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Concurrent Session IA
Sustainability Reporting

SYSTEMATIC ASSESSMENT MODEL FOR SUSTAINABILITY REPORTING IN THE MALAYSIA CONTEXT

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ABSTRACT

Sustainability assessment is gaining interests and increasingly recognized as a powerful and important tool to measure the performance of sustainability in a company or industry. Nowadays, there are many existing tools that the users can use for sustainable development. There are various initiatives exists on tools for sustainable development, though most of the tools focused on environmental, economy and social aspects. Using the Green Project Management (GPM) P5 concept that suggests the firms not only needs to engage in mainly 3Ps principle: planet, profit, people responsible behaviors, but also, product and process need to be included in the practices. This study will introduce a new mathematical model for assessing the level of sustainability practice in the company. Based on multiple case studies, involving in-depth interviews with senior directors, feedback from experts, and previous engineering report, a framework is proposed with the aims to obtain the respective data from the feedbacks and to develop a new mathematical model for reducing the variation. Lastly, to develop a matrix for a systematic sustainability assessment model for sustainability reporting. This study is expected to provide a guideline to the company to assimilate the sustainability assessment in their respective development stage.

Keywords: Sustainability development, Sustainability reporting, Sustainability assessment

INTRODUCTION

Sustainability is a notion that needs to be addressed not only at the policy level but also in business context: many companies have included sustainability in their mission, also driven by an increasing demand for sustainable products by more aware consumers. (Zamagni.A et al., 2013). Sustainable development has always been an important central point for all decision makers in any organizations. Sustainable development has been defined in many ways, but the most

frequently quoted definition is from Our Common Future, also known as the Brundtland Report in 1987: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Kapor, P et al., 2015). Sustainability seems to be agreeable proposal because of its meeting points among environmental concerns, manufacturing, and product design activities (Rusinko et al., 2007). Over the years, the number of sustainability indicators and their use in decision-making has greatly increased (Hak et al., 2012). However, the existing sustainability evaluation still do not integrate a nature-economic-society aspect, some of these tools are focused on just one or two dimension(s) of sustainability, product sustainability perspective (Ghadimi, P. et al., 2012), environmental aspect (Bjørn, A. et al., 2016; C. Strazza et al., 2015). Moreover, some others focused on all three dimensions (Chong, Y. T et al., 2016; Scandeliuss, C. et al, 2016; Hugé, J. et al., 2013), but there is a same gap in all of these methods which is limited attempts at bringing Green Project Management (GPM) P5 method to use in sustainability practices. Besides that, no research has been attempted from the viewpoint of focusing on sustainable parameters toward achieving a more systematic assessment model which can contribute to sustainability reporting.

Encouraged by Bursa Malaysia, sustainability view can be referring as crucial point to a successful business in this present-day. Every companies in the auspices of Bursa Malaysia also required to embed the sustainability concept as a vanguard of their business. Besides, each company also need to provide a sustainability report as a requirement of Bursa Malaysia Securities Berhad. Nowadays, every single company that under the auspices of BURSA Malaysia is required to yield the sustainability reporting. Hence, a systematic sustainable assessment is designed in the advancing of sustainability reporting for promoting sustainability practices. Most of the companies in Malaysia have implemented green practice in their organization management. However, the green practice only emphasizes the environmental aspect, and that causes other important aspects within the company seem to have overlooked. Thus, GPM P5 standard is introduced as one of the sustainability assessment approach to measure the sustainability practices performance thoroughly by considering not only the main 3Ps aspects; planet, people, profit, but also process and product.

The general objective of this research is to propose a mathematical model for accessing sustainability practice in a company by using P5 integration matrix. This study will aid the company to determine their level of sustainability compliance in their development and to be documented in their sustainability report.

METHODOLOGY

The general framework of the approach is as depicted in Figure 1.

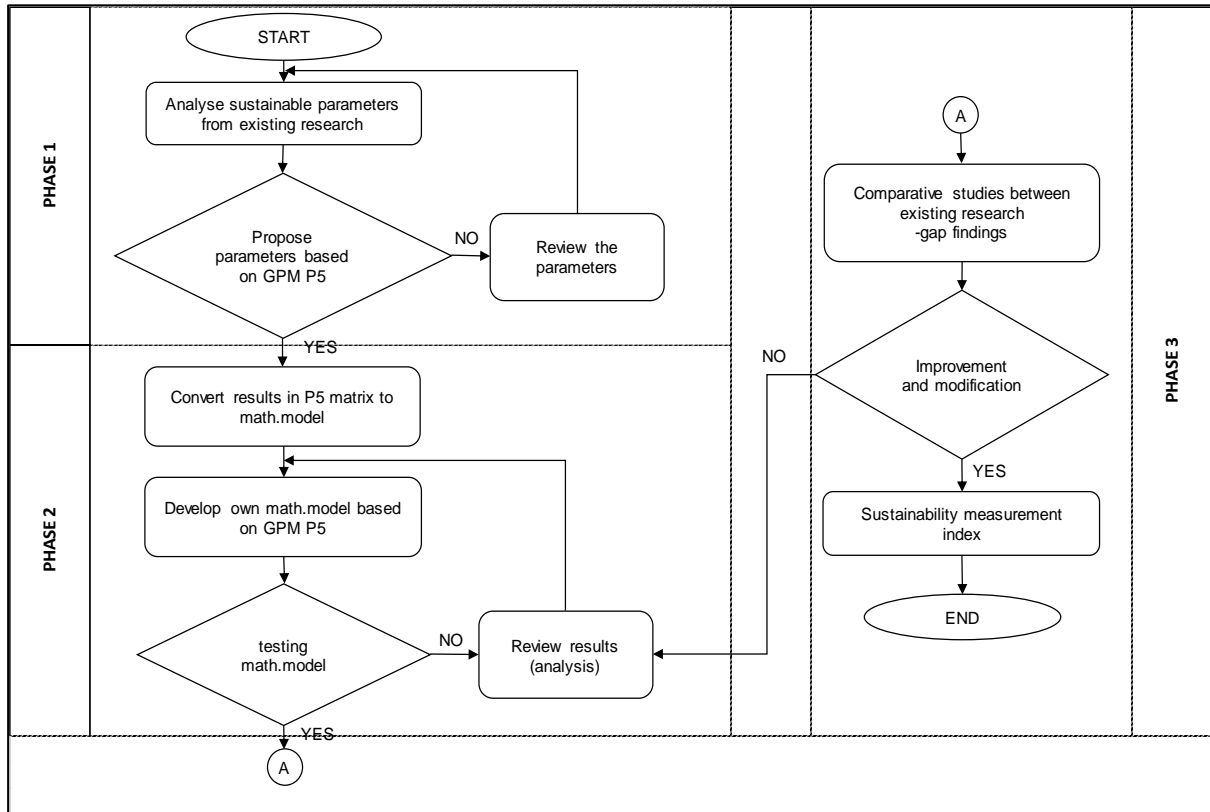


Figure 1: General framework of proposed approach

The concept of P5 Integration matrix will conclude all major sustainability standard refer to the Triple Bottom Line of sustainability: people (society), profit (financial), and planet (environment), whereas another two are process and product [3]. The proposed method followed during this project is shown in Figure 1. The research analogy behind this project is that how an organization can move toward sustainable practicing using a GPM P5 method for producing a better sustainability reporting. With this methodology, a systematic sustainable assessment for organizations that want to improve their sustainability reporting and ultimately implementing of sustainable practicing is provided.

The proposed research has six steps as follows:

- Step 1: Data sources – case company, existing research
- Step 2: Criteria selection – Weighing criteria
- Step 3: Data collection – analysis
- Step 4: Mathematical model evaluation (based on GPM P5 standard)
- Step 5: Calculating current sustainability index
- Step 6: Calculating improved sustainability index

Sampling / Data sources

In this section, the studies from the existing research is done to analyse the frequently used parameters in sustainable assessment and the tools used to measure the sustainability. Furthermore, the details about the case company, product, data collection, and sustainability assessment are presented. The case study will be conducted in any company in Malaysia.

Criteria selection – weighing criteria.

The scale between +3 – -3 was developed to ease the respondents' group for rating the evaluation criteria, which initially selected by the design engineers based on technical documents and the results of a prior survey.

Table 1: Scale of "weighting criteria" as stated from GPM P5 checklist

Numerical rating	Description
3	Negative Impact High
2	Negative Impact Medium
1	Negative Impact Low
0	Neutral
-1	Positive Impact Low
-2	Positive Impact Medium
-3	Positive Impact High

Data collection – analysis. In this case study, owner of the company, chief executive officer, general manager and a system manager were selected as the expert decision makers. The will be an act as a field study including in-depth interviews with selected experts. The experts' opinions are used for providing a sufficient data to fulfil the research objectives.

Figure 1 - 4 shows the initial result concluded from the data analysis that have been done. The graph consists of people, planet and profit that based on process and product from manufacturing operation system field. The data from the graph is already been calculated using min formula in the excel.

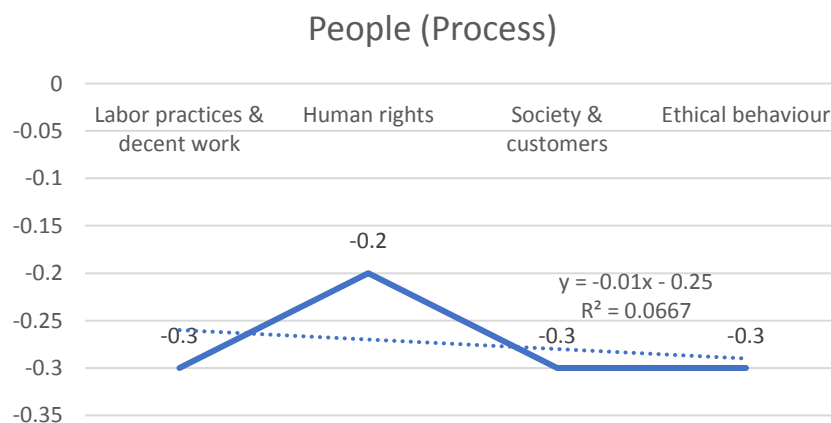


Figure 1: Min value for people based process criteria

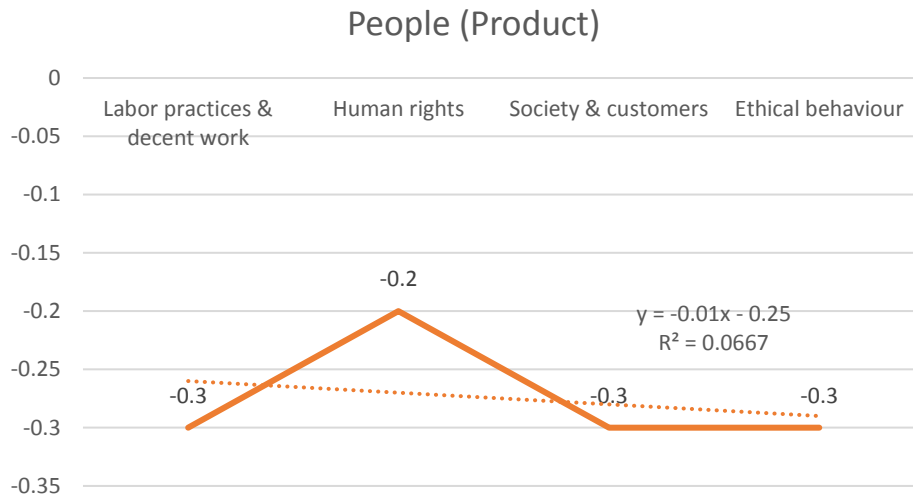


Figure 2: Min value for people based product criteria

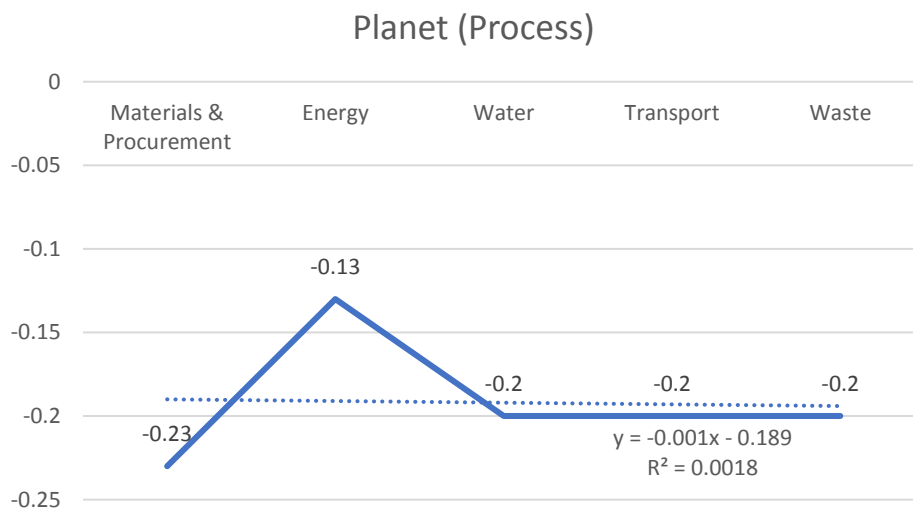


Figure 3: Min value for planet based process criteria

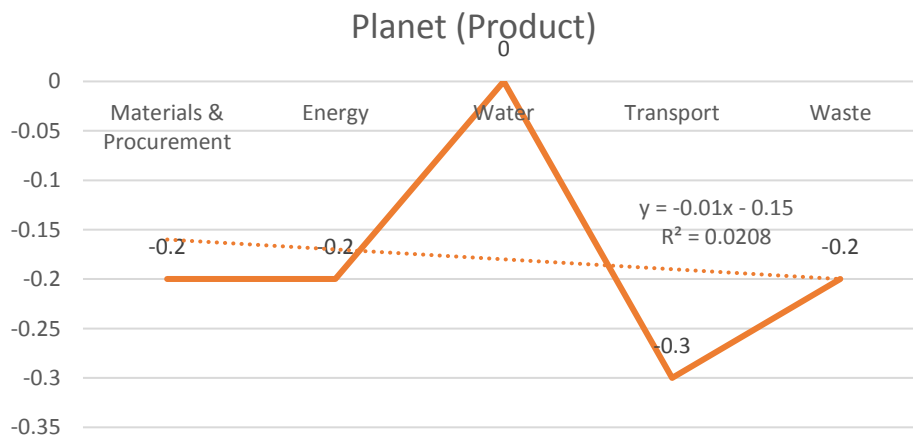


Figure 4: Min value for planet based product criteria

For the profit, both result from process and product show there is no vary between the data obtained where it's showed us that the level of compliance for this aspect is same for each company.

Mathematical Model Evaluation

In this step, a new mathematical model that based on P5 Integration is involved in assessing the input data. All crisp data that are gathered in step 3 are transformed and normalize using grey decision table. By principle, there is a point of neutral sustainability for every measured aspect of a system. In the measurement of sustainability, there is a tipping point where a system is either sustainable or unsustainable. When the balance of sustainability is tipped at this neutral point, the aspect of the system that is measured will be considered as either unsustainable or sustainable, depending on the direction of the tipping. The measurement scale of sustainability s with respect to the neutral point is as defined below.

$$s(x): \begin{cases} s(x) > 0 \text{ if sustainable} \\ s(x) = 0 \text{ if neutral sustainability} \\ s(x) < 0 \text{ if unsustainable} \end{cases} \quad (1)$$

The equation 1 will be used as one of the reference in order to measure the sustainability in the system.

Calculating Current Sustainability Index

This step is about the calculation of total current sustainability index which is the aggregate value of the five sustainability elements'; people, profit, planet, process, and product. The following Equation 1 and 3 is used to obtain the current value sustainability index.

$$I_j = \sum_i W_{ij} I_{ij} \quad (2)$$

where,

I_j = score of j th sustainability element,

W_{ij} = weight of i th sub sustainability element of j th sustainability element,

I_{ij} = score of i th sub sustainability element of j th sustainability element,

$i = 1, \dots, n$ index of sub sustainability elements,

$j = 1, \dots, m$ index of sustainability elements.

$$I_{sustainability} = \sum_j W_j I_j \quad (3)$$

where,

I_j = score of j th sustainability element,

W_j = weight of j th sustainability element,

$I_{sustainability}$ = total sustainability index.

Calculating Improved Sustainability Index

This section covers applying the decisions which are made in the previous step into the selected parameters, reassessing the analysis in the perspective of sustainability and obtaining new total sustainability index.

CONCLUSION

This study is expected to ease any organizations including an engineer or project managers in producing a better sustainability reporting based on GPM P5 integration without neglecting the major pillar of sustainability standard.

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DEVELOPMENT OF SYSTEMATIC SUSTAINABILITY ASSESSMENT (SSA) TOOL FOR ENVIRONMENTAL MANAGEMENT IN MALAYSIA HYDROELECTRIC PROJECT

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ABSTRACT

Nowadays, there are many significant impacts due to hydropower development such on society or community, environmentally and economically. These impact may go more seriously even across the nation. As one of the latest of hydropower development in Malaysia, the Tekai Project has been paying attention from the commencement stage in this research. To remain competitive to other industries in Malaysia such in manufacturing, automotive and other else, an implementation of sustainability is very important to growth their business performance. In addition, sustainability is vital to Bursa Malaysia Securities Berhad under their listing requirements. Therefore, this study aims to develop a sustainability assessment practice for hydropower sector in Malaysia context by referring to Department of Environment (DOE) requirement, Green Project Management (GPM) P5 concept and State Council guideline. The sustainability practice adopted in hydropower project generally follow GPM P5 concept which cover society (people), environmentally (planet), economically (profit) and also process and product viewpoint. As a result, a satisfactory from the state council or auditor to the project standard will be achieved. In addition, this study, will contribute a number of factors towards sustainability performance of hydropower sector in Malaysia including provide a sustainable integrated reporting toward the project and provide a new sustainability approach to project manager.

Keywords: Hydropower, Sustainability reporting

INTRODUCTION

In recent years, there has been an increasing interest in sustainability at many sector and project all over the world. The first serious discussions and analyses of Sustainability emerged during 1983 at new World Commission on Environment and Development (WCED) (K.Singh,2012) by Norwegian prime minister Gro Harlem Brundland. Then, after four years they release their own report about sustainability in 1987 (J.Kulman et al.,2013). The purpose of that report is to provide long-term environmental strategies, to define shared perceptions of long-term environmental issues and to concern into greater co-operation among developing countries and between countries at different stages of economic and social development that interrelationship between people, resources, environment and development (WCED,1987).

In Malaysia, Bursa Malaysia always encourage a sustainability idea as the key success of their business today. W. Stubbs et al., (2014) was surveyed the performance of sustainability at Malaysia. The majority of the companies in Malaysia which is 77%, only 40% embed a sustainability concept in their overall project or business. S. B. Thai et al. (2014) with their research on Companies that are listed in Bursa Malaysia review that predicting the business can help corporation or investors in prudent decision making either in term of financial, management and others. To remain competitive to other country in the world, Malaysia was prioritizing and limit number of key growth engines behind the support policy. Thus, the Economic Transformation Programme was announced in the Tenth Malaysia Plan (ETP) are focus on 12 National Key Economic Area (NKEAs) such in healthcare, Greater Kuala Lumpur/Klang Valley, Wholesale, Financial Services, Education, Palm oil & Gas, Business Services, Communication contents & Infrastructure, Oil & Gas (energy), Agriculture, Tourism and Electrical and Electronics (J. Perdana Menteri, 2010) . In this paper, hydropower as case study is under energy sector. Energy is an important main player towards Malaysia's economic growth which creating about 20 percent of the nation' Gross Domestic Product (GDP) (F. Kui et al., 2011).

Nowadays, most of company in Malaysia are practicing green at their project management. However, green practicing only covered up in environmental aspect without emphasize other important aspects. Thus, by incorporating a sustainability assessment problem, it is very important to increase the business's profit and to protect people and environment. From Sustainability assessment is a process of evaluation and optimization that aim to establishment the integration of sustainable development in governmental planning and a decision making processes across all parts ('Sustainability assessment Conceptual framework and basic', 2004). In the earlier of sustainability assessment that include in government planning process, the greater the policy design liberty and optimization scope, and it will be more effective. Since the sustainability assessment is very useful for many organization, therefore, many researcher have been develop tools that can claim for assessing sustainability and providing a better application guidelines, data and case study experiences. Since the sustainability assessment become associated with impact assessment tools that consisting of e.g. Environmental Impact Assessment and Strategic Environmental Assessment (Ness, Urbel-Piirsalu, Anderberg, & Olsson, 2007). The development of tool is very important to quantify the performance of the sustainability. From J.Voeten (Voeten, 2013) found that Elkington theory is incorporate a sustainability between three elements which are people, planet and profit and in GPM P5 other two viewpoint such process and product are included. The concept of GPM P5 such in Figure 1 below.

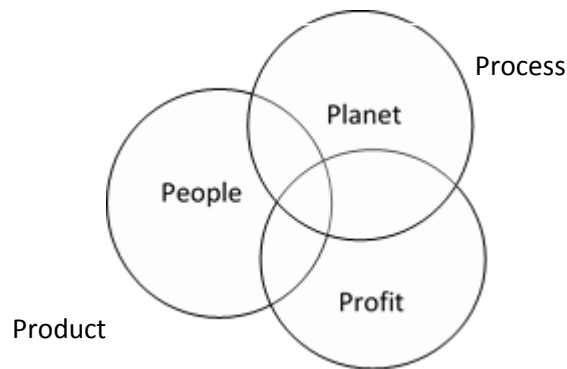


Figure 1: Sustainability concept of Green Project Management (GPM) P5
Source: Newman, Donald, Myers, & Brun, 2015

Since every company in Malaysia were registered under Bursa Malaysia, it is compulsory them to return the sustainability reporting of their business. Thus, Sustainability Assessment Tool is designed in advancing of sustainability reporting. At the same time to promote sustainable practices. Since, energy is important player in this country, this paper will focus on sustainability of energy sector at hydropower project by integrating the concept of Green Project Management (GPM) P5. Lastly, the study of Sustainability Assessment will provide an indicator to access the level of sustainability compliance in Hydropower sector.

In order to achieve an increasing demand of power energy from hydroelectric power capacity which the current usage is 1,882 MW and to more than 3,000 MW by 2020. But, the construction of hydropower system can lead an imbalances to ecosystems and landscape change. Thus, during the auditing the project or business is given a huge penalty because the qualitative of environment, social and economic effect can not be interpret or measure. Secondly, company under Bursa Malaysia were encourage to apply sustainability practice in their business competitive to others country. The investors in the auspices of Bursa Malaysia are also required to embed the sustainability concept at the forefront of their business especially in profitability. Lastly, the deliverable reporting is very important in every project or company and most of them deliver a sustainability report in separate assessment according to the process approaches or individual report. Therefore, there is a general objective of this study which is to develop a sustainability assessment tool for sustainability reporting while promoting the sustainability practices. The specific objectives of the proposed research are as follows:

- (a) To evaluate an existing environmental monitoring system of hydroelectric project in Malaysia using ANOVA.
- (b) To develop Sustainable Assessment Tool for environmental monitoring management based on GPM P5 approach

The scope for this study is applicable suit to Malaysia context and will implement the concept of Green Project Management (GPM) P5 at Hydropower dam. The data will be taken at Hydropower dam under Environmental monitoring management Project. There are specific parameter to be evaluate. The purpose for this monitoring is to improve an existing reporting and implement a sustainability concept to hydropower project by develop a sustainability assessment tool by generally refer to GPM P5 approach which integrate the people, planet, profit, product and process.

LITERATURE REVIEW

Sustainability

Nowadays, one of the biggest society's challenges is sustainability (Dobrovolskiene & Tamošiuniene, 2016). Sustainability is a concept that broadly used based on their mission and strategy by many companies in every sector (Dobrovolskiene & Tamošiuniene, 2016). Sustainability also one of the important challenges that are facing by the society. Since, most of the companies used that concept for their business practices. So it is linked with the project management in every their projects (Silvius & Schipper, 2014). There are three dimensions that are related to sustainability such environmental, economic and social (Martens & Carvalho, 2013). In the development of sustainable, there are some an initiatives on indicators and framework such from Warhurst (2002) viz. the measure of various areas can be improved through SDIs individually and assessing the aggregation of individual areas with respect to the respective dimension can be achieved towards sustainable development. Lancker and Nijkamp (2000) say that the indicator and states value was emphasize by “a given indicator doesn't say anything about sustainability, unless a reference value such as thresholds is given to it”. (Singh et al. 2012). To make a result of sustainability, the carefully integration of environmental, economic and social needs in the policy level. Environmental monitoring is one of the sustainability activity that can improve the quality of that company or project. So that, to characterise and assess environmental change and their potential impact whether positive or negative, the monitoring such measuring and recording environmental parameters were allowed (CEDA, 2015). In detail, Environmental monitoring are process to observe and study the environment by taking a systematic sample of air, water and biota (Weston, 2011). Thus, the preparation of Environmental Impact Assessment can be prepared. There are many monitoring program in many project such a sustainability of metric for waste to energy indicator framework (Tng, Teo, & Tang, 2016), monitoring for building (Wisene, 2013), in second Green power Development Project (Hydropower plant component) (Bank, 2014) and so on.

Green Project Management (GPM) P5

Other than that, United Nation Global Compact was create their effort to help individual or organization around the world to build their skill towards sustainability concept by introducing Green Project Management (GPM) P5 Standard tool. This GPM P5 is expand from the Triple Bottom Line (TBL) theory. This GPM P5 Tool is an integrating project management and sustainability indicator using matrix index which can provide wide framework for the broad context in every implementation (Newman, Donald, Myers, & Brun, 2015). It was developed in August 2011 (Carboni & Hodgkinson, 2013). The GPM P5 Standard may consider the life cycle of social, environment and economy perspective. During the project phase sustainability a process efficiency and product were considered including planning, product realization, designing and developing production and servicing (Paniagua Tufinio, Mooi, Ravestijn, Bakker, & Boorsma, 2013). To be clear, GPM P5 are integrated from 5P which are Planet, Profit, People, Product and Process. In addition, in 4th November 2011, Green Project Management (GPM) was registered and now, for 2016 GPM was receive an award as the world's largest organization of professional development in sustainability (*Page 1 of 35 1*, 2006). The success of this Organization refer to this statement that are using to their organization “The management of a project starts with the initiating process group

and finishes with the closing process group.” – ISO 21500 Guidance on Project Management Pg.11 (Carboni & Hodgkinson, 2013). Last but not least, P5 can be useful as the benchmarking that can help organizations to demonstrate the reality of their commitment to sustainability, thus it will give better understand to sustainable development (Paniagua Tufinio et al., 2013) and it is also practice into a Chinese Environment(Engineering & Thesis, 2014).

