materials like rock, lumber and so forth with the rapid growth of urban population in India, reinforced concrete has become a material of choice for residential constructions(Bhavsar and Bhatt, 2014). The typical residential wall construction has been built by brick walls, which carries a huge load and less construction cost. The ceiling of the building structure is built using reinforced concrete following the Indian Standard code IS 456:2000: Code of Practice for Plain and Reinforced Concrete. For high rise building considering the Criteria for Earthquake Resistant Design of Structures follows Indian Standard code IS 1893 (Part-1): 2002.

**1.2 Chennai Climatic Condition**

In India the warm and humid zone covers the coastal regions of the metropolis. Some urban centers that come below this zone are Mumbai, Chennai and Kolkata. In this paper the Chennai climatic condition has been analyzed to know the reason behind huge power consumption. Chennai is located on the southeast coast of India in the northeast of Tamil Nadu which is on a flat coastal plain known as Eastern coastal plains. Its average elevation is around 6.7 meters which is 22feet and its highest point is 60 meters which 200 feet. The East Coast Beach runs around 92 Km along the shoreline of the entire city. In Chennai the high humidity encourages abundant vegetation in these regions. The diffuse fraction of solar radiation is rather high due to cloud cover, and the radiation can be intense on clear days. Hence, the marginal variation in temperature is quite less. In summertime, the temperatures can hit as high as 34 – 42 $^{o}$C during the day and 26 – 32 $^{o}$C at night. In wintertime, the upper limit temperature is between 30 to 36 $^{o}$C during the daytime and 25 to 30 $^{o}$C at night. Although the temperatures are not excessive, the high humidity causes discomfort. An important feature of this city is the relative humidity, which is generally really high, approximately 65 – 85% throughout the year, Precipitation (Rainfall) is likewise high, being nearly 1100 millimeter per year, or even more (Bhavsar and Bhatt, 2014).Hence, the provision for quick drain of water is essential in this zone. The twist is mostly from single or two prevailing directions with speeds ranging from extremely depressed to very high. Wind is desirable in this climate, as it can cause sensible cooling of the body. The principal design criteria in the warm and humid region are to cut heat gain by providing passive materials and promote heat loss by maximizing cross ventilation. Dissipation of humidity is also indispensable to reduce discomfort (Thirumaran and Subhashini, 2014).

**2.0 Literature Review**

**2.1 Statement of Problems**

A problem statement is a clear concise description of the issues that needs to be described by a problem-solving researcher. From the detailed study of various literature reviews the key problem statement has been identified, which includes a vision, issue statement, and the methods used to solve the

problem. It is used to center and focus the research at the beginning; keeps the researcher on track during the entire research, and it helps to validate an effort delivered an outcome that solves the problem statement. In this research the key problem statement taken from the overall literature review as follows

Rising Energy demand [ High Electricity consumption]
Finding the suitable passive materials
Changes in Building Design [Passive design]
Increase of carbon emission
High cost of the building Materials [Installation of Energy efficiency material]

### 2.2 Sampling for Site Selection

In this research the quality of use of the passive materials in residential buildings at various locations in Chennai city. In addition, because of zone situation, the importance of improvement of living condition, too much populations and residential buildings is much more than other zones in this city. The satellite image below shows, field study of this research at various locations of residential houses in Chennai as shown in figure 1.

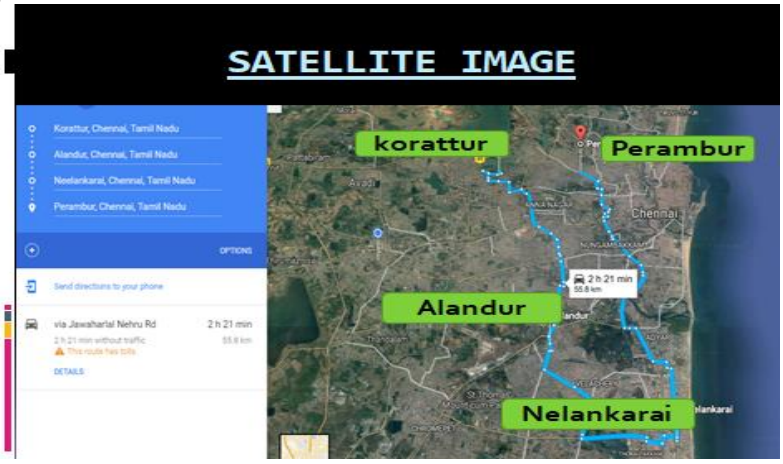


Fig 1. Satellite Images-Chennai

In this paper the four sites have been selected according to its area and the place of the area which it located. On each site a residential apartment is selected in four different parts of Chennai city. Site location at each zone of Chennai that represented the north, south, east and west directions can be named as H1, H2, H3 and H4. The site plan and the images of alandur, perambur, korattur, nelankarai follows

Alandur is located at the South of Chennai with latitude of 12°59'50.95"N and a longitude of 80°12'2.29"E Considering this site which located in Central part of Chennai city, which is away from the sea shore and this site is huge densely populated along with less forest and vegetation zone.