Hydropower

Green Project Management (GPM) P5 approach is using as my research reference to produce a Systematic Sustainable Assessment (SSA) tool. This SSA tool will be implement in hydroelectric project. Firstly, water is one essential elements of life and also utilize as sustainable source energy, worldwide (Fredericks, 2006). There are several research had been done by them that related to hydroelectric project such for Devoll Hydropower Project locate at a narrow gorge in the middle of Devoll Valley, Elbasan (S. Development & Management, 2013). DHP Environment and Social Management Plan was provide the document about this Devoll Hydropower project. It is to give an overview for mitigation measure to be taken and to consolidates and analyse result and surveys that already done during the pre-construction of the project (S. Development & Management, 2013). Next, WCS Canada Conservation Report was reported the “potential impacts and risks of proposed next generation hydroelectric dams on fish and fish habitat in Yukon water”. This report was summarise the major risk on the habitat and provide the guideline and information on the scope of that impacts and risk to Yukon communities and citizens and the article about impact habitat to the infrastructure of hydroelectric dam and how it can be monitor in several state (Reid, 2015)(Highland & Limited, 2015)(Harwood & Ganshorn, 2013). Next, Keyal Khwar Hydropower project also review the feasibility study about this project (Olume, 2007). The parameter characterizing is an important element to evaluate their usefulness while doing river monitoring system, programme and their practice examples (Szozkiewicz, Budka, Pietruczuk, Kayzer, & Gebler, 2016)(“Chapter 3 - Designing A Monitoring Programme,” 1996)(S. H. Development, 2013). From Department of Electricity Development, HMG Nepal, they already come out with manual to prepare Environmental Management Plan (EMP) for Hydropower Project. They used an Environmental Impact Assessment (EIA) tools to achieve their goal in sustainable development (Sector & Development, n.d.)(Bank, 2014). Other than that, in Brazil they Monitor the hydroelectric reservoir by using System for environmental monitoring (SIMA) (Curtarelli, Ogashawara, & Souza, 2013). From book that publish from U.S Department of the Interior Bureau of Reclamation Power Resources Office (July 2005) explain about how hydropower works and so on. Next, the 5th Concept symposium on Project Governance at Canada also discuss about a participation of sustainability approach in large hydroelectric project (Environment, 2012). There are many analysis of hydropower and their effect on different state such in Karnataka (India), Canada, Nam Ngum dam Mekong (Laos) (Harwood & Ganshorn, 2013)(Joens, 2012)(“Nam Ngum 5 Hydropower Project,” 2007). In Malaysia context, there are several hydropower project had been monitor such at Bakun Hydroelectric Project, Sarawak (Manager, 2004). This monitoring and developing should be refer to the procedure and requirements in Malaysia based on Environmental Impact Assessment (EIA) guideline (“Environmental Impact Procedure and Requirements in Department of Environment,” 1990.).

CONCLUSION

The quantitative assessment of changes in project sustainability especially in hydropower sector, regional and global level facilitates the information analysis and decision making process. From this Systematic Sustainability Assessment (SSA) Tool will improve the project and business performance. Thus, will reduce the penalty cost from enforcer and also sustain an integrated report that focus on Profit, people, planet, process and product by facilitate Sustainability reporting (SR) according to International Hydropower Association (IHA) and Department of Environment (DOE) in Malaysia context .

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ISO 37001: ANTI-BRIBERY MANAGEMENT SYSTEM- BENEFITS AND IMPLEMENTATION

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ABSTRACT

Anti-Bribery Management System was first introduced in Malaysia in 15th October 2016. Before this, other countries such as United Kingdom and the United States have come out with the act. The UK Bribery Act, 2010 was passed on 8 April 2010 and was enforced on 1 July 2011 and the US Foreign Corrupt Practices Act, was enacted in 1977 and was amended in 1988. This paper will discuss the purpose of ISO 37001, what an organization should have to implement the system and what are the benefits that can be gained from the implementation.

Keywords: ISO 37001, Anti-bribery management system

INTRODUCTION

Bribery is a serious issue of our time. Realizing the fact that bribery has become one of the world most common problems, every effort has been taken into consideration in fighting this crime. Organization all over the world are facing the same risk, whether they are directly or indirectly involved with this kind of crime. This paper will give an overview on the need of an assessment

of the system in place in an organization that can help reduce the risk of bribery and help organizations deal with it.

In the UK, starting from 2011, the Bribery Act 2010 has replaced the existing UK bribery laws, and has introduced a new offence of "failure of commercial organizations to prevent bribery". UK has issued BS 10500:2011 Specification for an anti-bribery management system (ABMS). Organizations now have to prove that it had adequate procedures in place to prevent bribery together with their clients, agents, joint venture partners, and major sub-contractors, suppliers and consultants. Numerous companies had successfully adopted this standard as an adequate anti-bribery measures.

According to Transparency International Study in 2011, 27% of the 3016 business people surveyed across 30 countries reported that they had lost business due to bribery by their competitors. Damages caused by bribery to countries, organizations and individuals lowers economic growth, discourages investment, marginalizes and restricts global markets, erodes support for economic aid, puts a heavy economic burden on the poor and lowers the standard of living of the people. (Gasiorowski-Denis, E, 2014).

The Global Economic Crime Survey 2016 (Malaysia report), reported that almost 98% of companies surveyed make it clear to staff that bribery and corruption are unacceptable. Yet it reported that incidents of bribery and corruption increase from 19% (2014) to 30% (2016). Bribery and corruption incidences are on the rise, amidst an increasingly complicated risk landscape. While such economic crime risks are increasing in complexity, Malaysian companies are not evolving fast enough to mitigate them. Following the above report, Mr. Alex Tan, Senior Executive Director and Forensic Lead, PwC Consulting Associates (M) Sdn Bhd. Mentioned: "At the speed with which the risk landscape is evolving, combating rampant economic crimes can no longer be the sole responsibility of a person or team, it must be embedded within the whole organizational culture" (Thesundaily, 24 June 2016).

Thus, it is important that ethics and integrity be embedded and integrated in the organization's policies and way of doing things.

DEFINITION OF BRIBERY

Bribery is the offering, promising, giving accepting or soliciting of an undue advantage of by value (which could be financial or non- financial), directly or indirectly or indirectly, and irrespective of location(s), in violation of applicable law, as an inducement or reward for a person acting or refraining from acting in relation to the performance of that person's duties. (ISO37001 Standard) According to Transparency International, corruption is the abuse of entrusted power for private gain. It can be classified as grand, petty and political, depending on the amounts of money lost and the sector where it occurs. Thus it can be said that bribery is a subset of Corruption.

Bribery and corruption is a growing concern for businesses in all sectors and jurisdictions. Corruption is a problem not only from an ethical and competition-distorting perspective, but also because of the substantial risk it creates to the reputation of affected businesses and the potential financial implications of a conviction, or even just the adverse publicity of an allegation or investigation.

The increase in enforcement of national and international bribery and corruption legislation means businesses must demonstrate compliance. Due to its complexities, this can be a challenging area for businesses to address. Therefore, many organizations have come out with standard in order to comply with their nation and country's legislative.

PREVIOUS MATERIALS ON ANTI BRIBERY MANAGEMENT SYSTEM

Anti-Bribery issues have been discussed widely. This section will discuss some of the ISOs, Standards and guidelines issued to date.

Business Principles for Countering Bribery

This business principle provides a framework for companies to develop comprehensive anti-bribery programs based on continuing risk assessment. It was first introduced in 2003 and the initiative was led by Transparency International. It covers issues on bribes and business relationships.

Good Practice Guidance on Internal Controls, Ethics and Compliance

The Working Group on Bribery in International Business Transactions held one of its regular consultations with the private sector and civil society on 13 October 2011 in Paris in keeping with the 2009 Anti -Bribery Recommendations. Idea was initiated in OECD (Organization for Economic Co-operation and Development) Anti- Bribery Convention. The Working Group must regularly engage the private sector and civil society on issues related to the fight against foreign bribery. It provides guidance on the types of good practices such as adoption of an effective internal controls, ethics and compliance. Also provides guidance regarding third party's due diligence.

Guidelines for Multinational Enterprise

First initiated in 2011 by OECD. The OECD Guidelines for Multinational Enterprises (the Guidelines) comprise a set of voluntary principles and standards for responsible business conduct, in a variety of areas including human rights, disclosure, employment and industrial relations, environment, combating bribery, consumer interests, science and technology, competition, and taxation.

Integrity Compliance Guidelines

First initiated in 2010 by World Bank Group. The guidelines incorporate standards, principles and components commonly recognized by many institutions and entities as good governance and anti-fraud and corruption practices.

Principles of Countering Bribery (PACI)

PACI Principles was first initiated in 2005 by a multinational task force of companies during the World Economic Forum. Transparency International and Basel Institute on Governance also assisted in its formulation. It provides a framework for good business practices and risk management strategies for countering bribery. It is intended to assist enterprise to:

1. Eliminate bribery.
2. Demonstrate their commitment to countering bribery.
3. Make a positive contribution to improve business standard of integrity, transparency and accountability wherever they operate.

The enterprise shall prohibit bribery and commit to the continuation or implementation of an effective program to counter bribery.

Rules on Combating Corruption

Was first published in 1977 and revised in 2011. It is initiated by the International Chamber of Commerce. It covers bribery of public officials, including at international level, bribery of a political party, party official or candidate, bribery of a director, officer, employee or agent of a private enterprise; extortion; solicitation; facilitation payments, agent and other intermediaries, joint ventures and outsourcing agreements.

APEC (Asia-Pacific Economic Cooperation) Anti-Corruption Code of Conduct

First initiated in 2007. These code is for all APEC Members, which covers bribery in any form and see the need to develop program articulating values, policies and procedures for preventing bribery in all activities under enterprise’s effective control.

UN (United Nations) Convention against Corruption (UNCAC)

First initiated in 2005. It calls on the private sector to play an active role in preventing corruption. The summary of the Act, standards and Guidelines can be seen in Table 1.

ISO 37001 ANTI-BRIBERY MANAGEMENT SYSTEM

ISO has issued an Anti-Bribery Management System standard (ISO 37001) in October 2016 for the purpose of assisting organizations to prevent, detect, and address bribery towards better ethical business culture. It is designed to help an organization establish, implement, maintain, and improve an anti-bribery compliance program. It can help organization to implement an anti-bribery management system, or enhance the controls currently in place. It helps to reduce the risk of bribery occurring and can demonstrate to stakeholders that an internationally recognized good-practice anti-bribery controls have been adopted.

Table 1: Overview of materials on anti-bribery management system

Name of instrument	Year of adoption or revision	Scope	Adopted or produced by
Business Principles for Countering Bribery http://www.transparency.org/globalpriorities/private-sector/business-principles	First ed. 2003 2 nd ed. 2009 (lights revisions) The Business Principles for Countering Bribery, SME Edition, revised in 2013	Covers bribes; political contribution; charitable contributions and sponsorships, facilitation payments, gifts, hospitality and expenses Cover business relationships; human resources, training; seeking guidance; communications; internal controls and record keeping; monitoring and review; external verification and assurance 2013 edition also includes clauses and revised language on topic such as risk assessment, conflict of interest, co-operation with authorities, facilitation payment, lobbyists and communication and reporting.	Multi-stakeholder group led by Transparency International (TI)
Good Practice Guidance on Internal Controls, Ethics and Compliance http://www.oecd.org/dataoecd/5/51/44884389.pdf	2010	Supply-side of bribery of foreign public officials, but could be adapted to bribery in general. Provides guidance on types of good practices that should be adopted for effective internal controls, ethics and compliance, such as regarding gifts, hospitality, entertainment and expenses, customer travel, political contributions, charitable donations, facilitation payments; and solicitation and extortion. Provides guidance regarding third-party due diligence, financial and accounting procedures, communication and training, disciplinary procedures; incentives; business partners; periodic reviews, actions by business association and professional organizations.	40 State Parties to OECD Anti-Bribery Convention
Guidelines for Multinational Enterprises – Part VII on ‘Combating Bribery, Bribe Solicitation and Extortion’ http://www.oecd.org/dataoecd/43/29/48004323.pdf	2011	Bribery of public officials and private sector business partners No use of third parties, including business partners, to channel bribe payments Adequate internal controls, ethics and compliance program for preventing and detecting bribery, based on regular risk assessment, including employee awareness. Prohibition or discouragement by companies of small facilitation payments Due diligence for hiring of agents Transparency and public commitment No illegal contributions to candidates for public office or political parties or organizations	42 Governments; OECD

Integrity Compliance Guidelines http://siteresources.worldbank.org/INTDOII/Resources/Integrity Compliance Guidelines.pdf	2010	Incorporate standards, principles and components commonly recognized by many institutions and entities as good governance and anti-fraud and corruption practices. Rules regarding risk assessment, internal policies (including due diligence, arrangements with former public officials, gifts and expenses, political and charitable contributions and facilitation payments), responsibilities of management, business partners, internal controls, training and communication, incentives, reporting, remediation and collective action.	World Bank Group
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Table 1: Overview of materials on anti bribery management system (continue)

Name of instrument	Year of adoption or revision	Scope	Adopted or produced by
Principles of Countering Bribery https://members.weforum.org/pdf/paci/principles short.pdf	2005	Covers bribery of public officials, political candidates, parties or party officials, or any private sector employee Implementation of effective program to counter bribery; risk assessment Principles regarding political contributions, charitable contributions and sponsorships, facilitation payments, gifts, hospitality and expenses, responsibilities of board of directors, etc.; business relationships, human resources, training, seeking guidance, communication, internal controls and audit; monitoring and review.	Developed by multinational task force of companies with the World Economic Forum’s Partnering against Corruption Initiative (PACI), TI and Basel Institute on Governance
Rules on Combating Corruption http://www.iccwbo.org/advocacy-codes-and-rules/areas-of-work/corporate-responsibility-and-anti-corruption/ICC-Rules-on-Combating-Corruption/	2011 ed. (first published in 1977)	Covers bribery of public officials, including at international level, bribery of a political party, party official or candidate, bribery of a director, officer, employee or agent of a private enterprise; extortion; solicitation; facilitation payments, agent and other intermediaries, joint ventures and outsourcing agreements Rules regarding corporate policies, financial recording and auditing; responsibilities of board of directors, audit committee; follow-up and promotion of rules.	International Chamber of Commerce [ICC]
APEC Anti-Corruption Code of Conduct 2007 for Business http://www.apec.org/Groups/SOM-Steering-Committee-on-Economic-and-Technical-Cooperation/Task-Groups/~/_media/Files/Groups/ACT/07_act_code brochure.ashx		Covers bribery in any form Need to develop program articulating values, policies and procedures for preventing bribery in all activities under enterprise’s effective control Also covers charitable donations; gifts, hospitality and expenses; facilitation payments; political contributions; business relationships; communication; leadership; financial recording and auditing; human resources; monitoring and review; seeking guidance; training; organizations and responsibilities	APEC member economies
UN Convention against Corruption (UN2005) http://www.unodc.org/unodc/en/treaties/CAC/		Article 12 calls on the private sector to play an active role in the prevention of corruption	

Source: Anti-Corruption Ethics and Compliance Handbook for Business, OECD, UNODC, World Bank (2013).

Anti-Bribery Management System may benefit an organization by providing:

1. Minimum requirements and supporting guidance for implementing or benchmarking an anti-bribery management system;
2. Assurance to management, investors, employees, customers, and other stakeholders that an organization is taking reasonable steps to prevent bribery risk;
3. Evidence in the event of an investigation that an organization has taken reasonable steps to prevent bribery.

Anti-Bribery Management System includes an internationally agreed series of measures and controls that represent global anti-corruption good practice which organizations should implement to prevent and detect bribery. These include adopting an anti-bribery policy, appointing a person to oversee anti-bribery compliance, training, risk assessments and due diligence on projects and business associates, implementing financial and commercial controls, and instituting reporting and investigation procedures. Organization must implement these measures in a reasonable and proportionate manner.

ISO 37001 Anti-Bribery Management System Standards is one of the latest initiatives introduced by the government. This ISO is applicable to assist an organization to measure the anti-corruption system control in existence within an organization, and it will also assist organizations to implement management systems that are effective in preventing, detecting and dealing with corruption and abuses. As reported by Bernama (May 17, 2016), Malaysian Qualifications Agency is the first agency in Malaysia to be evaluated and monitored under ISO 37001. Autonomy given to institutions of higher learning should also be looked at in the light of governance and integrity issues.

The ISO standard specifies the requirements and provides guidance to the organizations on establishing, implementing, maintaining, reviewing and improving an anti-bribery management system. This system can be a system by itself or can be integrated into an overall management system. Examples of bribery which is covered by the standard are:

1. Bribery in the public, private and not-for-profit sectors;
2. Bribery by the organization;
3. Bribery by the organization's personnel acting on the organization's behalf or for its benefit;
4. Bribery by the organization's business associates acting on the organization's behalf or for its benefit;
5. Bribery of the organization;
6. Bribery of the organization's personnel in relation to the organization's activities;
7. Bribery of the organization's business associates in relation to the organization's activities;
8. Direct and indirect bribery (e.g. a bribe offered or accepted through or by a third party).

ISO 37001 is applicable only to bribery. It sets out requirements and provides guidance for a management system designed to help an organization to prevent, detect and respond to bribery and comply with anti-bribery laws and voluntary commitments applicable to its activities.

This ISO does not specifically address fraud, cartels and other anti-trust/competition offences, money-laundering or other activities related to corrupt practices, although an organization can choose to extend the scope of the management system to include such activities.

The requirements of this document are generic and are intended to be applicable to all organizations (or parts of an organization), regardless of type, size and nature of activity, and whether in the public, private or not-for-profit sectors.

THE IMPLEMENTATION OF ANTI-BRIBERY MANAGEMENT SYSTEM

Previous research has shown (Manhuwa & Stansburry) that the anti-bribery policy and management system will help the organization to avoid or reduce the costs, risks and damage from involvement in bribery, promote trust and confidence in business dealings and enhance the organization's reputation. The standards set out what an organization can do to establish the ISO 37001 such as follows:

1. Define an anti-bribery policy and program for your organization
2. Communicate the policy and program to all stakeholders, ranging from employees to business associates such as suppliers, shareholders, investors, consultants, etc.
3. Appoint a compliance manager to supervise the program
4. Provide anti-bribery training to staff
5. Assess bribery risks, including appropriate due diligence
6. Take reasonable and proportionate steps to ensure that controlled organizations and business associates have implemented appropriate anti-bribery controls. This applies for example to your supply chain.
7. Verify as far as reasonably possible that staff will comply with the anti-bribery policy
8. Verify that gifts, hospitality, donations and similar benefits comply with the policy
9. Implement appropriate financial, procurement and other commercial controls so as to help prevent the risk of bribery
10. Implement reporting and whistle-blowing procedures
11. Investigate and deal appropriately with any actual or suspected bribery

According to KM Loi, Deputy President of Transparency International Malaysia, Top Level Commitment need to introduce 3 issues in the implementation of ABMS and they are: (i) Policies and Procedures; (ii) Proactive and (iii) Reactive as shown in Figure 1 and Table 2.

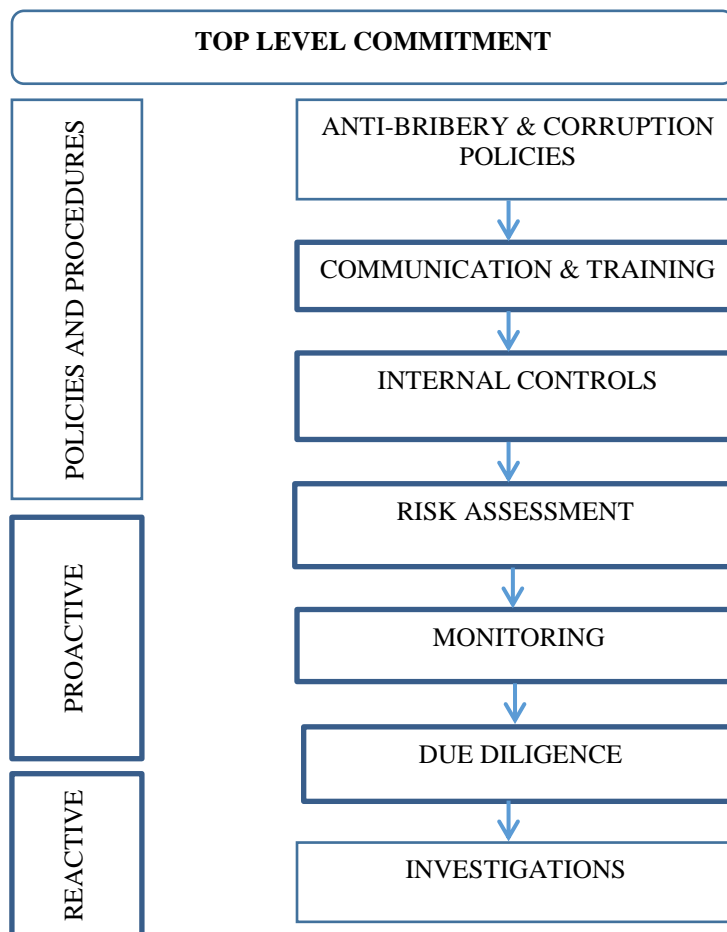


Figure 1: Guiding principles for ABMS

Source: Kheng Meng Loi , ISO 37001:2016 Anti-Bribery Management System Overview

Table 2: Principles and initiatives of ABMS

Principles	Initiatives – Some examples
Top level commitment	Setting tone at the top through policies and procedures Proactively identifying bribery risk and monitoring internal controls to prevent, detect and respond fraud risks Developing monitoring mechanism
ABMS policies	Code of Conduct Whistle Blowing Process Anti-Bribery & Corruption Policy Gifts, hospitality, donations and similar benefits policy
Communications and training	Internal and External Communications Education, Training and Awareness

Table 2: Principles and initiatives of ABMS (continued)

Principles	Initiatives – some examples
Internal Controls & SOPs	Financial and Non-Financial Controls Anti-bribery contract terms Procurement procedures
Risk assessment	Conduct Risk Analysis & Evaluation
Monitoring, enforcement & review	Auditing the process and procedures Measurement, Analysis & Evaluation Investigating and dealing with bribery Managing inadequacy of ABMS controls
Due diligence	Conduct High-Level Understanding of Operations Identify potential red flags
Investigations	Internal Controls and External Monitoring trigger investigation Response to investigation

Source: Kheng Meng Loi, ISO 37001:2016 – Anti-Bribery Management System Overview

CONCLUSION

This paper discussed the various standards and guidelines that are issued on anti-bribery. It also discusses the new international standard, ISO 37001, its benefits, its implementation, to whom is it applicable to, its guiding principles, and its core components.

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INISIATIF MENGURANGKAN KETIRISAN HASIL BAHAN BATUAN

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ABSTRAK

Beberapa masalah telah dikenalpasti sehingga berlakunya ketirisan hasil bahan batuan di pentadbiran tanah Pekan. Masalah ini berlaku kerana wujudnya ruang dan peluang kepada pemegang permit atau pengusaha yang tidak jujur untuk melakukan penipuan. Mengambil kira polisi perkhidmatan awam yang kejut dan usaha-usaha untuk mengoptimumkan perbelanjaan kerajaan, PDT Pekan telah memperkenalkan Sistem Check Point yang dilaksanakan secara kreatif dan inovatif agar dapat mencapai hasil atau produktiviti yang tinggi berdasarkan sumber manusia yang sedia ada. Kertas ini ditulis bertujuan menganalisa masalah-masalah yang dihadapi dan menilai keberkesanan kaedah penyelesaian yang telah dilaksanakan.

Kata kunci: Ketirisan hasil, integriti, bahan batuan

PENGENALAN

Laporan Ketua Audit Negara Siri 2 Tahun 2013 mendapati pengurusan pengeluaran bahan batuan bagi Negeri Pahang adalah memuaskan dari segi prestasi kutipan hasil. Hasil sebenar yang dikutip melebihi sasaran yang ditetapkan. Bagaimanapun, masih terdapat kelemahan yang menyebabkan matlamat untuk meningkatkan hasil tidak tercapai sepenuhnya. Hasil pengauditan mendapati pengusaha tidak mencatatkan di dalam tiket muatan sebenar bahan batuan yang diangkut. Pengusaha juga gagal mematuhi syarat yang ditetapkan dalam lesen dan permit sehingga memberi impak kepada alam sekitar serta orang awam. Aktiviti pemantauan dan penguatkuasaan tidak dapat dilaksanakan oleh Pejabat Daerah dan Tanah dengan berkesan disebabkan kekurangan kakitangan, beban tugas serta kekurangan kenderaan. Berikut adalah prestasi kutipan hasil megikut daerah dari tahun 2011 hingga 2013. Jadual 1 menunjukkan prestasi kutipan hasil mengikut daerah dari tahun 2011 hingga 2013.

Sebagaimana yang diperuntukkan dalam Seksyen 42(1) Kanun Tanah Negara (KTN) 1965, pemberian permit untuk mengeluarkan, mengambil dan mengangkut bahan batuan dalam Borang 4C adalah salah satu daripada pelbagai cara Pihak Berkuasa Negeri melupuskan tanah. Seksyen 70 KTN memperuntukkan bahawa permit untuk mengeluarkan, mengambil dan mengangkut bahan batuan boleh dikeluarkan bagi mana-mana tanah berikut:

- a) Tanah kerajaan
- b) Tanah milik
- c) Tanah lombong
- d) Tanah rizab

Jadual 1: Prestasi kutipan hasil mengikut daerah dari tahun 2011 hingga 2013

Bil	PDT/PTG	Tahun			Jumlah (RM Juta)
		2011 (RM Juta)	2012 (RM Juta)	2013 (RM Juta)	
1.	Kuantan	12.51	11.90	13.26	37.67
2.	Pekan	1.12	2.14	2.01	5.27
3.	Rompin	1.60	1.63	0.63	3.86
4.	Temerloh	1.33	1.27	1.20	3.80
5.	Jerantut	0.97	1.39	1.43	3.79
6.	Bera	0.94	0.94	0.92	2.80
7.	Bentong	0.84	0.64	0.76	2.24
8.	Lipis	0.37	0.57	0.62	1.56
9.	Raub	0.45	0.49	0.02	0.96
10.	Cameron Highlands	0.26	0.45	0.30	0.71
11.	Maran	0.06	0.11	0.16	0.33
12.	PTG	0.12	0.02	0.05	0.19

Sumber: Pejabat Tanah dan Galian Pahang

Pasir sungai adalah bahan batuan utama yang menyumbang kepada 90% kutipan royalti bahan batuan daerah Pekan. Pada tahun 2014 sebanyak 42 permit dikeluarkan dan pada tahun 2015, ia meningkat kepada 48 permit. Seterusnya pd 2016, sebanyak 54 permit dikeluarkan. Sungguhpun begitu, didapati hanya 12 pemegang permit yang aktif manakala yang lain hanya memperbaharui lesen tetapi tiada sebarang operasi pengeluaran di tapak.

Satu kes yang dipetik daripada kajian Noraida Harun, Jady @ Zaidi Hassim & Noor 'Ashikin Hamid (2013) iaitu seorang bapa dan anak lelakinya mengaku tidak bersalah di Mahkamah Sesyen terhadap empat tuduhan merasuah sejumlah RM 29, 000 kepada seorang pegawai Pejabat Tanah dan Galian (PTG) pada 11 Disember 2010. Suapan itu sebagai dorongan untuk tidak mengambil tindakan undang undang terhadap mereka kerana menggunakan doket pengeluaran pasir yang tidak sah, satu kesalahan mengikut Seksyen 426(1) KTN.19.

Dalam kajian yang sama, penulis juga telah mengetengahkan kes seorang Penolong Pegawai Tanah yang ditangkap dalam operasi khas Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) pada tahun 2010, dihukum penjara tiga bulan dan denda RM10 000 selepas disabitkan bersalah bersetuju meminta suapan daripada pengusaha pasir. Tertuduh yang merupakan kakitangan kerajaan gred NT27 di Pejabat Daerah dan Tanah, Hulu Langat, didakwa meminta wang tunai RM 2,000 sebagai dorongan untuk tertuduh tidak mengambil tindakan undang-undang terhadap kerja pengeluaran pasir tanpa permit di Jalan Sungai Lui, Hulu Langat. Bagi kesalahan itu, dia didakwa mengikut Seksyen 16 (a) (B) Akta Suruhanjaya Pencegah Rasuah Malaysia yang memperuntukkan hukuman di bawah Seksyen 24 akta sama, yang membawa hukuman penjara maksimum 20 tahun dan denda RM10 000 atau lima kali nilai suapan, yang mana lebih tinggi.

Terbaru, tiga lelaki termasuk seorang kakitangan awam ditahan Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) kerana dipercayai terlibat melindungi kegiatan pencurian pasir di sekitar Sungai Pahang. Mengikut anggaran Pejabat Tanah dan Galian Pahang, kerajaan negeri Pahang mengalami kerugian hampir RM180,000 sebulan disebabkan kes kecurian pasir ini yang didakwa beroperasi sejak pertengahan tahun 2014 hingga sekarang. Mereka menggunakan doket (borang pengeluaran bahan mineral) yang sama untuk muatan serta perjalanan yang berganda bagi mengelak cukai yang perlu dibayar kepada pejabat tanah dan daerah. Hasil siasatan mendapati kewujudan satu sindiket yang lain bagi melindungi lori-lori lebih muatan dengan penggunaan pelekat kenderaan tertentu sebagai isyarat kepada penguatkuasa tertentu.

Sungguhpun begitu, kedudukan Malaysia dalam Indeks Persepsi Rasuah 2015 dunia telah menurun sebanyak empat mata kepada 54, berbanding 50 pada 2014. Transparency International (TI) meletakkan Malaysia di belakang negara membangun seperti Bhutan (27), Botswana (28), Jordan (45), Namibia (45) dan Rwanda (44). Kedudukan negara juga jatuh dua mata kepada 50 pada 2015 daripada 52 pada 2014. Malaysia juga termasuk dalam senarai negara yang mempunyai skor menurun tetapi masih kedua tertinggi di Asia Tenggara. Negara jiran, Singapura di kedudukan kelapan dengan (85 mata), Thailand dikedudukan 76 (38 mata) manakala Indonesia dikedudukan ke-88 (36 mata). Berdasarkan CPI, skor 0 bermakna “sangat rasuah” manakala 100 dianggap sangat bersih. Indeks itu meletakkan ranking kepada negara berdasarkan tahap persepsi rasuah dalam sektor awam. Ia berasaskan gabungan beberapa tinjauan dan penilaian rasuah yang dikumpul pelbagai institusi bereputasi.

Jika dirujuk Bab 7 Pelan Hala Tuju Program Transformasi Kerajaan, salah satu bidang yang akan diberikan tumpuan ialah agensi pengawalseliaan dan penguatkuasaan. Pelan ini juga menyatakan bahawa keberkesanan agensi penguatkuasaan Malaysia telah mendapat perhatian apabila tahap jenayah dan kegiatan terhadap kesalahan yang jelas (contohnya kenderaan lebih muatan, kemasukan pendatang tanpa izin) terus mencatat peningkatan. Dasar dan tatacara sememangnya telah diwujudkan untuk memastikan agensi-agensi tersebut memenuhi amalan terbaik. Walau bagaimanapun, terdapat kekurangan pemantauan kepatuhan yang jelas dan pengurusan konsekuensi yang membawa kepada amalan rasuah yang tersebar luas. Agensi-agensi penguatkuasaan ini memaklumkan jabatan memerlukan lebih banyak sumber untuk meningkatkan keberkesanan keseluruhan agensi masing-masing.

MASALAH

Dalam aspek penguatkuasaan ke atas permit pasir, PDT Pekan menjalankan rondaan ke pusat pengeluaran pasir yang aktif. Sehingga kini, terdapat 10 pusat pengeluaran pasir yang masih aktif. Dahulunya, *Check point* hanya diwujudkan apabila terdapat projek-projek mega yang akan dilaksanakan contohnya projek Taman Industri Automotif Pekan, pembinaan Jalan Kuantan-Pekan dan Taman Industri Minyak, Gas dan Maritim Tanjung Agas.

Penggunaan Docket

Masalah utama yang dihadapi dalam memantau pengeluaran pasir ialah penggunaan docket yang sama berulang kali oleh pengusaha pengeluaran pasir dan pemandu lori. Docket sepatutnya

dilengkapkan dengan tarikh dan masa oleh pengusaha pusat pengeluaran pasir dan diserahkan kepada pemandu lori untuk dipamerkan. Walau bagaimanapun, keadaan sebenar yang berlaku di lapangan ialah pengusaha pengeluaran pasir menyerahkan doket kosong kepada pemandu lori. Pemandu lori hanya akan melengkapkan tarikh dan masa sejeurus sebelum diperiksa oleh pegawai penguatkuasa PDT Pekan. Sekiranya tiada pemeriksaan, doket yang sama ini akan digunakan berulang kali untuk trip perjalanan yang seterusnya. Berdasarkan temubual tidak formal dengan pemandu-pemandu lori, mereka mengakui pernah menggunakan doket yang sama bagi tempoh seminggu.

Masalah ini bukanlah masalah yang asing bagi Pejabat Tanah. Kerajaan Negeri Selangor melalui kenyataan dalam Sinar Harian pada 5 April 2016, memaklumkan bahawa pentadbiran negeri sedang membangunkan sistem penggunaan doket secara elektronik iaitu E-Doket. Sebelum itu, kerajaan negeri juga telah menyelaraskan dan menyeragamkan format dan maklumat doket pasir yang dikeluarkan pada setiap Pejabat Tanah mulai 1 Januari 2016 lalu yang mempunyai ciri keselamatan yang lebih baik.

Penggunaan ‘Magic pen’

Kedua, berlaku juga penggunaan *magic pen* yang tulisannya boleh hilang apabila dikenakan haba di bahagian belakang helaian doket. Kedua-dua masalah ini berlaku kerana wujudnya ruang dan peluang kepada pemegang permit atau pengusaha yang tidak jujur untuk melakukan penipuan dalam penggunaan doket. Maka tidak hairanlah jika kita dapati pelbagai kaedah telah diperkenalkan oleh kerajaan negeri bagi memantau ketirisan royalti pasir. Kerajaan Negeri Perak umpamanya telah menubuhkan Pusat Pemantauan ‘Command Centre’ yang diletakkan di bawah seliaan Perbadanan Menteri Besar (MB Inc) melalui Pengurusan Pasir Perak (3P).

Pusat ini berperanan memantau semua kawasan pengambilan pasir di seluruh negeri menggunakan dron yang disambung ke pusat operasi di sini. Laporan Audit Negara telah mengiktiraf Pengurusan Pasir Perak sebagai salah satu daripada model yang terbaik untuk diaplikasikan oleh negeri-negeri lain. Walau bagaimanapun, mengambilkira kekangan kewangan kerajaan negeri, PDT Pekan tidak dapat mengaplikasikan model ini sebaliknya menggunakan pendekatan yang lebih murah dan mudah tetapi dengan hasil yang lebih memberangsangkan.

Logistik Dan Sumber Manusia

Ketiga, PDT Pekan juga menghadapi masalah kekurangan kenderaan. Bagi tujuan penguatkuasaan tanah, Unit Kuatkuasa dibekalkan dengan sebuah kenderaan pacuan empat roda yang boleh memuatkan 5 orang anggota termasuk pemandu. Unit Kuatkuasa dianggotai oleh 3 orang Penolong Pegawai Tanah dan 10 orang Pembantu Operasi. Dengan hanya sebuah kenderaan, Unit Kuatkuasa perlu membuat pemantauan di semua pusat pengeluaran pasir yang aktif sepanjang Sungai Pahang dengan jarak lebih kurang 140 km. Kenderaan tersebut adalah kenderaan lama yang disumbangkan oleh kerajaan negeri bagi memperkemas aspek penguatkuasaan. Pada masa yang sama, unit ini juga bertanggungjawab menyiasat aduan pencerobohan tanah kerajaan dan pelanggaran syarat tanah yang meliputi keluasan sebanyak 380,500 hektar atau 3,805 kilometer persegi.

PENYELESAIAN MASALAH

Semasa ucapan sempena Majlis Anugerah Inovasi Sektor Awam (AISA) 2015 pada 16 Disember 2015 di Putrajaya, Ketua Setiausaha Negara menyatakan bahawa penciptaan inovasi boleh dihasilkan dalam lingkungan organisasi dengan adanya penglibatan aktif dan berterusan daripada komuniti setempat, NGO atau kumpulan sasar yang ingin didekati. Pendekatan ini perlu dipraktikkan dengan sebaiknya, kerana pembudayaan inovasi bukan sahaja melibatkan satu pihak sahaja malah ia melibatkan pihak berkepentingan yang lain. Beliau juga berpandangan inovasi yang ingin dihasilkan juga perlu sejajar dengan penerapan budaya cari dan bantu atau *search and serve*. Beliau menambah bahawa penjawat awam pada masa kini perlu lebih kerap turun padang dan menawarkan perkhidmatan kepada rakyat sejajar dengan konsep merakatkan perkhidmatan awam.

Mengambil pendekatan bahawa sesebuah rekacipta dan inovasi itu tidak semestinya satu proses atau produk yang mahal, mulai tahun 2016, PDT Pekan telah memperkenalkan sistem Check Point Pasir. Sistem ini dilaksanakan di empat lokasi iaitu:-

- a) Simpang Lamir/Pahang Tua
- b) Pulau Keladi
- c) Pejabat Pertanian Paloh Hinai
- d) Simpang Pelak

Sistem ini dilaksanakan dengan menggunakan premis sedia ada contohnya pondok bas usang, premis tinggalan atau khemah yang berukuran 20'x 20'. Khemah ini adalah hasil sumbangan daripada Ahli Dewan Undangan Negeri Chini. Setiap *check point* akan ditempatkan seorang atau dua orang Pembantu Awam gred H11. Seorang atau dua orang Penolong Pegawai Tanah Gred NT27 ditugaskan untuk rondaan *check point* dan *standby*. Tempoh bertugas bermula 8.00 pagi sehingga 6.00 petang, Isnin sehingga Sabtu. Jadual bertugas disediakan oleh Penolong Pegawai Daerah (Kuatkuasa) dan akan bertukar setiap hari. PDT Pekan juga telah mewajibkan cap khas di ruangan tarikh dan masa pada doket.

Penggunaan cap ini dapat menyelesaikan masalah penggunaan *magic pen*. Arahan penggunaan cap ini telah dinyatakan dalam surat kelulusan dan mestilah dipatuhi oleh pengusaha. Hasilnya, pada tahun 2016, kutipan royalti meningkat sebanyak 155% berbanding tahun sebelumnya. Walau bagaimanapun, bagi menjayakan inisiatif ini sepanjang tahun 2016, pentadbiran telah membelanjakan sebanyak RM 48,818.23 bagi bayaran tuntutan elaun lebih masa dan RM 32,826.95 bagi bayaran tuntutan elaun perjalanan. Jadual 2 menunjukkan perbandingan hasil kutipan royalti pasir PDT Pekan dari tahun 2014 hingga 2016.

Sistem Check Point Pasir ini mempunyai serampang dua mata kerana selain dapat meningkatkan hasil negeri, sistem ini juga dapat mengatasi masalah disiplin di kalangan kakitangan yang terlibat. Sebelum kesemua Pembantu Operasi terlibat dalam inisiatif ini, mereka ditempatkan sebagai Pembantu Operasi Gunasama. Ini bermaksud, semua unit dalam pentadbiran PDT Pekan boleh menggunakan khidmat mereka. Walau bagaimanapun, golongan ini terpalit dengan pelbagai masalah disiplin seperti ponteng kerja, datang lewat ke pejabat, rehat tanpa mengira waktu dan sebagainya. Dengan penglibatan mereka dalam inisiatif ini, kehadiran mereka di *check point* yang telah diarahkan dapat diselia oleh penyelia masing-masing. Semua petugas *check point* juga disyaratkan untuk mengetik perakam waktu di Pejabat

Penghulu Mukim yang berhampiran dan tidak perlu lagi ke PDT Pekan untuk menetik sebelum ke *check point*.

Jadual 2: Prestasi kutipan royalti pasir PDT pekan dari tahun 2014 hingga 2016

Bulan / Tahun	2014 (RM)	2015 (RM)	2016 (RM)
Januari	101,196.00	82,827.00	166,236.00
Februari	122,166.00	88,467.00	171,534.00
Mac	130,071.00	116,277.00	336,666.00
April	144,882.00	105,678.00	331,432.00
Mei	75,934.00	70,266.00	350,919.00
Jun	118,122.00	86,382.00	352,757.00
Julai	57,513.00	88,885.00	196,543.00
Ogos	115,137.00	586,415.00	335,275.00
September	78,286.00	347,763.00	270,406.00
Oktober	99,967.00	354,112.93	289,154.00
November	76,158.00	90,588.00	278,184.00
Disember	44,970.00	117,437.00	224,642.00
Jumlah	1,164,402.00	2,135,097.93	3,303,748.00

Sumber: Unit Hasil, Pejabat Daerah dan Tanah Pekan

KESIMPULAN

PDT Pekan telah berjaya membantu kerajaan negeri meningkatkan hasil sebanyak 83% mulai tahun 2015 dengan menggunakan kaedah konvensional. Pada tahun 2016, hasil telah meningkat sehingga 155% setelah Sistem Check Point Pasir dilaksanakan. Pentadbiran ini berbangga kerana dapat menyokong aspirasi YAB Perdana Menteri Malaysia supaya pentadbiran kerajaan mencari cara yang lebih baik untuk menghasilkan barangan atau perkhidmatan dan menjadikannya lebih berkesan serta pada kos yang lebih rendah. Saranan ini disampaikan sewaktu beliau menyampaikan ucapan di Siri Ceramah GSIAC-Khazanah yang dianjurkan oleh Khazanah Nasional Bhd di mercu tanda terkini London, The Shard. Pentadbiran ini berpendapat kaedah ini boleh digunapakai oleh pejabat daerah yang lain kerana ia telah terbukti berjaya meningkatkan hasil dengan menggunakan kos yang minima.

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THE INFLUENCE OF VOLUNTARY AND COMMUNITY ORGANIZATIONS (VCOs) TOWARDS ORGANIZATION SUSTAINABILITY: THE MEDIATING ROLE OF EMPLOYEE BEHAVIORS

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ABSTRACT

The authors reviewed the literature of the voluntary and community organizations (VCOs) associated with organization sustainability. The literature shows that accountability, sustainability and externality can be measured, are related to participation, and can be managed by voluntary organization employees. Therefore, understanding the influence of VCOs is important because they can be used to enhance participation in voluntary groups and organization sustainability. Employee activity level and different organization types are ways in which researchers have examined accountability, sustainability and externality. Data were gathered using a questionnaire survey, to investigate the current management in VCOs, and examines the determinant and mediating factors of the mechanism. The data were collected mainly from volunteers in Penang state. Different analysis was conducted by using SmartPLS software. The results indicated that VCOs does not have a significant relationship with business's performance. However, the employees' behavior does mediate the relationships. Practical implications of the research are discussed, and recommendations are given to refine future research efforts.

Keywords: Voluntary and community organizations (VCOs), Employee Behaviours, Sustainability

INTRODUCTION

In the post-World War II period to the late 1970s, the VCO sector played a subordinate role to state agencies in complementing and supplementing services, at the same time pioneering new methods of meeting people needs. Until today, VCOs taking their place together with governmental agencies as social welfare provider. Their main job including deliver public services funded by government but recently they are facing an expanding range of external regulations and uncertainties demands. As role of VCOs in the provision of public services are keep increasing, it's time for the leaders of both VCOs and governmental to have some mutual understanding and agreement.

Employee volunteerism became commonplace in many companies especially in the Western countries (Mccallum et al., 2014), where employee volunteerism programs defined as “a planned, managed effort that seeks to motivate and enable employees to effectively volunteer under their sponsorship and leadership of the employer”. This programs are increasingly viewed as a way for companies to prove their commitment to their communities, at the same time to build a positive organizational cultural internally with Corporate Social Responsibility (CSR) initiative.

Recently, many organizations in Malaysia have decided to incorporate volunteerism into their employee benefits because of the significant individual benefits which result from volunteering in other countries (Mccallum et al., 2014). In Malaysia, there are no specific legal structure for social enterprise but it is eligible to incorporate an organization and modify the company articles to emulate the structure of social enterprise or social enterprise-like organization in other countries. Social enterprises act as activator of change, which including identify social problems and introduce solutions.

PROBLEM STATEMENT

In recent years, almost everyone would agree that, through VCOs, individuals able to gain awareness of their working style and learn some strategies in resolving conflict and communicating effectively between those styles are unlike their own. But, how does VCOs assist individuals in recognizing themselves? Volunteering was related to job absorption but not job interference, it was associated with better job performance (Rodell, 2013). Sometimes implementing performance management in VCOs is difficult because lack of clarity in the direction and motive (A. De Waal, Goedegebuure, & Geradts, 2011).

Employee volunteering meaning a staff donate time and skills during work hours to handle local social issues, and believed that is an effective and powerful way for business organizations to invest in their human resources and local communities. To strengthen the sustainability in organization, there has been growing of relevance of fostering employee engagement in VCOs, which aim to integrate economic, social and environmental issues into business strategies. However, the question becomes, employee can be forced to volunteer? What type of volunteering program should an organization engage in? Volunteer involving organizations pro-active in ensuring the policies and practices consistent with the voluntary. employees are not volunteers. A contract of employment can exist without a written document. There are some cases where organizations do not have clear policies and practices differences for a ‘employee’ and ‘volunteer’. Thus, organization has no right to force employee to join voluntary job unless the employee willing to do so. To avoid this issues, organizations encourage employees involve in volunteering with other perspective like let them know the advantages of volunteering, provide training and sharing.

Recently, many organizations implemented different performance management techniques. Top management in organizations strongly believed that CSR will leads to better organizational results in financial and non-financial. Thus, CSR is becoming something that organizations must undertake. Assuming investors and interested stakeholders support volunteering program, it will increase brand value, stakeholder loyalty, and benefits the non-profit recipients. This can create “win-win” outcome. Thus, companies often use CSR programs to deflect attention from

socially irresponsible practices in their core operations. Normally, their CSR activities will be reported in annual reports and photos during the activities will be published. However, there is argument that stated reports are actually not enough unless there is a proper implementation of suitable policies. Besides, volunteering is not grounded in a set of principles about what it means to be a responsible business. Although employee volunteering is being more recognizable, but there is no common element to explain about what employee volunteering is. Hence, this study aimed to determine the relationship between VCOs and business organization, and how VCOs affect an individual, at the same time affect organization sustainability.

SIGNIFICANT OF THE STUDY

The notion that VCOs is important to business is not a new trend. VCOs can facilitate an individual and collective action and help improve business performance management thus enhance sustainability. Freeman & Evan (1979) mentioned that stakeholders in a corporation including owners, management, local communities, customers, employees and suppliers. Although owners hold the major financial stake in the organization, the participation of other stakeholders in decision making has close related to productivity efficiency and leading to competitive advantage.

Although organizations pursue the satisfaction of the interest of different parties but employees are the significant stakeholders because employees act in a company's name. Results showed that corporate volunteering contributed to employees' satisfaction and retention, providing employees an opportunity to enhance job-related skills as management, teamwork or leadership skills, also improve work attitude and moral. At the same time, organizational management need to understand which elements in VCOs are able to give impact to the employees, thus can apply it as a tool to enhance their employee performance. Besides, organization have to identify the existing organizational barriers and plan how to overcome these barriers. Finally, the alignment of the VCOs to the organizational strategy, would help an organization in creating an environment that encourages knowledge sharing. Therefore, the current study would introduce a shared value concept, and believe this would improve the results of organization performance in the long run.

RESEARCH OBJECTIVES

This study intended to examine the influences of VCOs towards business organization sustainability with the mediating role of employee behaviours. The objectives as below:

1. To examine the relationship of VCOs and organization sustainability
2. To understand the influence of VCOs with individual behavior towards organization sustainability
3. To determine the mediation effect of employee behaviour between VCOs and business organization sustainability

LITERATURE REVIEW

Voluntary and Community Organizations

Volunteering refers to the act of individual who freely giving his or her skill, energy, knowledge or time for the benefit of other causes, group or people. It can be defined as a specific type of prosocial behaviour that can replace in an organizational context (Grant, 2012). VCOs can be defined as key constituents of civil society, community builders, and/ or deliverers of public services (Cairns et al., 2005). According Parry et al. (2006), there are many terms used to describe organizations in this sector, for example independent, non-profit, voluntary, charitable, tax exempt and non and para governmental organization. According Brien, Tooley, Brien, & Tooley (2013), VCOs is characterised with organizations that have a very strong bond to local communities, and multiple accountability relationships identified between the organization and its community stakeholders. While, stakeholders in VCOs refer to persons who can affect/impact or are affected/impacted by the achievement of the organization's social mission, including funders, volunteers and donors, government, oversight agencies, beneficiary and client groups, and the public community. VCOs accountable to stakeholders in many ways, like oral briefing or report recording during meeting, and informal information sharing during the course of executing activities (Awio, Lawrence, Northcott, & Awio, 2007). Today, VCOs in United Kingdom as a major provider of welfare and specialist services (Parry et al., 2006), where they keep expanding their role not only in the provision of public services. Recently, they are under increasing pressure from funders to improve their management and organizational system in order to enhance their capacity (Cairns et al., 2005).

Capacity building aimed to help organizations in delivering high quality activities and services efficiently. As awareness of volunteering is keep increasing, there is also the increasing of need of voluntary organizations to be seen to manage and to be accountable on enlarged role in service delivery. Sometimes, their pressure for management not only comes from the organizations themselves but other external pressures such as dependence on statutory of funding, increased competition for funding, and the resulting "contract culture" (Kellock et al., 2011). When discussing management within this sector, it is important to recognize the unique characteristics that can complicate the management process, especially when discuss about the management of change (Kellock et al., 2011). This study focused on factor accountability (Fowler, Cordery, Fowler, & Cordery, 2015) , sustainability (Holborn & Wc, 2015) and externality (Cairns et al., 2005).

Accountability

According to Brien et al. (2013), accountability defined as "being held responsible by other" and "taking self-responsibility" for what has been done. In third sector, although VCOs are not profit oriented organizations, but they are accountable to income providers which increasingly need to be cost-effective and operate "business -like" (Parry et al., 2006). The committee in VCOs play role in monitoring the execution of the policies and accountable to its stakeholders on the organization's performance (Midilli, Dincer, & Ay, 1998). Thus accountability includes both a reactive response and a proactive response, is more meaningfully if able to engage with its stakeholders in shaping organizational vision, mission, goals and performance, to ensure that the public trust is served (Brien et al., 2013).

Recently, VCOs are subject to internal and external “influencing agents” that aimed to drive organizations to strategic change. The changes including focus on income generating and shift from culture of grants to contracting. This changes actually would gradually causing opposed to the mission-based objectives, which increasing demands on volunteer directors and need to “modernise” the mission of the organization (Kellock et al., 2011). There have been huge development in in trends and patterns of VCOs reporting recently, which cover more comprehensive coverage of issues, increase number of different types of reports, and attempts at standardization or benchmarking (Emeseh & Songi, 2014). A positive externality defined as a benefit that is enjoyed by third-party as a consequence of an economic transaction. Significant positive externalities occur when there is a positive gain happened on both the private and social level, where believed the returns are higher than the private return. Individuals who benefit from positive externalities without paying are considered as “free-riders”.

Sustainability

Operational sustainability defined as an organization being able to survive in industry and able to continue to serve its stakeholders. Moreover, operational sustainability is able enhance or undermine the amount of financial resources available to the organization. However, ongoing operational sustainability sometimes will become limitation to the availability and participation of volunteers (Brien et al., 2013). Continuous inputs required to maintain organizational sustainability while volunteer contributions are an important resource for VCOs (Brien et al., 2013). For long term proposal, many volunteering programs require sustained energy and commitment rather than one-shot or short term contributions. Volunteers play an important role in VCOs sustainability especially in reporting and disclosure of volunteers’ contributions. Disclosure of service and time in reporting are useful to stakeholders in assessing management of the VCOs in achieving organizational vision, mission and decision making. Thus, it is important to engage volunteers in long-term efforts rather than short-term effort to contribution because when individuals commit in volunteering over time, they are not only able to earn the trust of main stakeholders, but also willing to open door for making more meaningful and continuous contributions (Grant, 2012).