Nelankarai is located at East of Chennai with latitude 12.949282 longitude of 80.255013. This site is located on southern part of the Chennai region where this site is next to seashore, which causes decrease in temperature do the lots of moisture in air and sea breeze. This site is surrounded by huge number fvegetations and open land, since the population is keeps increasing for last 10 years.

Perambur, located at the North of Chennai with latitude of 13° 6' 57.6648" N and a longitude of 80° 13' 54.0012" E. This site is located northern part of the region where the site is filled with industry and oil factories. This site not much densely populated as compared to other three sites. But this site is surrounded by huge amount oil and gas industries cause's lots of carbon dioxide in the air.

Korattur is located at West of Chennai with latitude 13.1021499 and longitude of 80.1784312. This site is located on western part of the region where the site is away from seashore, which causes increase in temperature. This site is surrounded by huge number of manufacturing industries and densely populated. In this site is surrounded by huge amount of Automobile industries cause's lots of carbon dioxide in the air.

### 2.3 Feasible Passive Materials Identified from Literatures

#### 2.3.1 Pre-Cast Concrete Blocks

Considering the Chennai walls constructions for residential housing walls are mostly constructed by masonry bricks which emits more carbon dioxide. After having the detailed study and characteristics

of the passive materials the precast concrete is selected for the housing construction based on the tropical climate. In this paper the brick wall has been replaced by Precast Concrete blocks to achieve the energy efficiency and reduction of carbon. This precast concrete block is primarily used as a building material in the construction of walls and emits less carbon dioxide compared to masonry wall. It is sometimes called a concrete masonry unit (CMU) (Mardina and Riffat, 2015). This is a lightweight concrete wall compared to brick wall, butthe cost of construction is little high. The character of this pre-cast concrete blocks has one or more hollow cavity, and their sides may be cast smooth or with a design. Concrete blocks are stacked one at a time and held together with fresh concrete, mortar to form the desired length and height of the wall which reduce the transfer of heat from outdoor surface to indoor (Henry and Nowak, 2015).

2.3.2 **Low E Glass**

In Chennai housings single glazed window is used almost all the residential housing, which allows the sunlight to pass through and stores more heat inside the structure. Since for reducing the temperature and reflect the heat and light the single glazed glass window has been replaced with Low E Glass in this research by conducting various passive material study. This Low emissivity refers to a surface condition that emits low radiant thermal energy (heat); also, low e coatings are microscopically thin and transparent metal coatings. They minimize the amount of ultraviolet (UV) and infrared (IR) rays that can pass through window glass without compromising the transmission of visible light (Beebe, 2007). This E Glass also has special features which cool inside room in the summer and warm in winter. Improve the energy efficiency of your house. Reduce the amount of energy you use and more effective than single glazing or standard double glazing (Mardina and Riffat, 2015).

**2.3.3 Insula Tiles**

Thermal insulation of the terrace, concrete slab is vital for imparting comfort to the inhabitants as compared to other potential elements such as wall, window/door openings etc. Since the upper roof surface is exposed for the longest duration directly to almost intense perpendicular solar heat radiation. For weathering roof top, the clay tiles are insulated which result in reduction of accumulation of heat on the roof and its transmission into the rooms below, helps lower the temperatures in the rooms significantly to a certain extent. This also reduces the period of use of cooling devices such as coolers and air conditioners, thus saving in energy costs (Gang and Bing, 2010). So instead of clay tiles placed on the weathering roof the insular tiles are placed as in above figure which reflects more heat than existing clay materials. This insular heat insulation tiles made from PCM (Phase Change Material) Technology by using micro encapsulated PCM's, which is leak proof. It cools inside room in the summertime and warm in wintertime, which brings down the dead load of the building and reduces the electricity bill fulfilling the BIS Values (Ramin and Fazad, 2014).

**3. Research Methodology**

In the methodology process data gained during this research was compiled using mixed research methods, which is appropriate for this type of research method. This approach was implemented through a survey questionnaire. This instrument was developed as the best means to capture data from large quantities of professionals in companies with a focus on alternative passive material to replace the existing material for energy conservation. The steps which helps to, and frame the survey questionnaire are outlined below and summarized as follows,

To develop a literature review to determine the basic ideas to carry out research methodologies.

To develop a survey questions directed towards energy saving housing construction professionals that would provide information to answer the research question.

To select a database and develop a subject set using the database for passive design.

To develop pilot study on the survey among professionals and engineers for process, understanding, and complexity of information collected.