Externality

Positive externality may bring advantages to public society to encourage free-riders to consume goods and generate more external benefits. Positive externalities mostly merit goods generate positive consumption which beneficiaries do not pay for. For example, education, the skills acquired and knowledge learnt in VCOs can benefit the key stakeholders in many other ways. Professional management in VCOs consist a number of stakeholders, including trustees, fund providers, voluntary workers and beneficiaries of the service. This may make it difficult to develop a coherent strategy (Parry et al., 2006) if volunteer work often provides the basis of personal development. Many countries started to recognize the importance of professional background volunteers and the impact that their unpaid service has on the economy (Catano et al., 2012). Key (1999) suggested that the impact of time and effort will allow for both change and conflict within the environment to be accounted for. Thus, VCOs have to be strongly valued in this and believed these values may influence the way in which people are engaged.

Employee behaviour

Employee behaviour defined as an employee’s reaction to certain situation at workplace. Employee efficiency is vital to organizational success (Authors, 2015). In this competitive working environment, employees need to behave sensibly, not only gain respect and appreciation from peers, but also to create and maintain a healthy work culture. During transition period, employee behaviour is important for team success because it involved many interpersonally-oriented behaviours to support the social and motivational context (Bandura, R. P., Lyons, P. R., Bandura, R. P., & Lyons, P. R. 2014). Employee empowerment play an important role, not only implemented to change employee perceptions, but also foster proactive behaviours that could impact on organizational outcomes (Patrick, André, & Alexandre, 2014). In this study, four primary and conceptually related literatures have been developed: extra-role behaviour, pro-social behaviour, helpful behaviour and organizational-citizenship behaviour (Bandura & Lyons, 2014; Wollan, Sully, & Marko, 2011) and been justified in the relationship between VCOs and business sustainability.

Organization Sustainability

To sustain long term in industry, more companies practising nationally diverse workforce, attending to managerial expectations of employee performance and developing strategies for managing a workforce to become more complicated and tough in order to moving towards globalization (Wollan et al., 2011). According to Midilli et al. (1998), the main concept of sustainable development requires organizations to develop a culture that emphasizes on employee participation, continuous learning and improvement. Chang, Tsai, Chen, Huang, & Tseng (2015) also mentioned that in order to survive and maintain a competitive advantage in competitive markets, organizations have to adapt to changes in their trading environments, while strategy, policy, structure and training must work together to facilitate employee learning to support organizational sustain. In both voluntary and business organizations, performance orientation refers to a cultural phenomenon that rewards employees and encourage them for innovation and performance improvement towards distinction. A strong performance orientation organization will encourage employees believe in taking initiative, value individual responsibility and tasks over social relationship. People in high performance orientation culture would like to seek competitive environments, exhibit perseverance and hard work. They also tend to have a sense of urgency, desire feedback and evaluation, and maintain an internal locus control (Wollan et al., 2011). In high performance organization, leaders plays a key role in the development and growth and making most of the important decisions to determine the successful of the business (Nazarian & Atkinson, 2013). In this study, believed that high performance organization will lead to sustainability. Thus, high performance of business organizations can be examined by several factors including management quality, openness and action-orientation, long-term orientation, continuous improvement and renewal and workforce quality (de Waal & Akaraborworn, 2013).

RESEARCH FRAMEWORK

This study provided an empirically evidence to support the posited mediating effect of employee behaviour between VCOs and business organization commitment. The theoretical framework developed by four dimensions. First, the shared values and relationship between

VCOs and organization sustainability. Then as the framework is developed the process of transition from VCOs into individual behaviour, and the process of transition from individual behaviour to organization performance. Finally, the mediating role as an individual in VCOs and organizational sustainability, believed that VCOs will enhance an employee behaviour, thus encourage their organizational commitment. This study presented individual elements level to understand more specifically the mediating effect of organization workforce on each VCOs elements and organization sustainability elements.

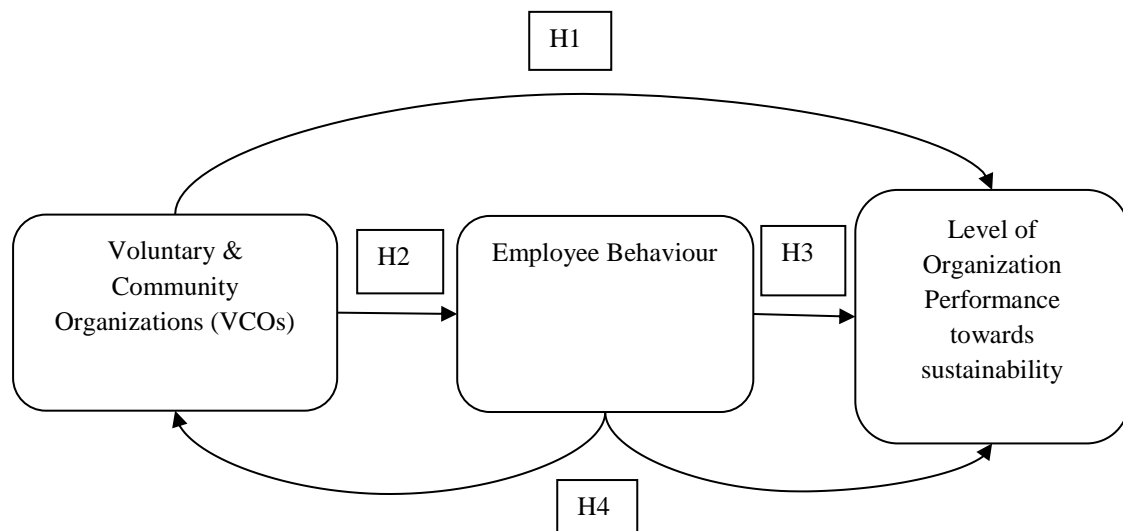


Figure 1 Theoretical Framework

Stakeholder Theory

Spitzeck & Hansen (2010) stated that the participation of stakeholders in decision making has close related to productivity efficiency and leading to competitive advantage. Although organizations pursue the satisfaction of the interest of different parties but employees are the significant stakeholders because employees act in a company's name. Results showed that corporate volunteering contributed to employees' satisfaction and retention, providing employees an opportunity to enhance job-related skills as management, teamwork or leadership skills, also improve work attitude and moral. Beside, Gallardo-vázquez (2013) confirmed that most of the companies defined their managerial strategies as the obtaining of a behaviour, compromised in the social, economic and environment areas, in order to sustain in their industries. Gallardo-vázquez (2013) emphasized that "Triple Result" or "Triple Bottom Line" is the prevailing philosophy to incorporate the sustainability inside the business as many leaders are discovering the triad of concepts gathered under these perspective: economic growth, environmental protection and social equity. They believed that applied these values can boost the value of their products.

Hypotheses Development

Expectations of organizational rewards, such as pay, promotional and employment continuity prospects are used by employees as a measure of the valuation of their contribution to the organization (Reychav, Sharkie, & Reychav, 2014). In VCOs, expectation of the individual

might be difference. Although VCOs and business organization having shared values, individuals' perception in VCOs will be affected by the psychological support they received, when changes or better management in VCOs and business organizations, this will be related more positive psychological contract. Besides, Perigo & Perigo (2013) believed that both forms of engagement can be highly valuable, both can co-exist and create win-win situation. Hence the hypotheses postulated as below:

- H1 Involvement in VCOs will significantly enhance level of organization performance and sustainability.
- H1a Accountability in VCOs will significantly enhance level of organization performance and sustainability.
- H1b Sustainability in VCOs will significantly enhance level of organization performance and sustainability.
- H1c Externality in VCOs will significantly enhance level of organization performance and sustainability.

The link between volunteering and employability are complex and the relationship is effected by many factors including the type of volunteering undertaken, the length of time a person has been work, and the motivation behind the volunteering activity (Clark, 2014). As many studies show that volunteering bring a lot of benefits to various actors, benefiting recipients or users, their families and more widely the community (Principi, Lindley, Perek-Bialas, & Turek, 2012). In this study, we would look into how the accountability, sustainability and externality in VCOs affect individuals' working behaviour. On the basis on these assumption, when changes or better management in VCOs, this will be related more positive psychological contract. Therefore the hypotheses are:

- H2 Involvement in VCOs will significantly enhance employee behaviour.
- H2a Accountability in VCOs will significantly enhance employee behaviour (extra-role behaviour, pro-social behaviour, helpful behaviour and organizational-citizenship behaviour)
- H2b Sustainability in VCOs will significantly enhance employee behaviour (extra-role behaviour, pro-social behaviour, helpful behaviour and organizational-citizenship behaviour)
- H2c Externality in VCOs will significantly enhance employee behaviour (extra-role behaviour, pro-social behaviour, helpful behaviour and organizational-citizenship behaviour)

Studies found that employees generally reciprocate favourable organizational treatment with more positive attitudes and higher level of performance (Shore, Bommer, Rao, & Seo, 2009). The concept of voluntary employee behaviour may not much related to community and charity needs, but it contributes to organizational functioning and success. Good communications skills and positive attitude should be obvious qualities for distinguishing great leaders. People will want to rally behind a leader who can maintain a positive attitude in a difficult time, and can clearly communicate the needs of the organization. When an employee's attitudes are

positive, this would result in positive self-rating of behaviour and organizational commitment will be positive. This leads to the following hypothesis:

H3 Employee behaviour will significantly affect level of organization performance towards sustainability.

As individual social norms may affect the actions of individual organizational members, just as individuals seek to fit into a community, so may organizations through the actions of their members (Key, 1999), individuals as volunteers and employees with a range of competing demands on their time. Employee volunteering in community and charitable work serves as a vehicle for both individual and organizational learning and development (Perigo, 2010). Perhaps an approach between these two organizations with staff and senior management working in partnership, would enable both organizations to develop their strategic capacity more effectively (Kellock et al., 2011). Below hypothesis is seek to examine the mediating of employee behaviours in the relationship that VCOs shares with business organizations. This leads to the following hypotheses:

H4 Employee behaviour mediates between VCOs and level of organization sustainability.

H4a Employee behaviour mediates between accountability in VCOs and level of organization performance towards sustainability.

H4b Employee behaviour mediates between sustainability in VCOs and level of organization performance towards sustainability.

H4c Employee behaviour mediates between externality in VCOs and level of organization performance towards sustainability.

METHODOLOGY

This study examined by using quantitative approach, which questionnaire was developed and aimed to understand the presence of VCOs, as well as current organization practices, principles and policies and their linkage among each other. To test the hypotheses for this study, a deductive-quantitative-survey methodology using convenience sampling was used. The level of analysis in this study is based on individual, believed that each individual has his or her own perception (Nazarian & Atkinson, 2013). This study applied aggregates in analysis, where all the data that goes into the analysis converted to average and the unit of analysis is a group of working adults. The population of this study will be working adults in Penang, Malaysia. The survey also engaged people throughout organization to provide more accurate information about where to focus attention for future success. Therefore, it run with multiple levels of management and operational personnel and business units and in different locations where appropriate.

The questionnaire aimed to collect information about the motivations and perceptions underlying individual volunteering practices. Socio-demographic variables like gender, age, educational qualifications included, to help to fine tune future initiatives. To capture their perceptions of their own predisposition, questions related with volunteering (volunteering activities in which they participating, the time they spent on such activities, the nature of activities in which they have volunteering) will be measured in order to facilitate the

characteristics of the individual. Three hundred self-administered questionnaires are distributed to working adults through e-mails. Respondents are made to know the questionnaires are served only for academic purpose and privacy is guaranteed to encourage truthful answers. Out of the 300 questionnaires, 142 were returned and estimated 140 are usable, yielding a response rate of 47%.

RESULTS

Assessment of Measurement Model

In measurement model, indicator reliability, internal consistency reliability, convergent validity and discriminant validity will be analysed. The first step was to figure out the value of the outer loadings and to eliminate items with loading less than 0.60. First of all, indicator reliability analysis was conducted by examining the outer loading or the loadings of each item on their respective construct or latent variables. Ideally, all loading of each item on each construct should be more than 0.7. However, values that more than 0.6 were still acceptable for exploratory study purpose. Table 1 shows the reliability coefficients for the major variables.

Table 1: Reliability coefficients for the major variables

Variable	Number of items	Items dropped	Cronbach's alpha
Accountability	5	1	0.69
Sustainability	5	1	0.72
Externality	5	1	0.77
Employee Behaviours	20	6	0.91
Business Sustainability	15	1	0.90

In this study, discriminant validity analysed by mean of Heterotrait-Monotrait (HTMT) ratio. Table 2 below showed value less than at least 0.85, are acceptable.

Table 2: Discriminant validity

Model Construct	ACC	EB	EXT	LOP	SUS
ACC	0.714				
EB	0.497	0.711			
EXT	0.600	0.598	0.766		
LOP	0.256	0.510	0.271	0.708	
SUS	0.685	0.627	0.613	0.325	0.736

Assessment of Structural Model

Structural model assessment conducted upon make sure all the variables were proven reliable and valid. This process involved analysis of inner relationship between each variable. Goodness-of-fit (GoF) defined as the geometric mean of the average variance extracted (AVE) or average communality and the average of R square of endogenous latent variables. GoF represents an index for validating the overall fit of the model. GoF index is being developed to take into account the model performance in both the measurement and the structural model. Thus, it provides a single measure for the overall prediction performance of the model. GoF is

formed between 0 and 1, a higher value represents better path model estimation. Table 3 shows the Goodness of fit measure.

Table 3: Goodness-of-fit measure

Variables	AVE	R square
ACC	0.510	
SUS	0.541	
EXT	0.587	
EB	0.506	0.467
LOP	0.501	0.263
Average AVE and R Square	0.529	0.365
Average AVE* Average R Square		0.193
Square Root of AVE*R Square		0.439

The ten hypotheses including mediating effects were examined and illustrates in Table 4 as below.

Table 4: Hypothesis testing

Relationship	Beta value	Sample mean	Standard error	T-value	P-value	Decision
ACC → EB	0.012	0.003	0.095	0.128	0.898	Not Supported
ACC → LOP	0.021	0.017	0.135	0.154	0.878	Not Supported
EB → LOP	0.528	0.543	0.087	6.065***	0.000	Supported
EXT → EB	0.339	0.337	0.093	3.651***	0.000	Supported
EXT → LOP	-0.071	-0.064	0.116	0.615	0.539	Not Supported
SUS → EB	0.411	0.409	0.091	4.502***	0.000	Supported
SUS → LOP	0.023	0.028	0.159	0.147	0.883	Not Supported
ACC → EB → LOP	0.006	0.002	0.052	0.123		Not Supported
SUS → EB → LOP	0.217	0.222	0.058	3.739***		Supported
EXT → EB → LOP	0.179	0.183	0.065	2.752***		Supported

Note: ** p < 0.05; *** p < 0.01

DISCUSSION

The influence of VCOs on Organization Sustainability

VCOs is found to have positive relationship with business sustainability. In addition, Perigo & Perigo (2013) identified that there are many people believed that volunteering and community action an learning and business organization training are the same. However, the result showed negative with VCOs towards business sustainability. Hypothesis 1 was rejected. Through the results, we believed that the framework for business-community engagement is being overlooked in Malaysia due to the terminology remain unclear. Besides that, we cannot deny that some business organizations engage with the voluntary and local community because to highlight the good reputation. As the role of VCOs increasing in the provision of public services, leaders of all parties need to have some mutual understanding among each other and negotiate a contract, implement and monitor the outcome (Cairns et al., 2005).

Hence, we could conclude that, the shared value involves creating economic value for social community by knowing their needs and challenges. Shared value creation focuses on identifying and expanding the connection between economic and societal progress. Business organization have to know the actual meaning of shared value, which is not only charity, philanthropy, social responsibility or sustainability, but can create a new way to achieve economic success and gradually can give rise to the major transformation of business thinking and process (Porter & Kramer, 2011).

The influence of VCOs on Employee Behaviour

Sustainability and externality in VCOs were found to have positive relationship with employee behaviour. The findings aligned with previous study that stated that sustainability and externality are closely related to individuals' behaviour. The finding further supported that continuous improvement and learning very important to individuals. Besides, volunteer nowadays concern on environmental issue. Transparency and disclosure of the activities will attract more volunteer in participating. Thus, Hypothesis 2b and 2c were supported and accepted.

However, accountability in VCOs illustrated insignificant result. The finding was contradicting with previous studies who stated that accountability in VCOs would affect individuals' behaviours. This might be due to accountability of VCOs in Malaysia is not a main concern in affect individual volunteering. Demographic analysis showed that most of respondents are young working adults, they joined volunteering program through word of mouth. The main purpose they join volunteer program is because to learn something different for their working life, but not because of management and accountability of the organizations. Thus, hypothesis 2a was not supported in this study.

The influence of Employee Behaviour on Organization Sustainability

Employees are main stakeholder in an organization. This finding was consistent with previous study from Bandura, R. P., Lyons, P. R., Bandura, R. P., & Lyons, P. R. (2014) who agreed that employee behaviour determine the sustainability in organizations and employee behaviour can help in enhance organization performance. Therefore, Hypothesis 3 was accepted and supported.

The Influence of Employee Behaviour as Mediating to Vcos and Business Organization Performance

From the findings in previous section, employee behaviour does mediate the effect of VCOs factor of sustainability and externality towards business sustainability. Hence, Hypothesis 4b and 4c were supported. However, employee behaviour does not mediate the effect of VCOs factor of accountability towards business sustainability. Thus, Hypothesis 4a was rejected.

Parry et al. (2006) stated that not only employee behaviour will influence organization performance, but there are four other factors which would influence the behaviour of people in organizations: 1. Organizational structure; 2. Organizational culture; 3. Leadership of the organization; and 4. External environment. Individuals experience is able to foster both VCOs and business organization commitment, including: training and development provided, ongoing support by organizations, contribution recognition and choices among activities

offered (Principi et al., 2012). Working culture is very important to individuals as well. Every employee spending at least eight hours in their working place. Thus, they need to feel comfortable at workplace for them to feel happy and stay positive. In this study, organizational-citizenship behaviour does not show a positive result. Most probably is due to poor in employee-organization relationship. Employees need to talk to people around, discussion, brainstorming and sharing experiences. Lack of interaction within employees will lead to stress and frustration in workplace. Transformation power of shared value is very important. Leaders and managers must always develop new knowledge and skill, have deeper appreciation of societal needs, enhance understanding of company productivity, and the ability to collaborate across profit nor non-profit organizations. (Porter & Kramer, 2011).

CONCLUSION

In conclusion, this study has demonstrated the undesirable influences of VCOs (accountability, sustainability and externality) towards business sustainability. However, employee behaviour does mediate the relationships of the VCOs towards business sustainability. The practical shared value will create another trend of innovation and productivity growth in the global economy, and reshape capitalism and its relationship to society (Porter & Kramer, 2011). It is good that every organization to provide more opportunities regarding VCOs. In future studies, a cross cultural study may be conducted to provide new insight in this area. Hopefully this will lead to greater innovation and growth for both voluntary and business organizations, as well as government, to bring greater benefits for society as a whole.

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Concurrent Session IB
Corporate Governance & Integrity

CORPORATE GOVERNANCE IN AIR ASIA BERHAD

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ABSTRACT

The aim of this paper is to discuss the corporate governance practice in Air Asia Berhad. Corporate governance is an important topic discussed in Malaysia as the government is fully supporting corporate governance issue by introducing the Malaysia Code of Corporate Governance (MCCG) for organizations in Malaysia to follow. Although there are issues on corporate governance failure appearing in the papers quite frequently, but there are also organizations that have a good corporate governance in place. This paper will discuss the corporate governance practice in one of Malaysia's successful carrier. This paper first examines the level of corporate governance and its impact on firm performance which further branched out to board composition, financial disclosure and whistleblowing channel. Inside Air Asia Berhad, the author found that the organization fully complies with the recommendation of board composition plus they have a broad spectrum of board of directors with experience, expertise and reputation for integrity. Secondly, financial disclosure of Air Asia Berhad is fully transparent where all of the information is available in their website for investors to view and acquire. In addition, they have their own external auditors to ensure there is no manipulation of financial reports of the organizations. Thirdly, Air Asia Berhad have an internal whistle blowing channel which is delivered through email, contrasting with Dqorkin and Callahan (1993), stated that the best choice is external whistleblowing channel rather than internal as internal would create extensive form of retaliation to the employee from management. On the basis of the results of this research, it can be concluded that Air Asia Berhad, an organization in the airline industry takes corporate governance practice to its core and complying with the government effort on raising the corporate governance inside of Malaysia.

Keywords: Corporate governance, Board composition, Whistle-blowing, Financial disclosure

INTRODUCTION

To sustain a good business, a set of good system to control and direct the company towards their goal is very important. This term is known as corporate governance. In year 1992, Cadbury Report was established by a committee led by Sir Adrian Cadbury on the financial aspects of corporate governance. This is the trigger point where the traditional mind set is to sustain business by having a huge amount of money was neglected and people start focusing on corporate governance as the crucial part in order to sustain business. Corporate governance issue became more interesting to be discussed with the Enron debacle due to failure of corporate governance practice in year 2001.

During this period, many scholars emphasise on having a good corporate governance which would enable an organization to be sustainable. Numerous elements of good corporate governance were discussed. In Malaysia, when financial crisis occurred in 1997, the necessities for good corporate governance in private sector become more crucial.

In year 2000, Malaysian Code of Corporate Governance (MCCG) was established as guidance to the principles of good corporate governance to be practiced. In this first approach, it focused on four areas including board of directors, director's remuneration, shareholders and accountability and audit. The code is hybrid in nature, which is similar to the Combined Code on Corporate Governance (United Kingdom). Under this approach, the companies in Malaysia should apply the broad principles of good corporate governance sets out by the code flexibly and with common sense to the varying circumstances of individual companies.

This paper will analyse Air Asia Berhad as public listed company in the private sector on how this company apply good corporate governance base on MCCG 2012 guideline. This study also tries to relate the previous study findings with current Air Asia Berhad corporate governance practice to see it efficiency. Specifically, we will look into 3 main criteria which are the composition of board, quality of financial disclosure and whistle blowing channel.

LITERATURE REVIEW

Level of Corporate Governance and its Impact on Firm Performance

Impacts of corporate governance level towards firm performance have been study significantly by previous intellectual. During the 1990s, Gompers, Ishii and Metrick (GIM,2003) did a study on the impact of corporate governance on firm performance. They find that that stock returns of firm with strong shareholder right, outperform on a risk-adjusted basis, returns of firms with weak shareholder rights. Contrarily with GIM's study, Core, Guay and Rusticus (2005) claim that in the 2000s, share returns of companies with strong shareholder rights do not outperform those with weak shareholder rights. Subsequently, from time to time, many researchers come with many idea, some are identical some are totally different regarding the impact of corporate governance level on firm performance.

Contradiction of understandings in measuring corporate governance toward firm performance was concluded by Bala, Bernard and Vikram (2010). They found that the benefits of particular corporate governance practices vary depending on firm and country characteristics. In their study they do analyze on various criteria of the firm located in India and do contemporaneous comparison with firm in Brazil. Some of the criteria they analyze are board's composition, financial disclosure and shareholder rights. These are the famous corporate governance feature that always been highlighted in many research.

Board Composition

To gain better corporate governance, board composition always highlighted as the root criteria. Its normally concerns issues related to size of board, independence level of the boards, and CEO duality.

From previous study, it has been recognized that size of board correlated with firm size (Dalton et. Al, 1999; Yermarck, 1996). These findings were explained by theoretical perspective. Agency theories support that larger companies requires greater number of director for monitoring the company's performance. From dependence resource theory, greater number of director will increase access for resources. But there also some argument that said many directors may cause higher argument while reviewing management action. Related to the argument, there is study that concludes that number of directors should have upper limit (Jessen, 1993).

In general, directors can be classified into three categories which are executive director, non-independence non-executive director and independence non-executive director. Executive director or management directors are salaried employees, such as the president, Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operation Officer (COO). Non-independence non-executive director or related outside directors are those who have a pre-existing relationship with the firm, such as family relatives and retire executives. Independence non-executive director is director who has no personal connections or business dealing with the firm.

In this stage, Agency theory proposes that a more independence non-executive directors inside board will be able to monitor any self-interested actions by managers and so will minimize the agency costs (Fama, 1980; Fama and Jensen, 1983). Contradict with this suggestion, stewardship theory prefer more executive directors as they work to maximize profit for shareholders (Donaldson, 1990; Donaldson and Davis, 1991). Within these two suggestions, Malaysian Code of Corporate Governance 2012 prefers first suggestion as described in principles 3, "Reinforce Independent" (MCCG 2012). On the other hand, Main Market Listing Requirement by Bursa Malaysia Securities Berhad did not reinforce majority independence director because it only required at least two directors or one third of board of director, whichever is the higher must be independent director (Chapter 15, MMLR).

Duality issues of CEO and Chairman were also discussed in this research because good corporate governance always emphasize on the importance of the tone at the top which will lead to better firm performance. From the agency theory's perspective, CEO and chairman position must be held by different individual as this will increase the effectiveness of board monitoring (Finkelstein and D'Aveni, 1994). This theory was argued by stewardship theory

that one person in both roles may improve firm effectivity because it can remove overall ambiguity regarding responsibility for firm processes and outcomes (Donaldson, 1990; Finkelstein and D'Aveni, 1994).

Whistleblowing

Whistleblowing is the act of an individual on exposing any kind of information or activity that is illegal within an organization either it is private or public organization to draw public attention towards the organization involved whereby the issue can be corruption and fraud.

Two ways for the whistleblower to expose the issue, either internally or externally. Internally means the whistleblower will expose the issue to the people in the suspected organization and externally is the whistleblower will expose the issue to the proper external channel such as media, law, authorities or those who are concerned. There are external and internal channel of whistleblowing that an employee can take to whistle any improper activities they notice in the management.

The transparency of the channel varies accordingly for example if the employee blow the whistle, internally, he could face the fact that evidence will be destroyed, employee will be transferred out from the division and employee will have less access to the proof. Besides that, management have the tendency to respond differently to the whistleblower according to the channel the employee took to report as internal route would cause the management to take immediate action to fire the employee and if by external route it would create some dilemma for the management to fire the employee as the problem is highlighted to the public and would create negative perception to the company if the whistleblower if fired (Dqorking and Callahan, 1993).

Financial Disclosure

Financial disclosure is an important information required by investors for decision making. Financial disclosure has a huge impact on risk taking inside an organization as financial statements may not be represented fairly thus deliberately misleading investors about company's operations. Therefore, without a complete information it is impossible to fully understand a company's financial operation. Therefore, a natural next step is the development of a more comprehensive framework for conceptualizing and measuring the key aspects of the domestic information environment. A fundamental feature of the information environment is corporate transparency in financial disclosure.

A conceptual framework for characterizing and measuring corporate transparency in financial disclosure at the country level introduced in Bushman, Piotroski, and Smith (2001). Hereafter they develop a framework for conceptualizing and measuring corporate transparency in financial disclosure at the country level. In their framework, corporate transparency in financial disclosure has two main elements: 1) corporate reporting (voluntary and mandatory) and 2) information dissemination via the media and Internet channels. This paper uses the framework as shown in Table 1 to stimulate further thought on the measurement of corporate transparency in financial disclosure and of domestic information environments more generally.

Table 1: Variable used to measure corporate transparency in financial disclosure and data sources

Variables used to measure corporate transparency in financial disclosure and data sources
Corporate Reporting
Financial Accounting Disclosures
Long-term investments: Research and development, capital expenditures
Segment disclosures: Product segments, geographic segments
Subsidiary Disclosures
Footnote Disclosures
Governance Disclosures
Identity of major shareholders
Range of shareholdings
Identity of managers
Identity of board members and affiliations
Remuneration of officers and employees
Shares owned by directors and employees
Timeliness of disclosures
Frequency of reporting
Number of specific accounting items disclosed in interim reports
Consolidation in interim reporting
Reporting of subsequent events
Accounting policies
Consolidation of subsidiaries
Use of general reserves
Other
Financial statements available in English
Degree of disclosure of important accounting policies
Information dissemination
Penetration of media
Newspapers released
Televisions released
Media ownership

Source: Bushman, R., J. Piotroski, and A. Smith. 2001. "What Determines Corporate

This extended representation of corporate transparency in financial disclosure allows a variety of research questions to be addressed.

METHODOLOGY

Air Asia Annual Report in year 2015 and Air Asia Webpage in year 2016 was analysed to determine whether the board of directors, whistle blowing and financial disclosure e follows the elements as stated in the literature review section. For the component of board of directors there are three elements that have been examined and they are (i) size of board, (ii) independence of directors and (iii) Chief Executive Officer (CEO) and Chairman which is

clarified from the literature review above. For whistle blowing channels of whistle blowing, whether internal or external were determined. For financial disclosure the conceptual framework for characterizing and measuring corporate transparency by Bushman, Patrioski and Smith (2001) was used.

ANALYSIS

Board Composition of Air Asia

Size of board

The Board believes that it should generally have no fewer than three and no more than 15 members. The size of the Board could, however, be increased or decreased if determined to be appropriate by the Board. Against the board composition of Air-Asia, there are 7 members in board composition.

Independence of directors

The Board will determine annually, based on all of the relevant facts and circumstances, whether each director satisfies the criteria for independence and must disclose each of these determinations in its filings. The Board may adopt and disclose categorical standards to assist it in making such determinations and may make a general disclosure if a director meets these standards. Any determination of independence for a director who does not meet these standards, however, must be specifically explained.

CEO and chairman duality

Air Asia Board of charter strictly outlines that Chief Executive Officer (CEO) and chairman must be held by a different individual. This practice supports the agency theories perspective to have different individual for CEO and chairman in order to ensure there are no special interest in decision and increase the effectiveness of monitoring. Inside Air Asia Board, the charter also clearly explains the roles and responsibility of chairman and CEO. Chairman was required to do more overall monitoring of board members performance and decision making job. Chairman also has the important roles to ensure high quality of information and knowledge gain for board. Role and responsibility for CEO, specifically for financial, stakeholder management, operation, customers and people related issues. Clear outline inside Air Asia board of charter can avoid weaknesses of duality issue and improve the governance efficiency.

Whistleblowing

It is understanding that there are two type of channel for whistleblower to raise the issues which are external and internal. According to the study conducted to Air Asia, we able to recognize that Air Asia prefer channel to whistleblowing to be internal. According to Dqorking and Callahan, (1993) the best choice is external rather than internal as internal whistleblowing would create extensive form of retaliation to the employee from the management. Therefore, to protect the employee from extensive retaliation, Air Asia came

with a policy that would make sure those issue raised by the workers which included the directors, employees and others would be concern genuinely and retaliation is strictly prohibited by the corporate policy and would not be tolerated. Besides that, Air Asia create a platform for the workers to raise the issue which through their email and educate the workers on what matter to be raised and not to rise under the platform. Below shows the issue that could be report and not to report by whistleblower in Air Asia which can be found at the Air Asia Webpage.

Table 2: What to whistleblow and what should not?

Issue should be reported	Issue not to report
Commission of fraud and/or corruption	False and malicious concerns
Unauthorized use of Company's money, properties and/or facilities	Defaming concerns
Non-compliance with Company's policies and procedures and/or code of conduct	Concerns without any basis or insufficient evidence
Negligence/Malpractice	
Disclosure of Company's information without proper authorisation	
Commission of acts which intimidate, harass and/or victimise any members of the Board of Directors, Management or staff of the Company	
Abuse of position	
Involvement in conflict of interest and/or business opportunities positions	
Commission of unlawful acts	
Exposure of Company's properties, facilities and/or staff to the risks of safety and security	
Failure to meet professional standards	
Concealment of any of the above	

<http://www.airasia.com/my/en/about-us/ir-whistleblowing-channel.page> (2016)

Therefore, whistleblowing channel in Air Asia actually looks transparent and protective as how Lilanthi.R (2003) claims that to have a transparent and to protect the employee in whistleblowing, first there should be a law to protect the whistle blower and corporations should conduct training to the workers. Beside that Air Asia took the whistleblower channel seriously by appoint legal director to get those reports and direct it to the chairman of the board, audit committee (BAC) and report to management the outcome of the enquiry for further action.

Financial disclosure

Air Asia level of financial disclosure is measured by using a conceptual framework for characterizing and measuring corporate transparency which is introduced by Bushman, Patriotski and Smith (2001). In their framework has two main elements which are corporate reporting and information dissemination via the media and Internet channels, whereby the

results and further description for each element for Air Asia level of corporate transparency is translated into the Table 3.

The elements are considered “fulfilled” when the data from Air Asia Annual Report 2015 disclose the elements proposed by Bushman, Patrioski and Smith (2001). Corporate Reporting reference can be found in annual report that clearly explained about Air Asia corporate structure while Information Dissemination via Media and Internet Channels can also be found in annual report with regards to achievement and events that Air Asia had implemented throughout the year.

Table 3: Variable to measure corporate transparency and data sources

No.	Element 1: Corporate Reporting	
	Variables to Measure Corporate Transparency and Data Sources	Fulfillment of Elements
1	Long Term Investments : Research and Development, Capital Expenditure	Fulfilled
2	Segment Disclosures : Product Segments, Geographic Segments	Fulfilled
3	Subsidiary Disclosure	Fulfilled
4	Footnote Disclosure	Fulfilled
5	Governance Disclosure	Fulfilled
6	Other : Financial Statements Available in English, Degree of Disclosure of Important Accounting Policies	Fulfilled

(Air Asia Annual Report, 2015)

The first section of variables used to measure corporate transparency and data sources emphasize on the quality of Air Asia corporate reporting. By using Bushman, Patrioski and Smith (2001) framework and comparing it with the data gathered from Air Asia Annual Report 2015, all of the elements stated in Bushman, Patrioski and Smith (2001) framework was fulfilled. Information was disclosed to the stakeholders.

Table 4: Variable to measure information dissemination

No.	Element 2: Information Dissemination via Media and Internet Channels	
	Variables to Information Dissemination	Fulfillment of Variables
1	Penetration of Media : Press Clippings, Television, Social Media	Fulfilled
2	Air Asia Media Ownership Data	Fulfilled

(Air Asia Annual Report, 2015)

Table 4 shows the quality of information disclosed by Air Asia. It shows all elements are fulfilled. In the case of “penetration of media” from the annual report it can be seen that several platforms were used by Air Asia such as social media platform; Line, Twitter, Weibo, Wechat, Instagram, LinkedIn, Youtube, Google+, Pinterest and Viber Public and also networking platforms such as television and newspapers.

CONCLUSION

This paper identified that Air Asia have their proper corporate governance structure. From the research that had been done, we can conclude that corporate governance in Air Asia is influenced by three elements which are Board Composition, Whistleblowing and also Financial Disclosure. From the view of Board Composition, it is clear that Air Asia follows the guideline of proper corporate governance structure which is size of board, independence of board and also board membership criteria. All of the factors mentioned are properly determined by their audit committee. Next on Whistleblowing, Air Asia have their own internal channel for voicing out whistleblowing which most of the studies had been made suggested using external channel but Air Asia had made a policy which the issue raised by the workers will be treated genuinely and retaliation is strictly prohibited by the corporate policy and would not be tolerated.

In addition, Air Asia had created a platform for workers to raise the issue through their email. Last but not least is the Financial Disclosure, whereby Air Asia is thoroughly transparent with their financial report and it is being made available through their website. Plus, by referring to Bushman, Piotroski and Smith (2001) conceptual framework for characterizing and measuring financial transparency, Air Asia had fulfilled the requirement with flying colors which can be said Air Asia is transparent about their financial disclosure and they do not intent to hide anything from their investors. Considering all of the elements, Air Asia had followed the guidelines for corporate governance for an organization even though they have a different view on whistleblowing channels but the most important are the board composition and financial disclosure as investors really view these elements heavily before considering on investing into an organization.

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FORENSIC ACCOUNTING AND CORPORATE GOVERNANCE MATURITY: A LITERATURE REVIEW

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ABSTRACT

Forensic Accounting came into existence due to rapid increase in financial frauds, professional crimes and poor corporate governance. It is believed that there should be internal solutions to the internal problems. Internal solution will not only reduce the time lag but also prevents additional losses and amplifies the number of tools available for implementation of solutions. Corporate governance is an internal process and majorly influenced internally. If internal controls are not strengthened by the use of expertise, then corporate governance will be bound to collapse and will also raise the ventures for fraud and embezzlement. Mere role of Audit Department is not sufficient. In modern business environment, Forensic Accounting tools are required for conducting analyses, identifying loop holes and accomplishing satisfied stakeholders; thus achieving the true meaning of corporate governance. This study will discuss on the potential contribution of Forensic Accounting towards achievement of good governance. This study will also present the current and past Corporate Governance codes, its related gaps and recommendations for improvement by utilization of Forensic Accounting. Finally, this study will also provide recommendations towards identification of Forensic Accounting as key component in corporate governance. Furthermore, it will also recommend considering Forensic Accounting as a separate body with its own standards and also to be a part of all audit assignments whether conducted by internal or external auditors.

Keywords: Forensic accounting, Corporate governance, Fraud

INTRODUCTION

It is widely understood and as mentioned by many scholars that poor corporate governance leads to fraud, misappropriation of assets and dissatisfied shareholders (Bhasin, 2013). It is also stated by Johnson, Ayoib, and Shamsiah (2014), that no country is invulnerable to fraud. History and recent past is filled with events where organizations demonstrated poor corporate governance and end up either in filing bankruptcy or incorporate huge losses in their financial statements (Vinita, 2005).

Furthermore, Vinita (2005) and Fernando (2009) also stated that recent frauds are not only due to the failure of corporate governance but also demonstrated poor accounting practices which

were not detected by the conventional auditors. Controlling ownership and minority shareholders protection is difficult through conventional corporate control mechanism, i.e. it requires process enhancement which can be provided by Forensic Accounting (Fan & Wong, 2005).

Besides, auditors have denied the role for identifying fraud which had created an expectation gap between shareholders and auditors (Adeniji, 2008). This expectation gap can only be filled with Forensic Accounting (FA). Similar concept is defined by The Association of Certified Fraud Examiner ACFE (2016), that financial statement auditors' (i.e. external auditors) are not fraud examiner and also states that, external audits cannot be considered as the most efficient way to detector limit fraud.

People respond to what is inspected, not what is expected (Munshi, 2016). Several mitigating factors should be available within an organization for the entire internal deficiencies. Such internal mitigating factor reduces the time delay for solutions, prevents additional value loss and multiplies the number of tools available for implementation of solutions. It is widely understood that corporate governance (CG) is an internal process and majorly persuaded and prompted internally. If internal controls are not strengthened by the use of expertise, then CG is bound to collapse and raise the ventures for fraud and embezzlement.

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Gee (2014) opined that ever changing time requires the new technologies and expertise as the criminals are always one step ahead in thinking and executing crime. In this regards the conventional way of fighting or eliminating fraud requires change as well. This change can be defined as Forensic Accounting which is also the need of an hour and an essential requirement for the implementation of good governance. As mentioned by Baird and Zelin (2009) and Bhasin (2013), some tools which were utilized in detecting the fraud were provided and operated by forensic accounting which resulted in formation of many governance committees e.g. COSO and SOX. Forensic Accounting requires providing services which are beyond the general understanding of corporate people. As mentioned by Center for Forensic Studies (2010), it is expected from Forensic Accounting to offer reliefs to shareholders by assisting the conventional auditors. Moreover injecting FA techniques into conventional auditing will be effective to prevent leakages caused by corporate failure i.e. provide preventive measures to the organization.

PAST STUDIES ON FORENSIC ACCOUNTING

Forensic Accounting is the need of an hour and is also essential pillar for all organizations. Any study of Forensic Accounting is coarse unless it is combined with fraud and tackling of fraud. Forensic Accounting came into existence because of the continuous and rigorous frauds,

which are not detectable by the common auditing tools. Forensic Accounting arises from the cause and effect of fraud and technical error made by human (Adrian, Lawrence, and Cristal, 2009).

As mentioned by Hilzenrath (2002) cited by Effiok and Eton (2013) the outbreak of occupational fraud and financial abuse has increase pressure on the accounting and or auditing professions to find improved ways of uncovering financial crimes. Before explaining the definition of FA, it is worth mentioning that there is limited literature available on FA and majority of these are US focused, Bhasin (2013a) is also of the same opinion, where he stated that "*The literature on FA and its adoption in accounting and finance curriculum is rather limited and they are US centric*".

Definitions of Forensic Accounting

Several studies are available which define Forensic Accounting as an institution or person which appears or called upon after the fact (i.e. when the fraud has actually happened). For instance, Adedire (2016), Adrian, Lawrence, and Cristal Lee (2009), Leo and Stephen (2015), Gee (2014) and Nigrini (2012) investigated the role of Forensic Accounting as detection control, litigation expert, and fraud finder.

As described by Singleton and Singleton (2010) the term Forensic Accounting refers to the comprehensive view of fraud investigation. It includes preventive measures related to frauds and analyzing antifraud controls which are present in Organization's system. Forensic accounting would include the verification and audit of records in search for evidence of fraud. Comprehensive definition is defined by Dennis and James (2014):

"a multidisciplinary field that encompasses both a profession and an industry, where civil or criminal economic and financial claims, whether business or personal, are contested within established political structures, recognized and accepted social parameters, and well-defined legal jurisdictions, and informed by the theories, methods, and procedures from the fields of law, auditing, accounting, finance, economics, psychology, sociology, and criminology".

Mitrić, Stanković, and Lakićević (2012) established that segment which deals with the study of fraud and malfeasance is called Forensic Accountant and person who perform Forensic Accounting is called Forensic Accountant. FA can be defined in following diagram:

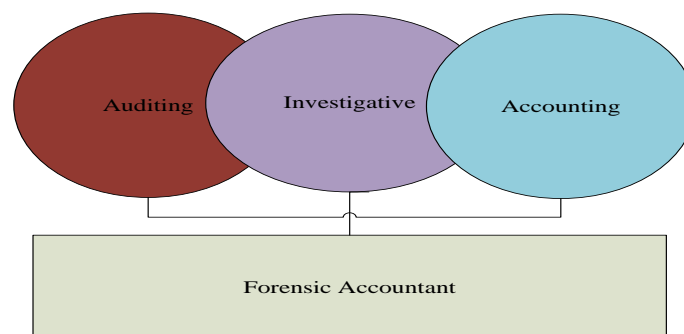


Fig. 1: Forensic Accounting
Source: Mitrić et al. (2012)

There are only a few studies available which stressed that Forensic Accounting should be a part of corporate governance. However, there is no study that demonstrates the relationship of Forensic Accounting as a governance management system and as part of organization's management team. On the other hand, Bhasin (2013) and Ali and Oseni (2010), stated that Forensic Accounting is positioned to explore the redesign of corporate governance because of its skills and knowledge. If FA is positioned to re-design CG then why FA cannot become a function of governance management.

Furthermore, there is no specific standard available for Forensic Accounting like Internal and External Auditing. In the absence of these standards, Forensic Accounting as profession is considered as part of audit instead of being considered as a separate standalone body with own standards and practices. Both IIA (2016) and AICPA (2013) negated the role of identifying the fraud and labeled it as management's responsibility and this role of external auditors as mentioned in AICPA (2013), is acceptable to Securities and Exchange Commission of United States (Singleton and Singleton, 2010).

In addition, there is no doubt and in accordance with regulatory standards, it is the management's responsibility to identify and report fraud. However in doing so management requires expertise which is, Forensic Accounting. Even though Forensic Accounting is becoming a necessary part of any organization, it is still not visible within the Codes of Corporate Governance issued by many authorities and regulators. Furthermore, there is no specific role of FA which can be of great support to operations as preventive measure and can strengthen CG in many ways including policy development, risk assessment, risk reporting, fraud audits and fraud testing.

Financial Fraud

Bhasin (2013a) stated that fraud exists in our society for centuries long. In a recent study, the Association of Certified Fraud Examiners (ACFE) estimates that the typical business loses 5 percent of its revenues each year to fraud. Put another way, this equates to \$50,000 for every \$1 million in annual revenues ACFE, (2016). Furthermore, ACFE (2016) defines that the firm and durable corporate governance practices are necessary when owners (shareholders) are not responsible for setting strategy or carrying out business activities for example publicly traded companies. These corporate governance practices or codes assist preventing fraud and fraudulent activities. These codes can be further strengthened by utilization the right antifraud expertise i.e. Forensic Accounting.

Vinita (2005) stated that aftermath of corporate accounting scandals and the resultant outcry for transparency and reliability in reporting created two outcomes. First is "forensic accounting" and second is "innovation in corporate governance". In addition, Bhasin (2013) stated that, several steps are taken towards eradication of fraud or preventing corporate governance from being getting abused but still fraud is occurring with more intensity and frequency. This requires certain additional steps and one of which is acquiring assistance of FA towards enhancing and strengthening corporate governance. In accordance with Jafaru (2011) and cited by Dickson, Ogijo, and Samuel (2013), Forensic Accounting should be seen as the application of financial skills and investigative mindset conducted with the context to resolve unresolved issues, thus complementing CG in a manner which is not covered by the Management's regular devised controls.

The Role of Forensic Accounting

In accordance with Olukowade and Balogun (2015), FA is established on three skills namely 1) auditing, 2) accounting, and 3) investigation. These three skills brand FA as acceptable to many diversified fields of work requirements, one of which is the fraud prevention. Any sort of risk including fraud can only be prevented if controls are established and implemented. FA is best suited to identify the controls related to fraud, its implementation and related reporting.

The role of FA is still not properly understood and FA is not utilized up to its maximum potential. As mentioned by Singleton and Singleton (2010), Charles, Ramona, and Suzanne (2009), Nigrini (2012), Moncliff (2005) cited by Adrian, Lawrence, and Cristal Lee (2009) and many others, role of FA is as only limited to fraud detection, litigation support, divorce claim verification, insurance claim verification and expert witness.

COSO (2016) stressed that organizations are required to identify their risk framework along with the assessment of top 10 risks which also includes fraud risk. As mentioned by Kasum (2009) and CIPD (2009), fraud is the primary means where organization loses their reputation and it also triggers other high risk areas. Currently role of FA is not seen as preventive control (i.e. to identify and address the risks). FA is only required when management or state institutions consider it as necessary and always after the fact. Such treatment of FA is also obvious in the codes of CG developed by CMA (2016) and many other authorities or bodies for instance SOX and OECD. Bhasin (2013) opined that controls are in place, codes are developed and implemented but fraud is still taking place. It is high time to understand the missing link in governance of organization (i.e. FA and to realize the fact that mere role of auditors is not enough).

It is worth mentioning that internal and external auditors are governed by their own standards and regulations, for example IPPF, ISA, IAS, IFRS, GAAS, and GAAP. Whereas, FA is functioning without any standards or regulations. Furthermore, internal and external auditors denied the role for fraud detection. It is worth mentioning that auditor's opinion is considered as final verdict towards assurance of "true and fair view" of organization's performance but unfortunately when it comes to fraud, auditor's performance is considered insignificant. In accordance with the recent survey conducted by ACFE (2016), it is mentioned that only 1.3 percent fraud is detected by external auditors. Furthermore and in accordance with Generally Accepted Auditing Standard (GAAS):

*"...the auditor is primarily concerned with **fraud that causes a material misstatement** in the financial statements..."*

GAAS also stated that:

*"The primary **responsibility for the prevention and detection of fraud rests with both those charged with governance of the entity and management**. It is important that management, with the oversight of those charged with governance, places a strong emphasis on fraud prevention, which may reduce opportunities for fraud to take place, and fraud deterrence, which could persuade individuals not to commit fraud because of the likelihood of detection and punishment...."*

Singleton and Singleton (2010) elaborated that this GAAS is also accepted by Securities and Exchange Commission (SEC) of USA. Over here, attention is required where auditors will only identify the material misstatement, whereas, in organizations there are millions of Dollars that could fall under non-material amount or transactions. There is no doubt that it is management and board’s responsibility to detect and fix fraudulent activities and transactions. In doing so, management require knowledge and proficiency (expertise) and these expertise can only be provided by Forensic Accounting. Moreover and in accordance with IPPF Section 1210.A2 (IIA, 2016)

*Internal Auditors must have sufficient knowledge to evaluate the risk of fraud and the manner in which it is managed by the organization, **but are not expected to have the expertise of a person whose primary responsibility is detecting and investigating fraud.***

With regards to above, it is always recommended in IA profession to obtain expert services or manage a department in a manner which contains all the necessary business expertise. In current business environment fraud testing is becoming necessity and especially shareholders should be assured that the financials are free from frauds. Management should get assurance that operations are free from fraud as well. In fact, all auditors should enhance their audit program and include fraud testing as a separate audit or additional test in the audits (Leonard, 2016).

Characteristics and Skills of Forensic Accountant

Characteristics and skills are important in order to shape up any profession. These defines that how professoion can help organizations/industry and can assist in achieving CGM. In order to understand the Characteristics and skills of FA Charles, Ramona, and Suzanne (2009) conducted a survey. Following were the top 7 essential characteristics and skills of FA: Similar characteristics are also explained by Imoniana, Antunes, and Formigoni (2013) and Bhasin (2013b).

If FA wants to be the part of Governance Management towards enhancing and strengthening overall control and governance framework, then the above mentioned low rated traits and skills should be enhanced. It is necessary to explain here that there is difference between Forensic Accountants, Fraud Auditors and Financial Auditors. In accordance with Singleton and Singleton, (2010) Financial Auditors are only concerned with the compliance with applicable standards and laws; fraud auditor identify the potential fraud and raise the red flag whereas Forensic Accountant check each and every area of the potential fraud, identify the reasons, amount, perpetrator and also suggest the way forward and lesson learned.

PAST STUDIES ON CORPORATE GOVERNANCE

In accordance with Bhasin (2013), the aftermath of many financial frauds results in formation of many Governance Committees from which prominent are:

1. Treadway Commission Report (1987)
2. Expectation Gap revision of Statements on Auditing Standards (1989)
3. Private Securities Litigation Reform Act (1995)

4. Report of Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees (1999)
5. Sarbanes-Oxley Act (2002)
6. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2013)

All the above mentioned committees work towards strengthening the control activities with one common goal i.e. satisfaction of stakeholders and ultimately achieving CG Maturity. As defined by Gabrielle O’ Donovan (2008) and cited by Baghel (2009) corporate governance is an internal system comprising of policies, process and people, which serves the needs of shareholder and other stakeholders. This is achieved by directing and controlling management activities with good business perception, objectivity and integrity. Good corporate governance is dependent on external marketplace commitment and legislation, plus healthy board culture which safeguards policies and processes. Further, it is also elaborated by Earnest and Sofian (2013) that CG is a system of structuring, operating and controlling a company with a view to achieve long term strategic goals to satisfy all the stakeholders.

Definitions of Corporate Governance

There are many definitions for corporate governance however purpose is the same. It completely depends upon organization that how they want to implement Corporate Governance i.e. either considering it as check box compliance or considering it as compliance and monitoring tool. As mentioned by Mazars, EcoDa, and ECGCN (2015), corporate governance codes should avoid becoming a ‘tick- box’ exercise and support a longer term vision of business functioning and accomplishments.

It is widely understood that organizations with better corporate governance are able to demonstrate better results and attract more customers. Although corporate governance system itself cannot perform, it requires proper structures, rules and regulations. Recent history is filled with fraud and scams even for those companies which won the awards for best Corporate Governance Organization e.g. Satyam Computer Services Ltd., a leading global consulting and information technology services provider, has won the coveted Golden Peacock Global Award for Excellence in Corporate Governance for 2008 (Businesswire, 2008). However, as mentioned by Sudhakar (2009) Satyam has just been added to a notorious list of companies involved in fraudulent financial activities, one that includes such names as Enron, WorldCom, Societe General, Parmalat, Ahold, Allied Irish, Bearings, and Kidder Peabody.

From literature point of view, corporate governance is perceived as dealing with problems which results from withdrawal of ownership and control. In this regard, corporate governance should concentrate on the organizations’ internal structure and rules/ Terms of Reference (TOR) of Board of Directors, creation of independent Audit Committees and related TOR, rule for disclosure requirements to stakeholders including Government Authorities and control of Management. Following figure demonstrates the Corporate Governance ownership:

As defined Shleifer and Vishny and cited by Fernando (2009), Corporate Governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investments i.e.

1. How do the suppliers of finance get managers to return some profits to them?
2. How do they make sure that managers do not steal the capital they supply or invest in bad projects?
3. How do the suppliers of finance control managers?

Further to above and according to Macey and Jonathan (2013) CG is to persuade, induce, compel, and otherwise motivate corporate managers to keep the promises they make to investors. Another way to say this is that CG is about reducing deviance by corporations where deviance is defined as any actions by management or directors that are at odds with the legitimate, investment-backed expectations of investors. Good corporate governance, then, is simply about keeping promises. According to the Background Paper 11 of HIH Royal Commission (2001) cited by Plessis, Hargoyan, and Bagaric (2010) defines corporate governance as the framework of rules, relationships, systems and processes within and by which authority is exercised and controlled in corporations. In this way, the expression corporate governance embraces not only the models or systems themselves but also the practices by which that exercise and control of authority is in fact affected. In accordance with Hermanson and Rama (2016) corporate governance is a development of the concept which has existed from the earliest days of social organization and has evolved into the elaborate constitutions of many of today’s nations.