To study the survey through SPSS software using email addresses gained through passive design.

Finally carry out the survey closure and method of data analysis.

**3.1 Analysis using Software**

Auto desk Revit is a building information modeling software used by structural engineers and contractors to design a building and structure and its elements in 3D, annotate the model with 2D drafting elements, and access building information from the building model's database (Autodesk Manual,

2017).By using this Revit software the climatic condition, temperature, energy efficiency and carbon emission of each residential apartment can be broken down. This software specially used for this research which aids to perk up the floors and walls with U values and makes the exact results in giving each house. The U values for External walls, floors, window glass and roof use the British standard code values (Mariska, 2013). Building Assumptions for H1, H2, H3 & H4

Table 2. Building Envelop Parameters List – (British Standard Code)

| Building Structure - Element | Description Values | U value W/m2 K |
|---|---|---|
| External Walls | 252 mm Brick + 19 mm Plaster | 1.42 |
| External floors Type 1 | 110 mm Concrete Slab, 8 mm Screed, 6 mm timber | 1.87 |
| External floors Type 2 | 110 mm Concrete Slab, Insulation (R = 0.16 m2 K/W), 6 mm Screed, 6 mm timber | 1.46 |
| External window glass | 6 mm Single Glazing, SHGC: 0.8 | 5.67 |
| Roof | 27 mm Slate Tile + 6 mm Bitumen Felt + 24 Air Cavity + 22 mm Plaster | 2.78 |

### 3.2 Passive& Existing Materials U Value

Before the stimulation the live project study has been done by studying and taking the reading of temperature and carbon emission study for the live project with the existing construction materials. By using the Revit software, each Apartment has been taken in which the entire area was selected and drawn with the exact dimension from the plan. Once the drawing has been done on the software, the material of the existing construction and passive materials data has been entered in the system. Run the analysis and stimulation of the house plan with existing material and passive material using U Value or thermal transmittance. The U value for the Existing materials and passive materials as per the standards by British standard codes are given below on table 3

Table 3. Materials U Value

| SL. No | Current Material | U value W/m2 K | Passive Material | U value W/m2 K |
|---|---|---|---|---|
| 1. | Brick Wall | 0.52 | Pre-Cast Concrete Wall | 0.26 |
| 2. | Normal Standard Insulating Glass | 0.49 | Low E Glass | 0.24 |
| 3. | Clay Tile | 0.44 | Insula Tile | 0.36 |

## 4. Finding & Results

The various live analytical studies on the existing building material which is compare with the stimulation study after replacing the passive materials on these study site houses. The study has conducted over energy consumption of each houses, carbon reduction and indoor temperature with relates to before and after replacement of passive materials.

### 4.1 Power usage in each house

In each house the various electrical appliance data usage has been collected from the real house scenario and these data which helps to be entered in the energy analysis software. The software gives the requirement in electricity for each house with respect to the size of the house, location, climate and temperature is verified on the site location with present electricity monthly bill which is more or less similar in Chennai city. Each house usage of different electrical equipments' and electrical appliance has been taken into the account and the time period for the working of each appliance has been taken. Based on the electricity bill and using stimulation the requirement of power consumption for each house per day has been calculated and displayed on the Table 4.

Table 4. Power usage in each house.

| Types of houses | Specification | Usage of electrical products | Requirements of power in KWh |
|---|---|---|---|
| h1 | 2BHK | Fan:4 AC: 1; F/WM: 1; Lights: 4 | 2.6 |
| h2 | 2BHK | Fan:4 AC: 1F/WM: 1Lights: 4 | 2.2 |
| h3 | 2BHK | Fan:4 AC: 1F/WM: 1Lights: 4 | 3.1 |
| h4 | 2BHK | Fan:4 AC: 1F/WM: 1Lights: 4 | 2.7 |

### 4.2 Indoor Temperature Before and After Using Passive Materials

Table 5. Indoor Temperature with Current and passive materials

| Indoor temperature | Before adding material | | After adding material | |
|---|---|---|---|---|
| | Summer | Winter | Summer | Winter |
| ALANDUR H1 | 35.11 | 28.61 | 28.24 | 26.11 |
| NELANKARAI H2 | 36.11 | 27.11 | 27.70 | 24.44 |
| PERAMBUR H3 | 39.11 | 29.66 | 32.92 | 27.44 |
| KORATTUR H4 | 38.51 | 30.11 | 31.81 | 28.36 |

In the table 5 the temperature for indoor room has been observed at an average rate per year on doing the stimulation using the revit software with the passive materials. There is an average of 7 to 8-degree difference when comparing the existing materials with passive materials in these residential houses. For the existing materials the temperature taken for each month and calculate as an average of entire year, this has been verified with the real housing projects on various site locations. Since each house is in same city but tends to have difference in the indoor temperature compared to one another. These temperature differences for each house are due to the various factors like site geographic locations, population density, vegetations, industrial zone and the distance between the seashores which is mentioned on site study.