Governance principles and structures apply to organizations with varying degrees of complexity ranging from international bodies, such as the United Nations, through national, regional and local levels, down to small clubs and special interest groups. Most of these groups have rules which define the pathway towards future growth and organization credibility. From these definitions, it may be stated that different systems of corporate governance will represent what are considered to be reasonable lines of accountability by defining the nature of the relationship between the company and key corporate constituencies. For this reason and to regulate the market, regulators are obliged to develop the codes.

Constraints and Benefits of Corporate Governance

In light of the above, past researcher discusses these constraints as those arising from stakeholders’ (particularly shareholders’) rights, a weak regulatory framework, and lack of enforcement, weak monitoring, a lack of transparency and disclosure, and ineffective boards of directors and audit and other committees. The principal importance of this field of study remains a fact that the interest of a large number of stakeholders is attached to Organization, but only a few have an opportunity to protect their interest. The affairs of a company are often run by a group of persons who may or may not pay adequate attention to the interest of other stakeholders.

As mentioned by the Butt (2012) Corporate Governance is the mechanism used to control and direct the affairs of a corporate body in order to serve and protect the individual and collective interest of all its stakeholders. It is widely understood that, whenever the terminology of control is included for organizations the laws, professional codes, industrial practices and management techniques are exercised to conduct and regulate the affairs of organization. In accordance with Fernando (2009) this mechanism of corporate governance will ensure that the individual and collective interests of stakeholders are served and protected and monopolistic decisions can be avoided.

As opined by the Petter (2011) it's widely understood fact that better governance is able to attract more stakeholders and easier lending. If organizations generally tend to achieve governance maturity then the economy as a whole benefits tremendously. Governance maturity leads to better financial performance by the organization, encourages investments, fuel growth, generates employment and improves the quality and range of products/services. One of the basic factors of governance is the transparency. Thus, it is very difficult for shareholders or even stakeholders to know if there could be any corruption or misleading information.

Influence on Corporate Governance

There are several factors affecting the organizational governance. These factors play major role in defining the structure, mode and policies that administrates the Governance. As mentioned by Butt (2012), OECD (2004), and Fernando (2009) Organization's governance and its board's performance are influenced by a number of external organizations and factors. These can be broadly divided into three segments:

- **Regulatory bodies:** Regulatory bodies include the government, various professional associations that have relevance to the organizations' business, trade associations to which organization belongs
- **Media:** Media include newspaper, televisions and radio which shape the opinions of the general society on issues relating to the organization
- **Pressure groups:** pressure groups include consumer associations, non-governmental bodies, trade unions and investor groups.

Further to above and as mentioned by Fernando (2009), the corporate governance system differ around the globe. Based on the CG system researchers/scholars suggest three broad model versions of CG namely Anglo-American Model; German Model and Japanese Model. Similar context is defined by Wu and Patel (2014) that corporate governance systems may vary from country to country and legislation to legislation however what is important is the implementation of right/ correct system which can demonstrate organizational behavior for better treatment of stakeholders. As elaborated by OECD (2004) implementaion and availability of an effective Corporate Governance system enables Organizations to provide a level of confidence which is necessary for the proper functioning of a market and economy as a whole.

CORPORATE GOVERNANCE MATURITY

Corporate governance itself cannot achieve anything unless certain measuring tools are incorporated to assess its performance and impact on organization. As mentioned earlier CG can be tick box compliance or can be properly implemented to achieve business goals. In order to measure the CG, governance maturity models are utilized which defines whether organizational governance is heading towards accomplishment of goals or not. In accordance with Deloitte (2010) Corporate Governance Maturity is an industry skeptical framework that lists significant features amalgamated with five distinct levels of maturity on the scale of becoming a better governed organization. Furthermore CGM can also assist Organizations to identify where CG competencies may be positioned on a maturity range. CGM is the first step towards understanding that where the Organization stand towards governance. The big

question here is to identify that whether the governance can be measured or not? As stated by Cattrysse (2005) the fact that corporate governance encompasses so many different kinds of aspects, both 'hard' and 'soft', indicates that perhaps some of them can be measured more easily than others. Since hard aspects coincide largely with aspects of compliance, there may well be a possibility to measure this 'compliance'. As for the so-called 'soft' aspects (beyond the numbers), which are to be situated largely in the 'control environment', the question is not so easily answered. While we should consider cultural and national differences, some soft aspects may be perceived as more or less important depending on the country the company is situated in. Examples of this are environmental concerns, and child labor. There are several tools available for the measurement of Governance provided by OECD, COSO, OCEG, and Deloitte. In Governance Risk Compliance (GRC) capability module defined by Switzer, Mitchell, and Mefford (2015) there are 8 elements that need to be measured and this includes principles and critical success factors. These elements are defined in the below mentioned diagram.

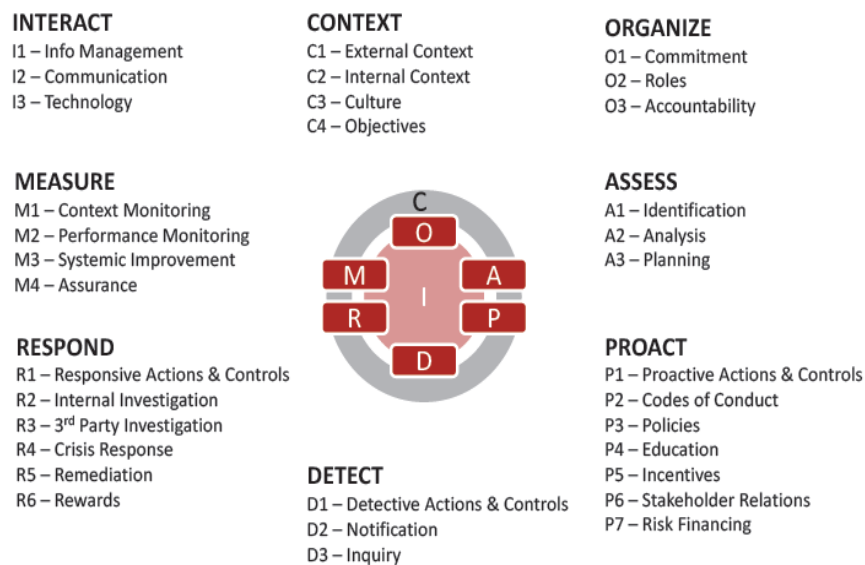


Fig. 2: Elements of GRC Capability Model
 Source: Switzer et al. (2015)

If the above mentioned elements are measured properly and deployed they will result in the following universal outcomes:

1. Achieve business objectives
2. Enhance organizational culture
3. Increase stakeholder confidence
4. Prepare and protect organization
5. Prevent, detect, and reduce adversity and weakness
6. Motivate and inspire desired conduct
7. Improve responsiveness and efficiency
8. Optimize social and economic value

As mentioned earlier, this should be the first step made by the organization in order to know that where it stands. What are the weaknesses in the system and how they can be rectified? The major players that can assist and improve the system are Internal Auditors, Forensic Accountants and Management with some mandatory pressure from Government.

CONCLUSION

In summary, CG is a system which provides the platform for organizations to perform in a manner which will be beneficial to all stakeholders. History is filled with events where organizations collapse because of poor or non-availability of CG. Poor CG is referred to a term where CG is present but it's not implemented in a manner which can ensure the achievement of organizational goals i.e. if CG is only utilized as compliance check box then it can never produce results. CGM is the requirement for all organizations where it will calculate the CG standing and also identify the gaps between actual and planned performance.

Although there is no standards or regulations for FA but ever changing business environment created the need for it. Fraud is increasing and can result in a colossal problem for any business. Whether the fraud involves financial or non-financial matters, FA is the best choice especially when auditors denied the fact of identifying fraud. FA is an important aspect of any organization which can assist in achieving CGM and develop effective mitigating controls. Currently, FA role is not utilized up to its full potential and is only utilized when fraud occurs i.e. as detective control instead of preventive control.

Thus, FA seems to have vital role towards enhancement of CG. As mentioned by Zabihollah and Larry (2007) and Eyisi and Ezuwore (2014) although considerable reforms are created but still much need to be done to restore public trust and investors confidence moreover failure of statutory auditors compelled the need of FA. As mentioned by Eyisi and Ezuwore (2014), Young (2013), Bhasin (2013), Vinita (2005) and Enofe, Ekpulu, and Ajala (2015) FA can be associated with CG in following areas which in turns enhances the Maturity of CG:

1. Improve management accountability
2. Improve statutory audit function
3. Assist audit committee
4. Improve independence of auditors

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FACTORS THAT INFLUENCE CORPORATE GOVERNANCE FAILURES IN MALAYSIA

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ABSTRACT

In this modern competitive world, corporate failure has been debated as it had an adverse effect on many people such as shareholders, employees, suppliers, and also gives a diverse impact on the local as well as international communities. This paper explores the impact and how to overcome corporate failure in Malaysia. The first part of the paper describes all the relevant facts about the company selected. In this section, will review the corporate scandal happen and factors that leads to corporate failure by using theory of fraud diamond. The second part of the paper explores the recommendation and challenges that are needed to address corporate failure. The recommendations include having the basic fundamentals of a good company culture such as integrity, transparency, accountability which starts from the tone at the top. Organizations need to also review their internal control systems such as strengthening their standard operating procedure and controls to ensure all weaknesses in controls are addressed. Organizations also need to strictly enforce the laws and regulations as well as implement on-going monitoring to ensure that all parties, internal and external comply with the laws and regulations set. Lastly, the paper will share the lessons learned from the two cases examined.

Keywords: Theory of the fraud triangle, corporate failure, integrity

INTRODUCTION

CEO of Mitsubishi Corporation, B. Minoru Makihara has once stressed that "As governments throughout the world reduce barriers to trade, and investors insist on being able to purchase securities in any company, regardless of its domicile, understanding and evaluating corporate governance systems is absolutely essential". (Monks and Minow, 2000).

In the Malaysian perspective, The Malaysian High Level Finance Committee on Corporate Governance (Finance Committee, 1999,p.52) defines the term corporate governance as "the process and structure used to direct and manage the business prosperity and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate

objective of realizing long-term shareholders value, whilst taking into account the interests of other stakeholders.” This definition that corporate governance is concerned with internal and also external controls. Then, Gatamah (2004) has stressed that corporate governance is focused with the social political as well as legal environment in which the organization operates, systems practices and procedures by the formal and informal rule. This issue stressed the significance of integrity, transparency and accountability while conduct the business.

This study was produced with regard to corporate governance failure issues. Nowadays, corporate governance has emerged as a global issue. The findings of a survey by McKinsey (2002) found that majority of investors would be prepared to pay a premium to invest with a company with good and effective corporate governance. The survey stressed that good corporate governance includes a majority of independent outside directors, significant director share ownership, formal director evaluation as well as quick response to shareholders’ requests. So, effective corporate governance are significance for the stability of economics, and socials. However, there have been a number of companies around the world that have collapsed because of corporate failure. One significant case is, Enron which used to be one of the successful companies that had collapse because of corporate failure issue. Another case is Parmalat, a successful foodstuff industry in Italy also collapsed in December 2013 because of poor corporate governance.

Malaysia has also experienced corporate governance cases such Perwaja Steel, Sime Darby and also the Malaysia Airlines. Some views that the reason corporate failure in Malaysia is because of the Asian Economic Crisis in 1997. Generally, effective corporate governance is determined by a number of factors which includes quality board of directors, quality audit committee, quality internal control system, effective of internal audit function, independent external audits as well as quality board of directors.

CORPORATE GOVERNANCE FAILURE

Many studies have explored the relationship between corporate governance and corporate performance. In contrast, only a few studies have looked at corporate governance and corporate failure. Even though interest in corporate governance has grown rapidly in recent years with the global increase in the number of corporate failures such as Enron, WorldCom, HealthSouth and Arthur Anderson; the role of corporate governance in corporate failure has been largely neglected (Lakshan and Wijekoon, 2012). The researchers also mention that it is because of lack of consistent policies, control procedures, guidelines and mechanisms to ensure accountability and fiduciary duty. Poor corporate governance can increase the probability of corporate failure even for firms with good financial performances. This paper summarizes two corporate failures in Malaysia and examines what could go wrong? What might be done to prevent such collapse from happening? And what are the effects of governance failure? There are three main objectives of the study. The first one is to analyze factors that contribute to corporate failure among companies in Malaysia. Fraud Diamond theory will be used as a basis of highlighting the causes that has led to the poor corporate governance failure. The paper will then end with the recommendations and lessons learned on how to overcome the corporate failure which can act as a guide for future cases.

PRIOR LITERATURE

According to International Monetary Fund (IMF, 1999), the ASEAN crisis was infected by the domestic policy weaknesses, including poor risk management. Poor risk management was reflected by weak corporate governance as the report on corporate governance (2002) states:

“Corporate governance is the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long term shareholder value, whilst taking account the interests of other stakeholders”.

The Malaysian Code on Corporate Governance (2000) requires that there is a balance of power and authority between Chairman and Chief Executive Officer so that no one individual has unfettered powers of decision. It is recommended that a strong independent element should be induced and publicly explained in the event of CEO duality. However, Donaldson and Davis (1991) and Brickley et al. (1997) argue that a joint leadership structure results in a more clear and transparent communication between management and the board of directors. This is basically based on the kind of industry that they are involved in. Different type of industry requires different leadership style.

In summary, there are many factors that trigger corporate governance failure. What is important is communication and ethics which Grunig (2001) indicates that responsiveness is consistent with both the two-way symmetrical views of corporate communication and the stakeholder model of organizational ethics. Over the year Malaysia has different prime minister, From Tun Dr Mahathir Mohamad era, next Tun Abdullah Ahmad Badawi and currently prime minister which is Dato’ Sri Najib Razak, Malaysia has improved and continues improvement the laws and also anti-corruption agency. Below are the diagram of the development of anti-corruption laws in Malaysia and the development of anti-corruption agency in Malaysia.

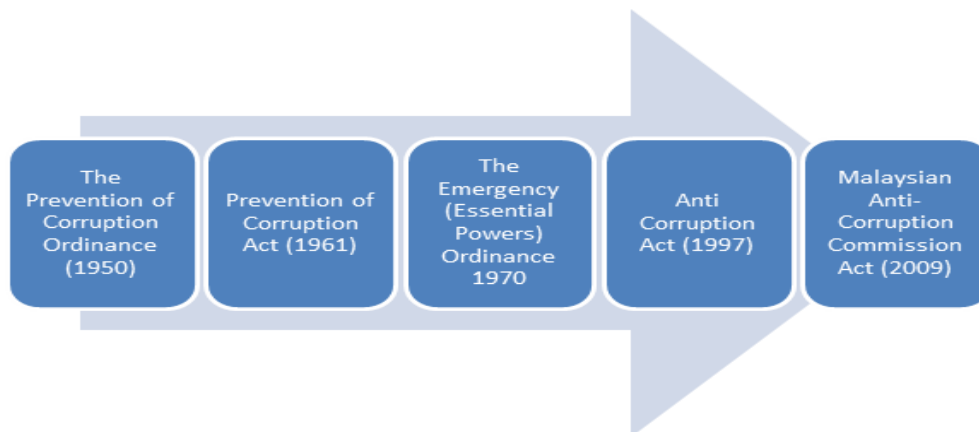


Figure 1: The development of anti-corruption laws in Malaysia

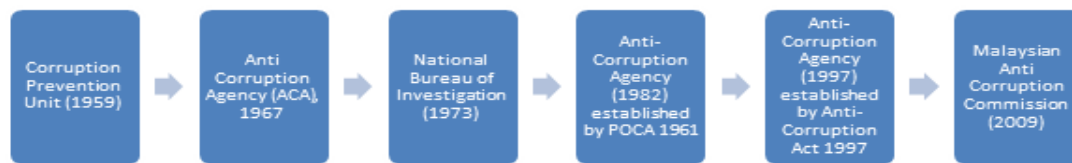


Figure 2: The development of anti-corruption agency in Malaysia (Yusoff et al., 2012)

GOOD CORPORATE GOVERNANCE

Recently, in one conference on integrity and governance organized by Women’s Institute of Management (WIM), Former Deputy Prime Minister, Tun Musa Hitam has stressed that a company’s directors and managers were practicing good corporate governance when they are ensured transparency as well as accountability in decision making, applied corporate social responsibility and at the same time cared about the shareholders. These are indeed essential elements if companies want to be run well. (“Corporate governance-a shared responsibility,”2016). Other than that, the honourable Prime Minister, Dato Seri Najib Tun Razak has set a general goal for 2050 National Transformation for Malaysia (TN50) to become a top 20 country in the world by the year 2050. For this purpose, the honourable Prime Minister has announced that government will create a creativity and innovation index as a reference to achieve TN50. (“TN50- journey to the top 20 begins today,” 2017). In addition to this, Dato Seri Najib Tun Razak added that this index is important to organisation, company as well as to nation so that it would be competitive.

The honourable Prime Minister, give an example of the situation of Nokia, which at one time was a big telephone company but now have been dominated by smartphones likes Apple, Samsung and Huawei. He stressed that this occur as the companies strategically adopt innovation to keep them competitive and relevant within the industry. Same goes to the government; public servants must deliver government service more efficiently and at the same and with integrity. (“TN50- journey to the top 20 begins today,” 2017). In summary, efficiency of the public service can be developed through good corporate governance and by having good corporate governance; it can help government to achieve vision 2020 and also TN50. There are three examples organisations that practices good corporate governance in Malaysia. Firstly, Perbadanan Kemajuan Negeri Selangor (PKNS) is one of the good example government agencies that have good corporate governance after the management committed to improve the standards operating policy and procedures. General Manager of PKNS, Noraida Mohd Yusof claimed that PKNS has not only managed to reduce its operating cost through good corporate governance but garnered many other assets. Besides that, PKNS has also achieved savings of 13 per cent through a more transparent and effective open tender system. Other than that, another alternative to promote good corporate governance by PKNS is the management have appointed an independent director to sit on their Board of Directors and three representatives from the Finance Ministry to monitor auditing issues. (“PKNS model of good corporate governance,” 2016). This is ensured the transparency as well as accountability of the organisation.

Other than that, DiGi.Com Berhad is one of the example good corporate governance. Digi known as company that conducting its business in accordance with the highest ethical standards and maintaining a workplace environment that encourages open and honest communication. DiGi has adopted the code of conduct, anti-corruption policy, no gift policy, suppliers' code of conduct and HSSE policy. (Corporate Overview, Retrieved from www.digi.com.my).

Last but not least, Thumbprints Utd Sdn Bhd (TUSB) a company which specialized in print books, trade promotion materials, and cardboard packaging is the first Small Medium Enterprise (SME) Company implements its own Zero corruption Programme that explained in the company's code of business ethics. Moreover, TUSB also the first SME practise Corporate Integrity Pledge (CIP) when it introduced by the Malaysian Anti-Corruption Commission (MACC) in 2011. Above all, TSB is one example company that practice good corporate governance in their operation and management. TSB implement ethical operation, management and production systems and at the same time the company has a strong commitment to training and product improvement. (NKRA E-Newsletter, April 2015) As a result, TUSB able to deliver high quality products on time and on budget which lead to increasingly competitive in global market. Suruhanjaya Syarikat Malaysia (SSM) has a Code of Ethics placed on their website which all company in Malaysia need to be practiced. In the performance of his duties, a director should at all times observe the following Code of Ethics for Company Directors which can refer in their website. (Code of Ethics for Company Directors, Retrieved from www.ssm.com.my).

CORPORATE GOVERNANCE ISSUES IN MALAYSIA

The corruption perception index (CPI) 2015 has ranked Malaysia number of 54 among 168 countries with a score of 50 out of 100. This is a drop from rank 50 out of 175 countries in CPI 2014 (Transparency.org). Due to that, Transparency International Malaysia (TI-M) President, Datuk Akhbar Satar has come out with several recommendations on how to improve the rankings. Among the suggestions are there is need for MACC to be independent so that it can perform its duties efficiently. Besides that, the government itself needs to eliminate the culture of secrecy and also established political funding laws. ("Malaysia ranked 54 among 168 countries in the Corruption Perception Index," 2016). Generally, the CPI is an important indicator as the ranking describes on how corrupt the public sector of one country. The CPI ranking represents how much the country committed to eliminate unethical behavior likes fraud.

In addition to this, currently, Malaysia scored 5.16 points out of 7 on the 2016-2017 Global Competitiveness Report (GCR) published by the World Economic Forum. The GCR is an annual report that combines 114 indicators that integrate both macro and micro economic aspects of competitiveness. Furthermore, International Trade and Industry Minister, Y.B. Dato'Sri Mustapa Mohamed, has stressed that external factors is the main reason Malaysia scored 5.16 compared to last year which scored 5.23. Among the external factors includes the global economic uncertainty, the strong US dollar, the fall in commodity prices as well as the slowdown in China's economy. ("Malaysia's global competitiveness ranking in line with economic slowdown," 2016).

This paper also highlights two case studies in Malaysia, which are referred to as Company X and Company Y. The corporate governance failure was detected by the Malaysian Anti-Corruption Agency (MACC) and as a result the top management for both companies has been charged with corruption. As for these two companies, both have uncertainty in their financial statements. In addition, company X as well company Y also do not comply to the procedures regarding tendering and contract enforcement. Both leaders of companies X and Y have been reported to be involved in a grand corruption, which includes major abuse of power which has led to the breakdown of good corporate governance.

It was also stated that there is an element conflict of interest present in these two companies. As an example, in company Y the board of directors and chairman are also controlled by one family. As for company X, the director misuse the company money for their own interest. This also can be called as conflict of interest. Company X have been operated since 2006. Their companies are more to the contract farming which involving product marketing throughout Malaysia.

The occurrence of fraud in these two companies has given an adverse impact to the corporate governance standard in Malaysia. Hence, in the long term effect, this case can affect the confidence of foreign investments and at the same time affecting Malaysia economy.

THEORY OF FRAUD DIAMOND

Fraud diamond existed after fraud triangle which only added new one which is capabilities. Previously it has opportunity, pressure and also rationalization in fraud triangle. This happen because those three elements is not going to happen if the fraudster does not have capabilities to do fraud. As have been said by Wolfe and Hermanson (2004) that fraud will happen if the fourth element (capability) is also present as he or she must have the skills and ability to commit fraud. Below figure shows the fraud diamond which taken from Wolfe and Hermanson (2004).

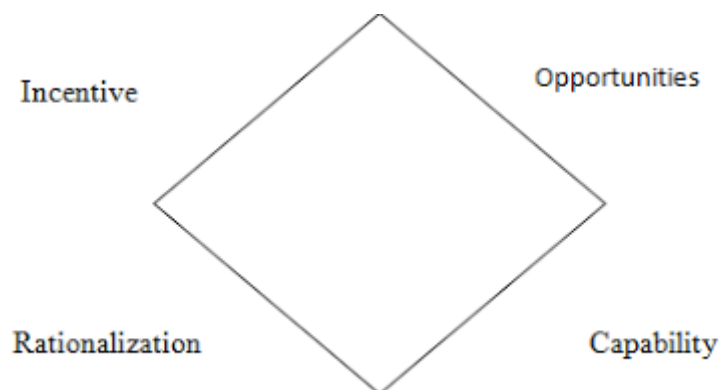


Figure 3: The fraud diamond (Wolfe and Hermanson, 2004)

Perceived Incentive/ Pressure/ Motive

Previous studies have different perspective on pressure. As Albrecht et al. (2008, 2010) divided pressure/motive into financial or non-financial. Murdock (2008) divided pressure into financial, non-financial, political and social. Rae and Subramaniam (2008) studied employees' motivation and financial pressure dimensions. Chen and Elder (2007) identified six basic categories under pressure which are transgression of obligations, problems originated from individuals problems, corporate inversion, position achievement and relationship between employees. All of studies refer that perceived pressure or incentives relates to the motivation that leads to unethical behaviour.

Based on the case study that has been discussed earlier, in terms of pressure, top managements for both companies will feel pressure as they want to compete with other company with the same industry. It also can be a pressure for a person that first time did business and thought can generate high profit in any kind of business. Pressure is motivating crime to be happening in the first place.

Perceived Opportunity

According to Kelly and Heartley (2010), the concept of perceived opportunity lead people takes advantage of circumstances available to them. Fraudster will take an opportunity when they make an assumption that the employer is unaware, the assumption that employees are not checked regularly for violating organizational policies, the belief that no one will care with what they did and none of them consider their action or behaviour is serious offense (Sauser, 2007). This is due to weak control system in company as not realize what is happening. Andrew (2012), opportunity refers to a weakness in the system where the employee has the power or ability to exploit the situation and, making fraud possible. The weak board of directors, lack of control, failure to discipline fraud perpetrator, and lack of access information is example the fraudster take opportunity to do fraud. Ewa and Udoayang (2012) stated that fraud can be done by someone that have gained sufficient knowledge of how to commit the crime successfully without fear and stress plus, the internal control are weak.

As an illustration, from the case study above, we can clearly observe that the top management are able to commit fraud when there is a weak internal control as well as poor management oversight. They believe that no one will notice if funds are taken, begins the fraud with a small amount of money. Then, the amounts grow larger. In this context, both companies have failed to review its standard operating procedure to ensure public funds are not misappropriated for personal interest. So, it is more important that the internal control such as supervision need to be effective and efficient.

Rationalization

Rationalization refers to justification that their action is not unethical and it is not a crime. This will lead to fraud activities. According to Cressey (1953), rationalization of fraud make fraudster said that "I was only borrowing the money", "I was entitled to the money", "I had to steal to provide for my family", "I was underpaid or my employer had cheated me." If the

person has integrity, those all word will not be mention as what Rae and Subramanian (2008) said that rationalization is a justification of fraudulent behaviour because of an employee's lack of personal integrity, or other moral reasoning. This is also due to past situation where none of action taken when they did unethical behaviour previously and tend to do it again as they thought they will never get caught. According to Kenyon and Tilton (2006), whenever fraud has occurred in the past and management has not respond appropriately, fraudster will conclude that issues are not taken seriously and can get away from it.

In cases that have been mentioned, the fraudster said or make a reason sometimes can be heard logic. They will say that they did not know it is wrong or they will accuse the company for set to high objective that they need to achieve. Since it is hard to achieve, they tried to use an "easy" way by doing fraud.

Capability

Usually person that commits crime is someone that has necessary traits and abilities and has capability to pull it off. The fraudster has recognized this particular fraud opportunity and can turn it into reality. Position, intelligence, ego, coercion, deceit and stress, are the supporting elements of capability (Wolfe and Hermanson 2004). The fraudster is someone that capable to exploit internal control weakness and take that as their advantage for unethical behaviour. Fraudster very confidence with their doing since they are not easily to get caught, According to Wolfe and Hermanson (2004:40), the more confidence the person, the lower the estimated cost of fraud will be. Furthermore, fraudster is very confidence since they are an important person and have high influence on others. Albrecht et al. (1995) believe that only the person who has an extremely high capacity will be able to understand the existing internal control, to identify its weaknesses and to use them in planning the implementation of fraud. It is quite difficult to caught fraudster that is in high position as according to Wolfe and Hermanson (2004:39), the person position or function within the organization may furnish the ability to create or exploit an opportunity to unethical behaviour or fraud for not available to see from others.

Both cases that mentioned the fraudster are someone that are in high position. They thought they will not get caught since the fraudster is an important person in a company. Other employee also does not dare to blow the whistle as they will lose the job. The fraudster seems to control their employee so that they will not get caught and no one will dare to report their wrong activities.

CHALLENGES AND RECOMMENDATIONS

Generally, there have been many alternative to address this issue. But, still the challenges to avoid corporate failure occur. Based on the previous analysis, several actions need to be taken to overcome this issue.

Firstly, there is need to establish a good company culture. This can be done by all the parties from lower to top management create integrity as a culture and norms in the company. Lack of

integrity and accountability is the main reason corporate failure occurs based on the two case studies above. One quote from Ahamd Shauqi, Arab poet has said that "Nation survive as long as their morality is alive, when morality is gone, they too perish."

Besides that, Warren Buffet has once said that "In looking for people to hire, you look for three qualities. The qualities include integrity, intelligence, and energy. And if you don't have the first, the other two will kill you. If you hire somebody without integrity, you really want them to be dumb and lazy." These two quotes indicate that the value of integrity is really an important subject matter.

An initiatives made by Malaysian Anti-Corruption Commission (MACC) is to produce an academic book entitled 'Islam and the Issue of Corruption is a good alternative. This book generally can help people to have better understanding about corruption and the implications from the perspective of religion and society. Moreover, it can educate people to practice integrity in daily life. This book focuses on corruption from the Islamic point of view and also lessons from the Prophet Muhammad (PBUH). ("MACC launches 'Islam and the issue of Corruption', 2015).

Ethics can be described as the process by which individuals, social groups and societies evaluate their actions from the perspective of moral principles and values. (Blackburn, Klayman and Malin, 1985). In terms of Islamic perspective, ethics is related to the principle of trust or amanah. If a person has a strong value of trust or amanah, he or she will become responsible, sincere to the customers, community as well as environment.

To sum up, it is highly recommended an organization to have the right person and at the right place for the right decision. It is also depend on the systems or regulation to ensure good performance of the company; and also need to ensure the integrity of the person who involves in the decision making. Without integrity, everything would be meaningless. Another recommendation is every organization need to ensure the effectiveness of their internal control system. This means that each company needs to implement effectiveness and efficiency of operations, transparency in financial reporting and also the company's' compliance with laws and regulations. This will reduce the capabilities of someone in high position to do fraud, as other employees aware that there is a channel to report the fraudster activities. If internal control system is good, the person will not dare to do fraud as they will get caught easily. They will also no opportunity for them.

Standard Operating Procedure (SOP) is very crucial in every organization as it can effectively monitor financial transaction, allocation as well as the selection and award of projects tendered. Having a good Standard Operating Procedure is to ensure public funds are not misappropriated for personal objective. The purpose of this code of ethics is to create integrity, responsibility and trustworthy leaders. The right tone at the top is also important as employee tends to follow what leader does. Opportunity to do fraud will be lower as what they did need to be reported. Fraud activities can be detected if they not follow SOP accordingly.

Next is enforcement and monitoring. All the organization in Malaysia has laws and regulations in guiding corporate failure. However, having the strong laws is not enough, but the top

management must be supported by efficient enforcement as well as monitoring. Enforcement and monitoring need to be implemented without fears. As an illustration, the organization needs to strengthen the roles of corporate governance such as strengthening the requirements on the audit committee as well as board of directors characteristics. However, corporate governance is not just about law; it is also about directing and controlling a company through practices, structures and processes. The fraudster will not have an opportunity to do fraud as they have been monitored. They will be no reason when they said they did not know it is unethical as enforcement has been done. Rationalization will reduce and all employees and employers will do their job with integrity.

After that, leaders need to ensure they always monitor the performance of the company so that the company always keeps on the right track. As an illustration, in the case of Sabah Water Department, The Deputy Chief Minister Tan Sri Joseph Pairin Kitingan, claimed that they need to set up a monitoring system. (“Sabah’s colossal corruption,” 2016). Hence, on-going monitoring is crucial which includes regular management and supervisory activities. Then, it is better to have external auditors or someone outside from the company for the check and balance purpose. Overall, this will help by ensuring that the organization is properly run, managed and accountable to the stakeholders.

Based on the two case studies above, government agencies have to implement value management by ensuring that the projects really benefit the target groups. As an example, our honorable Prime Minister, Dato Seri Najib Tun Razak also has encouraged public servants to implement value management in the management of all government projects. He gives an example that there is special reward will be given to any officials or group of officials who perform the best in giving major reduction of the cost. (Najib Razak, 2010). This is important as it will increase public confidence towards the ability of civil servants. If not, it will give a bad impression among the public about the ability of civil servants in managing their funds.

In addition to these, Chief Secretary to the Government, Tan Sri Ali Hamsa has proposed that government worth RM5000 million and above should require the participation of the Auditor-General and the Malaysian Anti-Corruption Commission (MACC) in order to combat corruption. (“Projects worth RM500m and above must now include AG, MACC to avoid corruption,” 2016). The involvements of both agencies are crucial as it is a proactive method to prevent leakages as well as corruption in the public service. This alternative can be looked as a new paradigm to overcome corporate failure issue in Malaysia.

LESSONS LEARNED

Corporate governance is crucial when majority of big companies collapse. Every country around the world especially Malaysia has tried their best to find solution in addressing this issue. Currently, there are many alternatives done by government to build up the good image and reputation for corporate governance. Based on the analysis, one important lesson to be learned is that integrity as well as accountability reflects good corporate governance. Tan Sri Dr Abdul Samad Alias, former president of the Malaysian Institute of Accountants, “Integrity is really a matter of who you are when no one is around”. (Ishak and Hasnah, 2016). In this

aspect, accountability refers to the responsibility of public servants towards the government expenditure. Organizations must be wise its spending wastage and mismanagement must be eliminated from expenditure.

Corruption issues can only be discussed if basic issues like the level of integrity and honesty are resolved first. These elements need to be inculcated within the organization. Good corporate governance can be achieved if economy and technology efficiency is present and there is social and spiritual development. It can be seen from the two cases discussed that lack of integrity and accountability among top management are the main reasons for corporate failures. Civil servants are custodians of the public interest and thus must uphold the trust of the civil servants at all times.

What is more important is that every company must observe their code of ethics and how to perform or behave ethically. Ethics means 'doing the right things'. Corporate values can be influenced from within an organization, but what is important is corporate values are derived from the top. Basically every individual must play their role as many people practice normative behaviour. According to Gillian Fournier the normative social influence involves conforming in order to be accepted or liked by a group, not necessarily because one actually believes the things one is doing or saying. Meaning to say normative is like to follow what other doing. That is why top person need to behave goods and follow code of ethics, as their employees will follow. In addition to this, another crucial lesson that can be learned is managing the risk associated with the business efficiently. This is important as it can help top management make best use of their available resources. There are seven steps that companies need to identify. The basic process includes:

- i. Establishing the context
- ii. Identifying the risks
- iii. Analyzing the risks
- iv. Evaluating the risks
- v. Treating the risks
- vi. Monitoring and reviewing and the lastly
- vii. Communicating the risks

The Malaysian government, under the leadership of the honourable Prime Minister, Dato Seri Najib Tun Razak is very committed to ensure that the corporate governance should be competitive by adopting the right ethical values in running the organisations.

To have good corporate governance, every party including the regulatory agencies, professional bodies, corporate leaders as well as shareholders and investors need to cooperate to enhance corporate governance in Malaysia. Like Hamka has said that, "In the 1960s, while we are now able to create cities and modern concrete jungle, yet at the time the soul of inhabitants appear to be empty and bereft of meaning."(Ishak and Hasnah, 2016).

Former Bank Negara Malaysia (BNM) Governor, Tan Sri Zeti Akhtar Aziz has stressed that institutional building need to involve strong governance to provide the structural foundation necessary to ensure survival in more challenging times. She also added that weak governance

in both the private and public sectors have resulted in poor investment decisions, excessive risk taking as well as irregular practices. Besides that, failure of corporate governance will lead to loss in financial term and at the same time loss of reputation. ("Good governance imperative for building sustainable institutions,"2016).

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OWNERSHIP CONCENTRATION AND R&D INVESTMENTS? VARIATIONS BROUGHT BY FAMILY CONTROL IN TAIWAN

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ABSTRACT

This study finds that ownership concentration has a positive impact on R&D investments up to a critical point, after which the impact is reversed. Further, the study indicates that family control has a moderating effect on the nonlinear relationship between ownership concentration and R&D investments. More specifically, family-controlled firms are influenced by ownership concentration to a lower extent than non-family controlled firms. Consistent with most prior studies, this study shows that shareholders of a family-controlled firm are involved in the long-term decisions of the firm, and may thus invest in R&D innovation to seek long-term profit maximization in certain situations.

Keywords: Ownership concentration; R&D investments; Family control; Moderating effect; Excess control

INTRODUCTION

The effect of ownership is particularly interesting in the context of research and development (R&D) investments, given that “R&D was causing efficient firm scale to increase to the point where no individual, family, or group of managers would have sufficient wealth to own a controlling interest in major firms” (Holderness, 2014). This study examines the relationship between ownership concentration and R&D investments as well as the moderating effect of family control on the relationship. Prior studies (Chen, Li, Shapiro, & Zhang, 2014; Zhang, Li, Hitt, & Cui, 2007) document that ownership structure is related to a firm’s R&D activities. Chang, Chung, and Mahmood (2006) and Baysinger, Kosnik, and Turk (1991), in particular, claim that shareholders with concentrated ownership prefer to make long-term R&D investments to increase the stability of the firm rather than seek short-term profit

maximization. Similarly, Lee and O’neill (2003) find that ownership concentration in US firms is positively correlated with R&D investments.

Consistent with this argument, our empirical results indicate that R&D investments increase with ownership concentration up to a critical point, after which the relationship turns negative. The former observation confirms that blockholders’ decision making in a concentrated ownership firm may be long-term oriented, which may encourage shareholders to make more R&D investments. The latter observation indicates that once a mass of blockholders’ wealth is concentrated in a specific firm, the blockholders with highly concentrated ownership become risk averse (Dilling-Hansen, Madsen, & Smith, 2003) and are reluctant to spend on R&D investments. This finding is consistent with Cho (1998), who shows that a nonlinear relationship exists between insider ownership and R&D investments.

Prior studies on family-controlled companies argue that the preference to employ family members to hold positions as directors, supervisors and/or managers causes these firms to lose expertise, particularly in terms of R&D technologies. Such nepotism is common in family-controlled firms because family members own a majority of the shares (Tsai, Hung, Kuo, & Kuo, 2006) which allows them to act for their own benefit or at the cost of other shareholders’ interests (Chu, 2009). Thus, family control in firms may result in less R&D investments (Choi, Zahra, Yoshikawa, & Han, 2015). However, Hamadi and Heinen (2015) document that family members would be associated with the firm for generations and their decisions regarding the firm would be long-term oriented. These confounding findings imply that family members may vary from one firm to another. Besides, the uniqueness of family-controlled companies in pursuing corporate goals also indicate that family-controlled companies are more heterogeneous as compared to non-family controlled firms. This study thus calls this intuition into question by examining the relationship between ownership concentration and R&D investments.

Taking family control as a moderator, we find a nonlinear, inverted U-shaped relationship between ownership concentration and R&D investments for non-family controlled firms. However, the potential impact of ownership concentration on R&D investments can be observed only minimally in family-controlled firms, suggesting that shareholders in family-controlled firms aim for long-term profit maximization (Anderson & Reeb, 2003; Schulze, Lubatkin, & Dino, 2003). More specifically, the findings indicate that family-controlled firms may have higher R&D investments as compared to non-family controlled firms, when ownership concentration is at an extremely low level or at an extremely high level. These results are in line with the findings of the study by Jaggi, Leung, and Gul (2009) that family control is a moderating element on the relationship between board independence and earnings management. In addition, Lo, Ting, Kweh, and Yang (2016) document the moderating role of family control on the relationship between ownership structure and financial leverage.

This study makes at least two contributions. First, rather than assuming that shareholders with a concentrated ownership deal with R&D investments in a linear way (Chang et al., 2006), this study empirically suggests a nonlinear relationship between ownership concentration and R&D investments; this relationship is particularly obvious in non-family firms. This study highlights the existence of risk aversion when ownership of a firm is highly concentrated in some blockholders.

Second, this study clarifies the difference in R&D investments between family-controlled firms and non-family controlled firms. Our finding is consistent with the study by Hamadi and Heinen (2015), which indicates that there is no effect of ownership concentration on the performance of family-controlled firms. In contrast to prior studies (Choi et al., 2015), we prove that family-controlled firms may not always be reluctant to spend on R&D investments as compared to other types of companies. While family owners are conservative and risk averse (Schulze et al., 2003), they aim for long-term profit maximization and thus, would be willing to spend on R&D investments (Chang et al., 2006).

The following sections are organized as follows. The next part discusses prior studies and develops hypotheses. The third part explains data and methodology, while the following one covers tests and results. The final part concludes this study.

PRIOR STUDIES AND HYPOTHESES DEVELOPMENT

Empirical studies on the ownership concentration-R&D relationship produce mixed results. Ortega-Argiles and Moreno (2009) agree that ownership concentration has a significantly negative relationship to R&D as the action of the managers in risky decisions are limited, thereby moving the firm away from the benefits of specialization. Consistently, Zeng and Lin (2011) suggest that firms with concentrated share ownership and inside ownership have lower R&D spending but state ownership has higher level of R&D spending for Chinese listed firms. This is due to the fact that state ownership provides incentives to closely monitor management and pursue long term goals, thus reducing agency cost and promotes R&D spending. Moreover, Karray and Kriaa (2009) indicate that ownership structure especially foreign controlled firms have a significant negative impact on R&D investment. State and foreign controlled firms are said to have less probability and motivation to innovate. While the former is subjected to bureaucracy and lack of communication that subsequently reduced the innovative incentives, the latter are motivated by weak cost of labour and often subcontracting to produce innovation. In contrast, Lee (2012) found that there is a positive effect of ownership concentration on R&D for the sample of 424 Korean manufacturing firms from 1999-2008.

The prediction about the overall effect of ownership on the R&D of a firm is unclear. Therefore, this study attempts to further investigate this relationship in Taiwan. We hypothesize the following:

Hypothesis 1: *Ownership concentration is significantly related to R&D.*

Despite the vital role that family businesses plays in the economy, little is known about how family ownership affects R&D of the firms. Hence, this papers makes the first attempt to test the moderating effect of family control on the relationship between ownership concentration and R&D. In other word, the study further establishes the fact that family ownership identity plays a significant role in determining the R&D, given the concentrated ownership which is lacking in literature.

DATA AND METHODOLOGY

This study employs a large panel dataset comprising data related to firms that are publicly listed on Taiwan Stock Exchange for the period from 1999 to 2014. The data were extracted from the Taiwan Economic Journal (TEJ) database. The following criteria were applied to filter the data: first, the total assets of each observation must be at least NTD 1 billion to prevent the small firm effect; second, the observations must not have a missing value for any variable in our empirical models; third, the sample must not include financial institutions because they have different statutory requirements. The final sample, thus derived, in this study comprised 15,721 firm-year observations for analyses.

The following paragraphs describe the methodology used for the empirical analyses in this study. Specifically, we followed the tradition of empirical studies to examine the relationship between R&D investments and ownership concentration using regression analysis. Consistent with prior studies (for an example, Hovey, Li, & Naughton, 2003), two main measures were used to examine the impact of ownership concentration on R&D investments, *OC3* and *OC5*, which represent the respective percentages of shares held by the top three (*OC3*) and top five (*OC5*) blockholders. To control for potential industrial differences and intertemporal effects, we subtracted *OC3* (*OC5*) from the median *OC3* (*OC5*) of the firm’s corresponding industry in that year. Further, we added the value 1 to the industry-adjusted ownership concentration to prevent any negative ratio because the squared terms of both *OC3* and *OC5* have been used in our regression models.

For family control, a dummy variable that represents a firm controlled by a group of people who have a family relationship or share a common family name was used, following Lo et al. (2016). Based on the strict definition given by the TEJ, family-controlled firms are those in which (i) the positions of chairman and chief executive officer are held by family members; (ii) board seating rights are greater than 50 percent and outside directors are less than 33 percent of the total number of directors; (iii) board control rights are at least 33 percent and at least three family members hold positions as directors, supervisors and/or managers; and (iv) the block shareholdings held by the family shareholder(s) are more than the critical control level¹. Finally, the dependent variable, *R&D*, was measured as R&D expenditures relative to total assets, in line with prior studies (Gavious, Hirsh, & Kaufman, 2015; Zeng & Lin, 2011).

To minimize the possible effect of endogeneity on ownership concentration (Chen, Cheung, Stouraitis, & Wong, 2005; Lee & O’neill, 2003), we used the two-stage least squares (2SLS) method to examine the relationship among ownership concentration, family control and R&D investments. At the first stage, this study regressed either *OC3* or *OC5* on family control, board-related features and firm-related features. At the second stage, this study utilized the predicted values of *OC3* and *OC5* as the testing variable of the ownership concentration. Therefore, the following equations were drawn up:

$$\begin{aligned}
 OC_{it} = & \beta_0 + \beta_1 FamC_{it} + \beta_2 MB_{it} + \beta_3 Vol_{it} + \beta_4 FDir_{it} + \beta_5 IDir_{it} + \beta_6 Size_{it} + \beta_7 Age_{it} \\
 & + \beta_8 ROA_{it} + \beta_9 CR_{it} + \sum_s \gamma_s Year_{s,it} + \sum_u \lambda_u Industry_{u,it} + \varepsilon_{it}
 \end{aligned}
 \tag{1a}$$

¹ Critical control level is “the critical portion of shares which, if it is held as the largest bloc, has a certain degree of control, which is high enough for it to be said to dominate the company” (Cubbin & Leech, 1983, p. 358).

$$R \& D_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 FamC_{it} + \beta_3 IDir_{it} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 ROA_{it} + \beta_7 Profit_{it} + \beta_8 LTDR_{it} + \beta_9 CapI_{it} + \beta_{10} InvI_{it} + \beta_{11} CR_{it} + \sum_s \gamma_s Year_{s,it} + \sum_u \lambda_u Industry_{u,it} + \varepsilon_{it} \quad (1b)$$

where *R&D* is the ratio of R&D to total assets; *OC* can be either *OC3*, which is Top 3 ownership percentage or *OC5*, which is Top 5 ownership percentage; *FamC* is family control; *MB* is the ratio of market value to book value of equity; *Vol* is σROA_t in the industry; *FDir* is the ratio of foreign directors to total directors; *IDir* is the ratio of independent directors to total directors; *Size* is the natural logarithm of total assets; *Age* is the natural logarithm of years of establishment; *ROA* is the ratio of earnings before interests and taxes to prior-year total assets; *Profit* is the ratio of continuing operations' income after taxes to total sales; *LTDR* is the ratio of long term debt to total assets; *CapI* is the ratio of fixed assets to total assets; *InvI* is the ratio of inventory to total assets; and *CR* is the ratio of current assets to current liabilities. The control variables are included based on prior studies including Chen et al. (2014), Zhang et al. (2007), Chang et al. (2006), Baysinger et al. (1991), and Lee and O'Neill (2003).

To examine the moderating effect of family control on the relationship between ownership concentration and R&D investments, we include an interaction term of *OC* and *FamC*. Specifically, we estimate the following equation:

$$R \& D_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 FamC_{it} + \beta_3 OC \times FamC_{it} + \beta_4 IDir_{it} + \beta_5 Size_{it} + \beta_6 Age_{it} + \beta_7 ROA_{it} + \beta_8 Profit_{it} + \beta_9 LTDR_{it} + \beta_{10} CapI_{it} + \beta_{11} InvI_{it} + \beta_{12} CR_{it} + \sum_s \gamma_s Year_{s,it} + \sum_u \lambda_u Industry_{u,it} + \varepsilon_{it} \quad (2)$$

TESTS AND RESULTS

Table 1 shows the descriptive statistics for the explanatory variables of our sample. The table shows that *R&D* investments account for nearly 2 percent of the sample firms' total assets. The means and medians of *OC3* and *OC5* are close to one, reflecting that they are industry-adjusted indicators. Mean family control (*FamC*) indicates that around 62 percent of the sample firms are family-controlled. The average market to book (*MB*) ratio of the sample firms is 157 percent, while the mean volatility (*Vol*) is 0.11. In terms of board composition, the proportion of foreign and independent directors on the board is approximately 2 percent and 14 percent, respectively. The average firm size (*Size*) is 8.64 (logged value), indicating average total assets of approximately NTD 5.653 billion. The average logged value of 3.09 for years of establishment (*Age*) shows that the sample firms have been in business for 22 years. With respect to return on assets (*ROA*), the reported mean value is 0.07. Mean *Profit* indicates that the total income after taxes from continuing operations of the sample firms is 3 percent on average. The average total long-term debt to total assets ratio (*LTDR*) for the observed period is around 11 per cent. Furthermore, around 30 percent and 17 percent of the sample firms' total assets are made up of fixed assets (*CapI*) and inventories (*InvI*), respectively. The average current ratio (*CR*) of 2.50 suggests that NTD 1 of the sample firms' current liabilities is covered by NTD 2.50 of their current assets.

Table 1: Descriptive statistics (N = 14,573)

Variable	Mean	Median	Q1	Q3	S.D.
R&D/total assets (<i>R&D</i>)	0.02	0.01	0.00	0.03	0.03
Top 3 ownership percentage (<i>OC3</i>)	1.02	1.00	0.90	1.13	0.17
Top 5 ownership percentage (<i>OC5</i>)	1.02	1.00	0.90	1.12	0.16
Family control (<i>FamC</i>)	0.62	1.00	0.00	1.00	0.48
Market value/book value of equity (<i>MB</i>)	1.57	1.21	0.80	1.88	1.41
σROA_t in the industry (<i>Vol</i>)	0.11	0.10	0.08	0.13	0.04
Foreign directors/total directors (<i>FDir</i>)	0.02	0.00	0.00	0.00	0.07
Independent directors/total directors (<i>IDir</i>)	0.14	0.00	0.00	0.29	0.17
Natural logarithm of total assets (<i>Size</i>)	8.64	8.39	7.69	9.27	1.27
Natural logarithm of years of establishment (<i>Age</i>)	3.09	3.18	2.75	3.53	0.58
Net income/total assets (<i>ROA</i>)	0.07	0.06	0.02	0.12	0.12
Continuing operations' income after taxes (<i>Profit</i>)	0.03	0.04	0.01	0.10	2.67
Long term debt/total assets (<i>LTD</i>)	0.11	0.08	0.02	0.17	0.11
Fixed assets/total assets (<i>CapI</i>)	0.30	0.29	0.16	0.43	0.19
Inventory/total assets (<i>InvI</i>)	0.17	0.14	0.08	0.21	0.15
Current assets/current liabilities (<i>CR</i>)	2.50	1.73	1.29	2.53	5.20

Note: *OC3* is Top 3 ownership relative to total outstanding shares, which is defined as *OC3* subtracts median *OC3* of the industry plus one to avoid having any negative values. *OC5* is Top 5 ownership relative to total outstanding shares, which is defined as *OC5* subtracts median *OC5* of the industry plus one to avoid having any negative values. *FamC* = A dummy variable equals one if company *i* is family-controlled, and zero otherwise.

In Table 2, all the observations of the study have been grouped in two categories, based on family control and the level of R&D investments. The findings indicate that family-controlled firms have significantly lower *R&D* and *MB* ratio compared to those of non-family controlled firms (0.0163 vs. 0.0311 and 1.4600 vs. 1.7119, respectively). Morck and Yeung (2003) claim that family-controlled firms prefer to maintain their control on firms, which may conflict with focusing on R&D investments. Morck and Yeung (2004) further emphasize that family owners are not well-equipped with advanced or complex technology, suggesting that new development or changes may be perceived as a threat by them. These findings corroborate the findings of Sirmon, Arregle, Hitt, and Webb (2008), Chen and Hsu (2009) and Muñoz-Bullón and Sanchez-Bueno (2011) who agree that family-controlled firms and R&D investments are significantly and negatively related. Because owner-managers have a strong preference for control (Goffee & Scase, 1985), family-controlled firms may entail higher ownership concentration to maintain their decision-making authority in the firm.

Furthermore, a firm is more likely to be a non-family controlled firm in the groups of higher volatility, higher proportion of foreign directors and independent directors, higher *ROA* and current ratio. The mean difference tests also indicate that family-controlled firms are significantly larger in firm size, older in terms of firm age, and more profitable; further, they have more fixed assets and inventories over total assets compared to non-family controlled firms. Overall, most of the differences are statistically significant at the conventional levels.