### 4.3 Calculations of carbon emission for various usages of electricity

A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO2) (Mariska, 2013). Carbon Emissions is caused by the use of electricity by using electric lighting, electric appliance and electric equipments. The energy production for Chennai city is around 85% through Thermal powerhouse, the burning of fossil fuel such as coal which affects the carbon footprint. These carbon emissions are reduced by installing the passive materials which makes the energy consumption less, in turn reduce the carbon emission. Stimulation Analysis of carbon emission is done with respect to U value (thermal coefficient) of the passive materials used in the residential building. It is found that there is huge difference between carbon emission by using the existing material and passive materials. Here the H2 site considered to have more carbon emission due to location around the industrial zone and away from the seashore. This suggest that orientation and location of housing constructed on wind directions.

Table 6: Carbon Emission Assessment

| Type of houses | Power required in each house (Kwh) | Before using passive Materials (CO2) in Kg | After using passive Materials (CO2) in Kg |
|---|---|---|---|
| H1 | 2.6 | 4137 | 2284 |
| H2 | 2.2 | 3849 | 2102.2 |
| H3 | 3.1 | 4796 | 2821.4 |
| H4 | 2.7 | 4294 | 2508.6 |

### 4.4 Monthly Electricity Consumption in KWh

The measurement of power consumption for the real housing building site has been taken with existing materials. On doing the stimulation analysis, it is observed that there is gradual change in the power consumption after replacing passive material. There is gradual difference of 2 to 3 kWh energy consumption when compared to exiting material and passive material installations. The monthly

electricity consumption for the individual housing before and after replacing the passive materials is as follows.

Table 8. Monthly Power Consumptions

| | BEFORE Changing Materials | AFTER Changing Material |
|---|---|---|
| H1 | 2.6 | 1.8 |
| H2 | 2.2 | 1.4 |
| H3 | 3.1 | 2.3 |
| H4 | 2.7 | 1.8 |

From the above Table 8 the electricity is reduced when the three selected passive materials are implemented for housing. The before and after represents the energy analysis is carried out with existing materials (Before) and replacing the existing materials with passive materials. This energy consumption difference can cause the reduction of cost in electricity bill which gives the benefits for the owners and consumers by paying fewer monthly bills for less power usage.

**4.5 Research Observation and Discussion**

The Chennai city is taken for the research study because of the tropical climate and energy demand increase every year by 14% due to the growing population increase in housing construction. So, in this research for energy conservation and carbon reduction is major key problems has been identified from various literature review, field survey and questionnaire survey by various construction professional. There is lots of research work carried on passive design and passive material for achieving energy efficiency for colder region by previous researchers. But there is a gap in previous research contribution, which there is not suitable passive design or feasible selection for particular passive material selection for residential houses at tropical climate zone have not identified.

Based on these gaps from literature review and field survey in Chennai the solution needs to be found out, which is related to passive design or passive material for tropical climate as the passive material solutions given to colder climatic zones. In this research there are three passive materials has been selected for replacing the existing materials on residential housing sector. The three feasible passive materials have been found to replace the existing materials. The three passive materials such as precast concrete for wall structure, E glass for windows and Insula tiles for roof surface to replace the materials like masonry wall, Single glazed window and clay tiles which commonly used for Chennai housing constructions.In this research the Chennai city is identified because of the climatic condition, huge energy demand and high population growth. So, based on the above factors and hot and humid climatic zone on Chennai city the suitable passive material is identified for the construction and undergoes detailed comparison and stimulation analysis with existing materials as follows.

The energy analysis result observation shows that when the ordinary window glass is replaced with low e glass which gives considerable difference in energy saving is identified, also when the low e glass is used there is a slight temperature difference inside the room has been achieved. This is due to the fact that e glass doesn't allow UV ray and heat inside the room surface, which makes the room cooler than outdoor.For the housing wall structure the existing material like masonry brick wall structure has been replaced by the passive material like precast wall structure. The energy analysis is done for precast concrete wall which gives a massive difference in temperature inside the room surface. This is because of the precast concrete, which won't transfer much heat from outer surface and reduce lots of carbon emission than masonry brick walls.

Finally, the passive materials like insula tiles used on the top of the roof surface replacing the clay wall existing material. By replacing the Insula tiles after doing the energy analysis, it shows that there is slight difference in temperature and much heat is reduced inside the room temperature. The Insula tiles which has properties to reflect the sunlight and don't observe the heat due to white color, also these tiles won't transfer much heat inside the room temperature. Overall by replacing these three passive materials, on doing the energy analysis there is considerable amount of temperature difference around 8 degree C in summer and 2 degree C in winter period for the entire four individual houses in Chennai city. The energy requirement of residential houses can be fulfilled by applying the concept of energy efficient smart building with passive materials.

## 5. Discussion and Conclusion

In the past several decades, many literatures have emerged on the topic of Passive material techniques used in building to achieve energy saving for colder regions by western world. There is huge gap and limitation for the passive material solution for the tropical climate regions. This research paper is focused on Passive material application situations in residential building all over the Chennai city. This study includes passive materials major applications in residential building, passive material application areas and application types in tropical climatic regions, passive material thermal co-efficient properties suitable for building and application effects of passive material integrated in residential building. According to the several literature aspects and limitations, some new findings can be obtained as follows

There is scarcely any study, experimental or numerical, that verifies the evaluation of passive material in real indoor conditions. Therefore, more studies focusing on real full-scale buildings and real operation conditions should be carried out to prove the authenticity and reliability of current research. Based on this different individual housing projects work have been studied in the Chennai city at various places.

Passive material application areas are mainly concentrated into four parts of Chennai city they are Tambaram, Redhills, Sripermbathur and Kannathur. There is a difference in temperature for these entire regions even its falls on same city because of the orientation, location at Industrial and residential zone and increase in population. Also, there is various data collection techniques have been adopted for the selection of houses and passive materials. In these housing the various data has been collected such as Wind speed, temperature at indoor and outdoor, orientation, area and dimension of the houses, orientation, energy consumption, electric appliance usage, population growth at particular site study and finally last 3 decades rainfall and temperature has been studied. Also, the best passive material and their application found for air temperature inside room is a reduction of 8 degree C at an average for the entire housing site for the tropical region. For average peak temperature variation, an increase of more than 15% in temperature has already been achieved by most researches for colder region using the PCM (Phase change materials) or passive materials.

In this research due to the temperature reduction power usage also gradually reduced which makes the owner to pay less electricity bills. The cost of the energy consumption is reduced by around 40 % by using the passive materials than the previous bills. Finally, the carbon reduction is achieved almost 45% as shown by energy analysis by carbon foot print a stimulation method, which helps the environmentally friendly and. By this research it is suggested that still more temperature and carbon reduction can be made effective depends on the orientation and location of site construction using passive design and framing suitable guidelines for residential housings in this Chennai region.

## 6. Limitations & Directions of Future Work

The size of the sample was not too large – 3 different professionals are selected as participants from nine construction firm do to short time. A bigger sample would probably increase the reliability of the research.

Qualitative research is not permitting the measurement of the examined key issues and problems.

The analysis of the role of the data management software the promotion of software tool SPSS as an outsourced destination may be influenced by factors which were not brief detailed in this research.

In some cases, participants may refuse to speak against their working firms, so some reliable data may not be available.

Functions of residential buildings in Chennai city are dynamic in nature, which is unique (Size and height) compared to one another.

Less number of information is provided by building contractors to the researcher due to lack of knowledge.

Building owner and contractor unfamiliarity with the information required by researcher and more ready to share the information's because of new concepts & techniques which they never come across.

Building contractor's oversight leads to data entry error in the questionnaire submission process.

The direction of the future Study can focus on this research study will make to the broad literature or set of broad research problems upon completion. In this activity it will draft the Significance of the Study or research by determining, how this entire research work benefit other and how other researchers will be benefited or learn from this study made

Further research can be strengthened legal and regulatory framework and mechanisms to enforce the legislation for improving the energy efficiency of the building sector with the focus on new residential buildings by using passive materials.

The direction of further study enhances the capacity of the Chennai city to implement this new passive design features which helps effectively enforce new energy efficiency standards and norms with the focus on new residential buildings and existing buildings.

Energy and cost saving potential of new energy-efficient measures in at least four new residential buildings located at four different directions in Chennai city. This can be taken further steps to implement the guidelines for passive design for the construction of residential housings in tropical climate.

Documented, disseminated and residential project results providing a basis of further future research replications of new passive construction under tropical climate.

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# Conceiving innovative approaches to in-product communication (IPC) relating to product development, Integrated Marketing Communication (IMC) and marketing mix towards achieving better customer engagement and ROI (return on investment)

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**Keywords**
Social network analysis (SNA), social network theory (SNT). Graph theory, Social Comparison theory, dyadic relationship

Abstract:

*The marketing communication currently leverages on the in-product communications (IPC) as a cutting-edge digital technology to gather customer feedback as an increasingly preferential mode over other forms such as email marketing, etc. However, the success of IPC to achieve an organisation's goal would largely contingent on ways it would be related to a host diverse domain such as product development, integrated marketing communication, marketing mix, etc. The research aims at a discourse primarily relying on McLuhan's range of media theories combined with emerging perspectives of his subsequent revisionists and critics such as Umberto Eco.*

**Introduction**

New age marketing is certainly progressing into in-product communications (IPC) which are embedded messages, content, and related media consumables delivered directly to a targeted audience (TA)'s internet-connected contraption or application, with the aim of informing, gleaning feedback from, engaging with, or reaching out to that particular TA or segment of clientele at a relative higher engagement rates than via other digital marketing and online marketing channels. The feedback-loop created through IPC to gather market intelligence is acknowledged to have much greater success over email or any other digital marketing product.

The study focusses to learn how organisations are recently using IPC to engage with their TA by delivering critical messages direct to TA's products without the barriers and clutter of emails or anything similar form of messaging. TA has been found to have been better targeted through product registration, guarantee/warranty sales, product user manuals, surveys, product reviews, etc. IPC thus has been acknowledged to have found the lowest friction way to engage with TA.

The proposed research will focus how to successfully encrypt marketing messages in IPC, and to investigate the subsequent influences it would have on the marketing mix, IMC, etc. Also, the research would aim to arrive at a model to gauge the customer engagement rate that may have increased over traditional channels impactingcompany's ROI (return on investment), increasing leads for the sales team and reaching new TA segments.

The research aims to demythologise that email putatively serves as the most effective digital marketing tactic and the channel that delivers the best ROI for an organisation.

The research also aims to contradict email communication's effectiveness that is related to latter perceive ease. The research argues that the extent to which email marketing communication is known for its" ease of use" contingents on the sophistication of particular marketing strategy. If such a thing could be replaced with innovative IPC it can find greater customer engagement. However, the research also guards itself against the pitfall as many empirical studies suggest that there is always less enthusiasm for the effectiveness of paid search, despite the latter being higher on the totem pole of ''ease of use''.Apart from digital marketing communication through email the research would examine the perceived effectiveness of participatory media vis-à-vis to IPC. The participatory media includes community media, blogs, wikis, RSS, tagging and social bookmarking, music-photo-video sharing, mashups, podcasts, video projects and videoblogs and many other forms that feature in citizen media or as a form of expression of a democratic media.

The research would endeavour to find out the key problem areas with social media with relation to ROI measurement as opposite to IPC which is likely to appeal the marketers for the latter could provide more accurate measurement of ROI.

**Methodology**

The research would rely on McLuhan's text on 'The Gutenberg Galaxy: The Making of Typographic Man' to relate the current discourse on IPC to cultural studies and media ecology and subsequently intend to find out how communication technology such as all forms of IPC can have a bearing on cognitive organization, which in turn has huge ramifications for social organization.

Further, based on McLuhan's other texts 'Understanding Media: The Extensions of Man' and ''The Medium Is the Massage: An Inventory of Effects'' the research would focus on exploring the concepts of the medium in TA as such medium has a social effect -- McLuhan exemplifies an electric bulb that enables individuals to create spaces during night which would otherwise be engulfed by darkness – thus, marketing content in the process miss the structural changes in consumers' affairs that creep into their lives subtly, or over long span of time.

The discourse on the IPC indicates at the social implications of the medium and the current research particularly tries to unravel the values, norms, and the TA's ways of doing things that have changed because of the ways and means the technology is put into use in IPC. The social implications of the medium – devices and Internet -- thus, can be ranged from the current cultural and behavioural patterns to their historical precedents. The enquiry based on McLuhan's methods will focus on knowing how through interplay with existing conditions, to the secondary or tertiary effects in a cascade of interactions have allowed certain behavioural/usage patterns to surface.

McLuhan's personalisation of the term "massage" to denote the effect each medium has on the individual sensorium – can help current research to know how IPC has a bearing upon TA in this context and how IPC can account for the inventory of the "effects" of numerous media in terms of how they "massage" the sensorium. It would be a significant revelation how IPC upholds McLuhan's paradigm ''each medium engenders a different "massage" or "effect" on the human sensorium' or even '' all media including IPC are "extensions" of consumer senses, bodies and minds.''

Also, all forms of IPC unravel itself as they are subjected to McLuhan's concept of "tetrad of media effects" based on the questions such as what does a particular medium can enhance, or make obsolete, or retrieve that had been obsolesced earlier and flip into when pushed to extremes. Replicating McLuhan in an IPC scenario will aim at creating a new diagrammatic representation of the "tetrad of media effects': 1. Enhancement (figure): What IPC amplifies or intensifies; 2. Obsolescence (ground): What IPC dispels from prominence; 3. Retrieval (figure): What IPC retrieves which was previously not found; 4. Reversal (ground): What happens to IPC when pushed to its limits.

However, as the research would employ the cultural tools and methods of McLuhan it would not lose sight of Umberto Eco, contention that McLuhan's medium conflates channels, codes, and messages under the overarching term of the medium, confusing the vehicle, internal code, and content of a given message in his framework.

**Literature Review & Discourse**

Despite social media mining's claim of arrived at host of algorithms suitable for investigating massive social media data using tools such as data mining, social network analysis, machine learning, ethnography, search engine optimisation the research would establish still all these fail to convincingly encompass that epresent, measure, model, and mine meaningful patterns from large-scale social media data.

Though the research does not disown the progress of theories and methodologies on social media mining it is still not sufficient to convince the organisations and marketers to accurately relate this data to ROI, customer engagement, counting the leads generated for the sales team or identification of new TA or reaching out to new customer segments.

Hence, the current research argues that the employment of IPC can reduce the marketing and customer service cost as opposed other forms of digital marketing including email marketing. Also, the research points out to decline of popularity of email marketing as McKinsey's iConsumer reports [9]decline

in email usage as the medium surrendered ground to social networks, participatory media and mobile messaging apps, etc.

However, studying the consumer behavioural pattern through email would always remain one of the key pursuits of the current research, because email is omnipresent and pervaded all forms of lives. As organisations learning from their experiences to create more personalized email offerings, based on individual consumer' onsite and catalog shopping behavior, can always serve to create improved IPC models. Nora Aufreiter[10] recounts Flash sales site Gilt Groupe, that each day puts across over 3,000 variations of email, each tailored to past user click-throughs, browsing history, and purchase history. Such effort of Gilt Groupe can serve to create true customization and targeting abilities which can transform the existing processes adopted by IPC and other forms of digital marketing that are tailored to specific capabilities and supporting infrastructure. Since customer information scattered across the organization, hence always must be aggregated for a customer on a single window, the IPC thus must find ways personalise these messages.

Along with McKinsey's findings the Yesmail Email Marketing Compass report does require to be a part of current research's literature review as its analysis of email metrics identifies key trends and outlines major implications to enable marketers prepare for a certain task. Extrapolating the data from the discrepancy between mobile and desktop click-to-open (CTO) rates, it is concluded that conversion in the form of a click is the key challenge for mobile email marketing and converting on mobile poses additional challenges. Due to screen size of a handheld mobile, divided attention span while on-the-go, and varied user experience, mobile email viewers are less likely to click on a message than their counterparts sitting at their desks. Unless the email speaks to customers' needs in the right context and calls upon for an immediate action, mobile clicks would not improve significantly enough to match desktop clicks, the Yesmail Email Marketing Compass report asserts.

Any discourse IPC also must always trace its origin to a product-development process to know the key differences underlying the product. Such an exercise would enable to identify the patterns of communication employed by marketing, engineering and manufacturing; it is possible that all despite being in the same organisation still may have worked at a cross-purpose with each other. The current endeavour would be to model the research on the findings of Griffin and Hauser (1992) who examine commuication patterns for two matched product-development teams where the key difference between the groups is that first used a phase-reivew development process while the other employed Quality Function Deployment (QFD), a product development process adopted by North American and Japanese companies in early 90s. The empirical study suggests that QFD enhances communication levels within the core team (buisness development and manufacturing). QFD alters the communication patterns from 'up-over-down' precipitating thorugh management to more horizontal routes where the core team members communicate directly with each other. On the contrary, the QFD team communicates less on planning information and less with stakeholders of organisation external to the team.

The focus on product relates IPC to product roadmap and future releases, competitive analysis. It can be considered to be a departure from Pragmatic Marketing Framework (a standard language which serves as a brief for whole product team entailing a blueprint of the key activities to be undertaken to bring profitable, problem-oriented products to market) and engage the IPC to product management triad (the larger product management and product marketing functions). As digital marketing is increasingly leveraging on IPC as a potent tool the collection of feedback data of the new age marketing is now shifted away from email marketing, search engine marketing (SEM), social media marketing and mobile advertising among host of other digital innovations.

However, IPC's current challenge is tomake it agrees to Integrated Marketing Communication (IMC), as the latter relies on the application of consistent brand messaging across both traditional and non-traditional marketing channels and employing variegated promotional methods to reinforce each other.

For example, it would be interesting to find out how an organisation needs to strategise its IPC to marry it off to specific segments of consumers in order to provide related support which can range from do-it-yourself/user guides /training materials to initiate orders of replacement parts.

The data capture of IPC too also needs to be synchronised with organisation's existing online/internet system related to its presence in social media (Facebook, MySpace, Twitter, Orkut, LinkedIn, Google Hangout and Plus, Foursquare, flickr, Pinterest, YouTube, Wikipedia, Instagram) or its stakeholders' presence in participatory media (community media, blogs, wikis, RSS, tagging and social bookmarking, music-photo-video sharing, mashups, podcasts, participatory video projects and videoblogs) that allows a certain process of collecting, reporting, analyzing and disseminating content. IPC leverages on communication platforms that can auto-capture device information including product serial number, code, type of operating system, product version number, or other encryptions, location, and potentially any metadata agreed-upon by the TA to be shared. A lot of these data, if not complied to procedural requirement stated within consumer laws and organisation's policies, can create massive challenges the ways IPC is adopted to function.

The discourse will classfiy all the forms of IPC -- in-device communication, in-app communication and direct-to-computer /direct-to-desktop communication, etc. -- in order to target the market segments and delivery more effectively. The overcrowding of email as the most popular digital marketing toolkit can be evident from declining open rates, engagement rates, lower cost-per impression, clicktag, cost per click, view-through rate, abandonment rate, ad serving, banner blindness, cost per action, cost per thousand, click-through rates, and lower conversion rates. Thus, IPC can emerge as the most accurate alternative, or if not, at least as a supplement to other digital marketing channels including email.

The complexities of organisation, which accordingly shaping marketing communication, allow for a certain way to classify products/services to gain strategic marketing insights. Lovelok's proposed schema for classifying services in ways that transcend narrow industry boundaries allowing nature of service to affect a marketing task can serve to classify all IPC forms. Also, believing McLuhan 'the medium is the message' paradigm -- the form of a medium embeds itself in the message engendering a symbiotic relationship by which the medium dictates how the message is perceived and interpreted – the IPC cannot talked about in isolation without the devices and software or the technologies it engages.

The devices and internet, both can be considered as mediums for messages, according to McLuhan are shaping and controlling the scale and form of TA's association and action". The manner in which medium employed by IPC played with conceptions of speed and time transubstantiate the sequence and connections into a panoply of creative configuration and structure.The medium such as devices and Internet in TA are the messages themselves, and the communication messages in TA must be considered as another medium.

In-device communication or in-device messaging as a form of IPC known to adopt messaging communications directly to a TA's device screen, without conduiting through a software application, can make the message accessible through an internet-connected printer, the screen on the handheld controller of a UAV or drone, or the screen of an internet-connected television. Through the mode of messaging the organisation must engage in a form of controlled messaging as IPC is integrated directly into an operating system of the internet-connected device. Feeding these messages as a part of controlled messaging creates its feedback-loop and content and engage with TA from directly on the device display.

Similarly, the in-app communication or in-app messaging, the act of messaging, obtaining feedback, or otherwise communicating with TA through a software application, either on a mobile handset or tablet, or through software on a personal computer. In this mode of communication, a communication platform is embedded as a software module in the application, usually leading to faster technology deployment, as compared to the integration timeline of in-device communication platforms. Direct-to-computer communication or Direct-to-desktop communication, or on-desktop messaging is the particular form of messaging, obtaining feedback, or otherwise communicating with TA through a software application or embedded peripheral driver on a personal computer system. TA interacts with messages on the screen of the computer system, and the product manufacturer serves controlled messaging from the back-end system. To embed the IPC in IMC, notwithstanding the fact that the latter still an emerging discipline in an open economy, Holm's identified stages of IMC can be serving the purpose of this research. Holm starts his identification process from tactical coordination to financial and strategic integration. The current research can move beyond Holm's findings of majority of organisations that are anchored in the first stages and a handful to a strategic level – in order to know the impediments little more intimately that prevent organisations moving from tactical to strategic level. Holm in study of big-ticket Swedish

organisations found that the decisions pertaining to IMC were rooted on these companies' advertising agency level and always had failed to appear on management level, thus the marketing communication had limitations.

Further, since the IMC and brand identity as critical components of an organisation's brand equity strategy it relevant to the current research to arrive at a conceptual framework with testable research propositions toward IMC theory development and the bearings it would have on IPC. What would serve this purpose is Madhavaram, Sreedhar et al (2005) brand equity strategy schematic that elaborates (1) the role of IMC in engendering and sustaining brand equity, and (2) the role of brand identity in informing, guiding, and assisting to develop, nurture, and implement the organisation's overall IMC strategy.

**Conclusion**

The in-product communication demands to be spread across all marketing verticals and using entire gamut of toolkit (search engine marketing to social media) supported by the strategy used by an organisation to reach targeted segments of their consumer base to provide in-product customer service and support, supply training materials and paraphernalia, and initiate orders of replacement parts and consumables. As organisations increasingly gathering user intelligence and feedback on their consumer base – the email requests for such information continues to decline – there will be more innovations in the in-product communications that are delivered to the device of a consumer. This will create a new paradigm-shift in companies' engagement with in-product data management (schematic or CAD drawing Material data-sheets, etc.) and in-product communication platforms to auto-capture device information, like brand name, part number, part description, supplier/vendor, unit of measure, cost/price, serial number, model number, operating system, version number, location, and potentially any additional metadata available from, and agreed-upon by the user.

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