Table 2: Sub-group analysis

Variable	Grouping by <i>FamC</i>				Grouping by <i>R&D_Dum</i>			
	Family	Non-Family	Difference	<i>t</i> -stat	High	Low	Difference	<i>t</i> -stat
R&D	0.0163	0.0311	-0.0149	-26.04***				
OC3	1.0414	0.9885	0.0529	19.34***	1.0160	1.0275	-0.0116	-4.21***
OC5	1.0367	0.9889	0.0478	17.67***	1.0136	1.0242	-0.0107	-3.93***
MB	1.4600	1.7119	-0.2519	-10.90***	1.7713	1.3925	0.3788	16.31***
Vol	0.1016	0.1135	-0.0119	-18.51***	0.1083	0.1049	0.0033	5.16***
FDir	0.0129	0.0252	-0.0123	-10.26***	0.0207	0.0155	0.0052	4.24***
IDir	0.1189	0.1670	-0.0482	-17.53***	0.1594	0.1256	0.0338	12.17***
Size	8.6861	8.6131	0.0730	3.48***	8.5670	8.7033	-0.1364	-6.48***
Age	3.2064	2.9351	0.2712	28.96***	3.0362	3.1451	-0.1089	-11.36***
ROA	0.0633	0.0766	-0.0133	-6.90***	0.0581	0.0420	0.0160	8.97***
Profit	0.0388	0.0161	0.0226	0.53	0.0404	0.0229	0.0175	0.39***
LTDR	0.1244	0.0967	0.0277	14.77***	0.0965	0.1244	-0.0278	-15.10***
CapI	0.3249	0.2706	0.0544	17.52***	0.2886	0.3147	-0.0261	-8.44***
InvI	0.1705	0.1596	0.0110	4.43***	0.1565	0.1802	-0.0237	-9.64***
CR	2.3251	2.6685	-0.3434	-4.12***	2.6082	2.4056	0.2026	2.35**

Note: Refer to Table 1 for the definitions of the variables. ** and *** denote the significance levels at 5% and 1%, respectively.

With respect to the comparison based on R&D levels, a firm with higher R&D investments is more likely to have a higher *MB* ratio, greater volatility, higher proportion of foreign directors and independent directors, larger ROA, greater profitability and higher current ratio, of which the mean differences tests are all significant at the conventional levels. Conversely, this univariate analysis reveals that firms with low R&D investments have significantly higher ownership concentration compared to that of firms with high R&D investments. In addition, firms with low R&D investments tend to have significantly larger firm size, higher firm age, higher fixed assets to total assets, and more inventories over total assets than firms with high R&D investments.

As stated earlier, this study adopts the two-stage least squares (2SLS) method to address the endogeneity issue with respect to the relationship between ownership concentration and R&D investments. Panel A of Table 3 reports the 2SLS regression results using *OC3* as the dependent variable at stage 1 and *R&D* as the dependent variable at stage 2. At stage 1, this study regresses ownership concentration on family control and additional variables. The empirical evidence at stage 1 depicts a significantly positive relationship between family control and ownership concentration. This result is consistent with Lo et al. (2016), asserting that ownership concentration and family control are simultaneously influenced by one another.

At stage 2, the empirical findings show that ownership concentration positively influences R&D investments. This result is consistent with Lee (2012) who argues that shareholders with concentrated ownership are usually long term-oriented because their profits depend on the firm's long-term survival. More specifically, blockholders have incentives to spend on R&D investments.

This study further examines the moderating effect of family control on the relationship between ownership concentration and R&D investments. A significant moderating effect of family control exists in the link between ownership concentration and R&D investments, whereby the coefficient on *OC3 x FamC* is -0.0968. Interestingly, the positive coefficient on

$OC3$ (0.0740) and the negative interaction variable (-0.0968) suggest that the slope for family control is close to zero. The untabulated F-test that examines the net effect of family control confirms the result at the conventional 5 percent significance level. Overall, this finding indicates that the effect of family control on R&D investments is less influenced by ownership concentration.

Further, this study uses squared $OC3$ to test a possible nonlinear relationship between ownership concentration and R&D investments. The positive coefficient on $OC3$ (0.5303) and the negative coefficient on $OC3^2$ (-0.2163) conclude that a nonlinear relationship exists between ownership concentration and R&D investments. The results imply that at a low level of ownership concentration, as ownership concentration increases, blockholders are willing to spend more on R&D investments. However, after a critical point, blockholders with more ownership concentration invest in R&D on a decreasing curve owing to their risk aversion.

Another interesting result was found regarding the effect of moderating coefficients on $OC3 \times FamC$ and $OC3^2 \times FamC$, being significantly negative (-0.6179) and significantly positive (0.2518), respectively. Again, the results demonstrate the moderating role of family control, where $FamC$ moderates the non-linear relationship between ownership concentration and R&D investments. The untabulated F-test indicates the net values of $OC3$ and $OC3 \times FamC$ are approximately zero (F-statistics = 0.18). A consistent result was obtained for the net values of $OC3^2$ and $OC3^2 \times FamC$ (F-statistics = 0.14). These results indicate that the relationship between ownership concentration and R&D investments is represented by an inverted U-shaped curve for non-family controlled firms; however, the effect is minimal for family-controlled firms. More specifically, while R&D investments of non-family controlled firms are influenced by ownership concentration, the effect of ownership concentration is less pronounced among family-controlled firms. These results suggest that R&D investments in family-controlled firms are higher than those in other firms on average in two scenarios—when the ownership concentration is at a low level and when the ownership concentration at a high level.

Following Lean, Ting, and Kweh (2015), Ehikioya (2009), and S. Lee (2012), we use $OC5$ as an alternative measure of ownership concentration. The estimations are shown in Panel B of Table 3, and the results are qualitatively similar to those in Panel A of Table 3.

Table 3: 2SLS regression results – ownership concentration (N = 14,573)

Panel A: Ownership concentration = <i>OC3</i>										
Dependent Variable	Stage 1: <i>OC3</i>				Stage 2: <i>R&D</i>					
	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat
Intercept	1.0995	67.88***	0.1075	13.84***	-0.0114	-0.96	-0.2529	-3.02***		
<i>OC3</i>			0.0362	3.81***	0.0740	7.01***	0.5303	3.41***		
<i>OC3</i> × <i>FamC</i>					-0.0968	-8.12***	-0.6179	-2.74***		
<i>OC3</i> ²							-0.2163	-2.95***		
<i>OC3</i> ² × <i>FamC</i>							0.2518	2.37**		
<i>FamC</i>	0.0695	24.98***	-0.0086	-10.43***	0.0906	7.40***	0.3586	3.00***		
<i>MB</i>	0.0058	5.40***								
<i>Vol</i>	0.3485	19.30***								
<i>FDir</i>	-0.0476	-0.79								
<i>IDir</i>	-0.0132	-12.48***	-0.0015	-6.61***	-0.0009	-3.73***	-0.0007	-2.49**		
<i>Size</i>	-0.0189	-6.83***	-0.0096	-18.01***	-0.0075	-13.06***	-0.0072	-12.25***		
<i>Age</i>	0.0787	6.33***	-0.0001	-0.04	-0.0063	-2.58***	-0.0079	-3.17***		
<i>ROA</i>	0.0003	0.62	-0.0002	-1.77	-0.0002	-1.73*	-0.0002	-1.77*		
<i>Profit</i>			-0.0238	-8.97***	-0.0231	-8.74***	-0.0228	-8.57***		
<i>LTDR</i>			-0.0279	-16.71***	-0.0259	-15.55***	-0.0261	-15.66***		
<i>CapI</i>			-0.0170	-7.29***	-0.0155	-6.67***	-0.0157	-6.74***		
<i>InvI</i>			0.0002	3.40***	0.0002	3.28***	0.0002	3.34***		
<i>CR</i>	0.0710	7.61***	0.0111	6.01***	0.0070	3.61***	0.0059	2.87***		
Fixed effects	Yes		Yes		Yes		Yes			
Adj. R ²	0.0858		0.2441		0.2530		0.2534			

Panel B: Ownership concentration = <i>OC5</i>										
Dependent variable	Step 1: <i>OC5</i>				Step 2: <i>R&D</i>					
	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat
Intercept	1.1262	70.68***	0.0172	1.55	-0.0127	-1.08	-0.1967	-2.65***		
<i>OC5</i>			0.0409	4.46***	0.0733	7.24***	0.4207	3.06***		
<i>OC5</i> × <i>FamC</i>					-0.0827	-7.47***	-0.5374	-2.80***		
<i>OC5</i> ²							-0.1646	-2.55**		
<i>OC5</i> ² × <i>FamC</i>							0.2190	2.41**		
<i>FamC</i>	0.0643	23.46***	-0.0087	-11.26***	0.0758	6.69***	0.3105	3.07***		
Control Variables	Yes		Yes		Yes		Yes			
Fixed effects	Yes		Yes		Yes		Yes			
Adj. Rsq.	0.0932		0.2500		0.2508		0.2531			

Note: Refer to Table 1 for the definitions of the variables. *, **, and *** denote the significance levels at 10%, 5% and 1%, respectively. Fixed effects include year and industry.

Although ownership concentration is widely used in existing studies to measure the level of concentrated ownership, for ensuring the robustness of the test, this study further employs excess control (*EC*) as another proxy of ownership concentration (Cubbin & Leech, 1983). Higher excess control implies a higher level of ownership concentration, and owners with a significant amount of shareholding may take aggressive actions over managerial decisions. According to Lee (2012), excess control is calculated as the difference between ownership controlled by the ultimate controlling shareholders and the critical level of ownership that ensures the retention of controlling rights.² We calculate ownership as the sum of the percentage of direct and indirect shares held by the ultimate controlling shareholders. This formula could be a better measure of ownership concentration because it represents the amount of shares owned by individual investors and large blockholders. Therefore, we replicate the estimations in Table 3 by using excess control. The results in Table 4 reconfirm the existence of a nonlinear relationship between excess control and R&D investments, which is also moderated by family control.

² Readers are requested to refer to footnote 1 for the definition of critical control level.

Table 4: 2SLS non-linear regression results – excess control (N = 14,573)

Dependent Variable	Stage 1/DV = <i>EC</i>		Stage 2/DV = <i>R&D</i>	
	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat
Intercept	1.0184	74.13***	-2.1626	-7.85***
<i>EC</i>			3.4531	7.17***
<i>EC</i> \times <i>FamC</i>			-2.1049	-3.83***
<i>EC</i> ²			-1.2562	-5.94***
<i>EC</i> ² \times <i>FamC</i>			0.9768	4.11***
<i>FamC</i>	0.0679	28.77***	1.0764	3.39***
Control variables		Yes		Yes
Fixed effects		Yes		Yes
Adj. R ²		0.1513		0.2613

Note: *EC* = Ownership – critical control level in percentage + 1, whereby ownership indicates the sum of percentage of direct and indirect shares held by the ultimate controlling shareholders. *, **, and *** denote the significance levels at 10%, 5% and 1%, respectively. Fixed effects include year and industry.

CONCLUSION

By using the 2SLS regression method, we show that a nonlinear inverted U-shaped relationship exists between ownership concentration and R&D investments. This implies that ownership concentration influences a firm’s R&D investments, and thus, this effect should be highlighted in innovation improvements. Our analyses suggest that shareholders with concentrated ownership increase their R&D investments up to a critical point. However, after the critical point, R&D investments decrease with an increase in ownership concentration owing to risk aversion. Moreover, the two abovementioned relationships are moderated by family control.

Overall, this study has broad implications for literature on this topic. First, this study shows that the relationship between ownership concentration and R&D investments is nonlinear. Furthermore, this study provides empirical evidence that family control may not always entail low levels of R&D investments, as compared to other types of companies. In addition, the findings suggest that investors may consider investing in firms with family involvement because family-controlled firms consider the firms as their long-term belongings for several generations and seek long-term profit maximization.

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Concurrent Session IIA
Public Sector Governance

INTERNAL AUDIT CAPABILITY LEVEL: PRELIMINARY STUDY OF FEDERAL AND STATE STATUTORY BODY IN MALAYSIAN PUBLIC SECTOR ORGANIZATIONS

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ABSTRACT

The purpose of this paper is to explain the importance of internal audit in enhancing the good governance of Malaysian public sector organizations. The primary objective is to determine the capability level of internal audit units of the different entities of organizations i.e. federal statutory body (CSA) and state statutory body (CSB). An explanatory case study method was used to collect the data whereby semi structured interviews, informal conversations, questionnaire and document reviews were conducted. It is found that CSA achieves overall capability level 2 with 76% achievement of key process areas (KPAs) while CSB only scores overall capability level 1 with 52% overall percentage achievement of KPAs. However, CSB scores higher percentage for respective elements of services and role of internal auditing, people management and performance management and accountability compared to CSA. Instead, CSA scores 100% achievements of KPAs for other three dimensions i.e. professional practices, organizational relationships and culture and governance structure. There is a critical need to review the dimensions of services and role of internal audit and people management, for both organizations in order to enhance the effectiveness of the IA function. Implications and suggestions for further studies are also provided.

Keywords: Internal audit capability, IACM, Public sector, Statutory body, Malaysia

INTRODUCTION

Internal audit is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations and helps an organization accomplish its objectives by bringing systematic, disciplined approach to evaluate and improve the

effectiveness of risk management, control and governance processes (Institute of Internal Auditors [IIA], 2000). The issues of globalization, transparency, integrity and improvement of government service delivery increase the need for governance and accountability, which leads to the importance of the existence of a quality internal audit function in the organisation. Internal audit emerges as an important component of management and a governance mechanism both in the private and public sectors (Khalid, 2010). The recent global financial crisis has led to questioning of how successful internal audit in its conventional role of monitoring compliance with an internal control and financial probity and its self-proclaimed role as an integral part of the risk management culture within large economic entities, whether in the private or public sector (Alzeban & Gwilliam, 2012).

The internal audit function in the public sector organizations holds a high potential for promoting accountability and improving government performance. Several countries such as Australia, Canada, and United States have developed policies aimed at strengthening public sector internal audit functions to enhance their capacity for contributing to these goals. Some of the policy measures include requiring the establishment of internal audit units; establishment of standards for the professional conduct of internal audit work; training; resource allocation; expanding reporting arrangements and broadening mandates to make auditors responsible for performance assessment (Ali, Sahdan, Saad, & Gloeck, 2012).

Internal audit unit is responsible for monitoring of internal control system as a service to management. In the absence of internal auditing practices, the management needs to apply other monitoring processes in order to ensure that the internal control system is functioning as intended. All government ministries and agencies should improve the effectiveness of their internal control system, and internal audit function because they improve good governance. In general, the establishment of internal control systems ensures effective functioning of any entities. Effective internal control system is essential for the organization's success. (Badara & Saidin, 2013). According to the Auditor General of Malaysia (2015), internal audit function plays a proactive role as a monitoring mechanism and in examining ongoing projects. It may assist public sector entities in achieving their objectives effectively, efficiently, economically and ethically by providing unbiased and objective assessments. Unbiased findings and recommendations represent critical input to good governance that can lead organizations to take prompt and appropriate corrective actions to remedy identified weaknesses and deficiencies (Ahmad, Othman, Othman, & Jusoff, 2009).

Since 2007, Auditor General Reports continuously emphasized there is a need for the internal auditors to expand and improve their auditing competencies. However, the issues of inefficiencies, ineffectiveness and other weaknesses seems to be repeating every year, which results in the loss of billions of Ringgit Malaysia of public money. Due to this, Malaysian public sector organizations have faced widespread criticism regarding their perceived lack of financial discipline, good governance and accountability (Khalid, 2010). Despite its long history and requirement in the organizations, the quality and effectiveness of the internal audit function are been questioned. Therefore, this research is important to identify the level of internal audit capability of public sector organizations. The results will be benefitting the entities studied since they will know their current level and thus will able to take next approach for achieving highest level. They will also able to determine the best level appropriate for their organization.

LITERATURE REVIEW

Overview of Malaysian Public Sector Organizations

Public sector contributions are very important in term of country development. It can be defined as all organizations that are not privately owned and operated, but which are created, managed and finance by the government on behalf of the public. Another definition is a political organization set up with the power to direct, regulate and control the citizen's activities to enable them to live together harmoniously and constructively, and to solve their common problems more energetically and effectively. Public sector organizations work under a strict governmental constitution, regulations, procedures and budget, they need to play their traditional roles and at the same time achieve their ultimate goal i.e. to fulfil the legality and discharge their accountability (Ali, 2015). IIA defines public sector as governments and all publically controlled or publically funded agencies, enterprises, and other entities that deliver public programs, goods, or services (Institute of Internal Auditors Research Foundation [IIARF], 2014).

In Malaysia, the structure of public sector organization comprises of several level and types of organizations i.e. the Federal Governments, the State Governments and the Local Governments as shown in Figure 1. The first two level of the governments enjoy the power in making laws and policies, while the third level only enjoy the autonomy power in term of financial and management decision making. The complexity of structure requires Malaysian government to adopt a comprehensive procedure and guidelines especially related with planning and control on the financial management matters. The main purpose is to provide an efficient and effective mechanism, thus, ensuring the proper usage and management of public resources while achieving the objectives. Hierarchy of related legal provisions is as shown in Figure 2. Continuous developments in the financial management, budgeting and accounting systems put pressure on the Auditor General to review its own techniques and methodologies in auditing so as to play a dynamic role in the accountability (Ali, 2015).

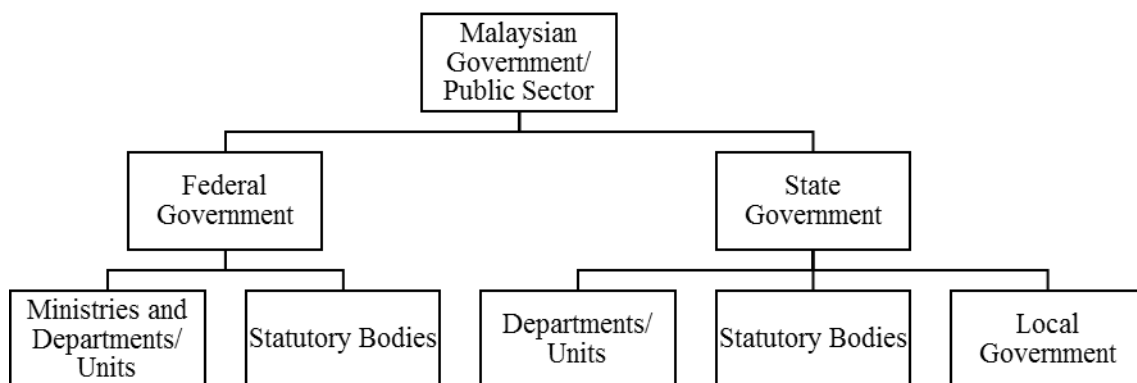


Figure 1: General composition of public sector in Malaysia (Ali, 2015).

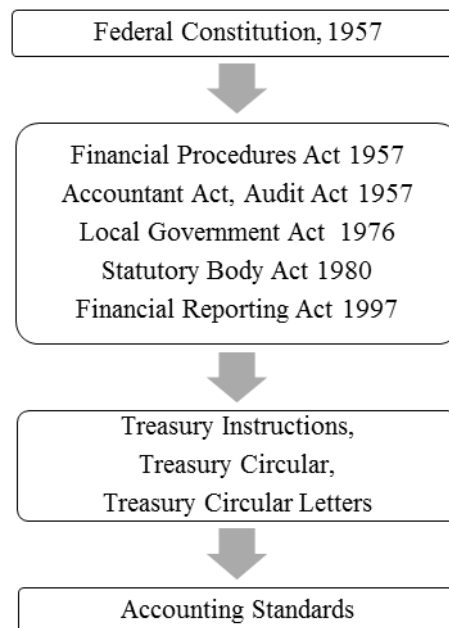


Figure 2: Hierarchy of legal provisions in financial management (Ali, 2015).

Historically, the development of internal auditing in the Malaysian public sector started in 1970 when the Ministry of Defense set up its internal audit department with limited scope of financial audit. Progressively, the scope covered both financial and management audits years later. The recommendation is documented in the Treasury Circular No. 2, 1979 which required all ministries and departments in the Federal Government to establish their internal audit unit or department. Later, the Treasury Circular No. 9 2004 was issued extending the requirement of Internal Audit function at all Ministry, Department and State Government level and to agencies and departments in the State Governments excludes the state agencies, local authorities and state economic development corporations (Ahmad et al., 2009).

In 2011, review and consolidation for all circulars were mandated under 1 Treasury Circular (1PP – 1 *Pekeliling Perbendaharaan* with two main sections i.e. PS 3.1/2013 and PS 3.2/2013. The roles and responsibilities of the Internal Audit unit, Ministry Secretary or Head of Federal Department or State Secretary and the Treasury of Malaysia are outlined in the Treasury Circular PS 3.1/2013. This circular also details the commands of internal audit duties. In Treasury Circular PS 3.2/2013, the requirements and responsibilities of the Audit Committee at both federal ministry and state government level are explained (Ministry of Finance, 2016). Specifically for Federal Statutory Body, Article 106 and 107 of the Federal Constitution and the Audit Act 1957 requires Auditor General to audit the financial statements, financial management, activity Ministries / Departments / Agencies as well as the management company of the Federal Government / Agency and submit a report thereon to the *Yang di-Pertuan Agong* for his assent before tabling them in Parliament. There are four types of audit conducted i.e. financial statement audit, compliance audit, performance audit and management of government auditing. Whereas for State Statutory Body, the requirement of internal audit unit falls under the State Secretary.

There were very few researches conducted from the Malaysian perspective with regard to the Internal Auditing in public sector even though it has important role to play in the enhancement of government agency operations efficiency and effectiveness. It is believed

that the first one was conducted by the Malaysian Institute of Accountants (MIA) in June 1988 (MIA, 1989). Another comprehensive study was published in 2007 where in-depth interviews with internal auditors from 35 states and local government bodies located in Peninsular Malaysia were conducted in year 2003 (Ali et al., 2007). This study revealed interesting findings that audit function in Malaysian state and local governments faces numerous challenges, ranging from staff (resources), skills and training shortages which contributed to the obstructions of auditors in their attempts to perform their duties. However, major questions have remained unanswered when it concerns the practice of internal audit in the nation’s federal government. Hence, a research was carried out by Ali et al. (2012) to study both the good and bad aspects of the internal auditing in the Malaysian federal government. The study disclosed that the discouraging aspects of internal audit function in the federal organizations are concerned with the inadequate number and relatively low competency of audit personnel. Both factors have then contributed to the emergence of other issues, for example limited audit scope and coverage.

The study remarked that the National Audit Department (NAD) and Public Sector Internal Audit Advisory Unit in Treasury need to improve their roles and functions in the public sectors’ internal auditing. The same study discovered that another challenge faced by public sector is the lack of uniformity in the audit practice in the public sector. The importance of uniformity in audit practice is emphasized by several auditors in their interviews. To further elaborate, the study mentioned that there is a need for uniformity among all audit units in the ministries and governmental departments, regardless of financial audit, performance audit and ICT audit. Such uniformity in concern was actually related with standardization in audit structure and audit manual across the government entities Ali et al. (2012).

There is the need to seriously consider the issue of such internal audit effectiveness, as even noted that, only few research been conducted on such internal audit effectiveness within the world (Theofanis, Drogalas & Giovanis, 2011). In line with this, some researchers stressed the need for future research to empirically examine the factors that influence internal audit effectiveness and the possible interactions among them (Endaya & Hanefah, 2013; Chaveerug, 2011; Salehi, Arianpoor & Salehi, 2013) as cited in Badara and Saidin (2013).

Internal Audit Capability

Capability is seen as “the power or ability to do something” (Oxford Dictionaries, 2013). It can be said that every routine activity (Eisenhardt & Martin, 2000) with involved resources, skills and competences construct capability (Teece et al., 1997). Capability refer to the ability to implement and integrate resources to achieve corporate goals, as well as results acquired from long-term accumulation of interaction among various resources (Grant, 1995). Researchers noted that a firm’s competitive advantage may be best explained by the organizational capabilities or competencies and their application, rather than by differences in industry characteristics (Barney, 1991; Teece et al., 1997). Scholars indicate that a capability is an asset that cannot be observed (i.e. intangible) and is traded only as part of its entire unit. It can be valuable by itself, is organization-specific and imperfectly imitable (Barney, 1991; Hall, 1994). The concept of capability models has been developed over the last decade and is well accepted by organisations (Hillson, 1997; Persse, 2001; Chapman 2009) as cited in Rensburg and Coetzee (2011).

The challenge of not having a standard audit practices and assessments across the government entities leads to the deployment of the global Internal Audit Capability Model (IACM). After comprehensive research, the Institute of Internal Auditors Research Foundation, (IIARF, 2009) has developed the internal audit capability model (IACM) for public sector internal auditing. It describes a path level for a public sector organization to follow in developing effective internal auditing to meet the organization’s governance needs and professional expectations. IACM shows the steps in progressing from a level of internal auditing typical of a less established organization to the strong, effective, internal audit capabilities generally associated with a more mature and complex organization. IACM provides a tool that a public sector organization can use to (IIARF, 2009):

- i. Determine its internal audit requirements according to the nature, complexity, and associated risks of its operations;
- ii. Assess its existing internal audit capabilities against the requirements it has determined; and
- iii. Identify any significant gaps between those requirements and its existing internal audit capabilities and work toward developing the appropriate level of internal audit capability.

There are limited researches pertaining to the application of IACM model. Janse and Coetzee mapped the South African public sector legislation and guidance that are regulating the IA practices, to the IACM mode overview of the key process areas (KPAs) that has been addressed. Their research was intended to plot potential weaknesses in the government legislations and guidance as it is indirectly related to its internal audit function. The methodology used to evaluate the capability level of respective elements of IACM is by summing up the capability level achieved by each legislation and guidance. The total average of each element is then summed and average out again to obtain the overall capability level. The resulting of the mapping shows that the South African legislation and guidance achieved a total of 2.93 capability average which translates into coverage of above 50% of the overall KPAs (Rensburg & Coetzee, 2011).

In 2014, MacRae and Gils from the IIARF released a compilation report on a global internal audit survey conducted in year 2010 based on the IACM model. The survey was evaluated based on the IACM and covers majority of the KPAs based on a building-block approach aligning with the IACM concept. A total of 2824 respondents from the public sector were used as samples in this research study. The scope of the survey encompassed over 100 countries and categorized into seven regions. Malaysia and other 39 countries fall under the Asia-Pacific region. It shows that there is an improvement needed for Element 4 “Performance management and accountability” which achieved a total of 54% KPAs, scoring the lowest among the other elements. It was also highlighted that approximately 20% of respondents indicated there was no formal performance measurement of the internal audit activity. This could be a barrier to evaluate the performance of the internal audit activities. Referring to the Regional Averages by Capability Level, most of the Internal Audit from the Asia-Pacific region achieves a capability level of 2 (56%) and level 1 (35%). There is a minimal achievement of Level 3 & 4 (MacRae & Gils, 2014).

In 2015, Fern (2015) has conducted a preliminary study on the internal audit capability model of two public sector organizations in Penang State of Malaysia. The results shows that both cases i.e. Public Sector A (local authority) and Public Sector B (State Statutory Body) achieved an overall capability rating of 2 (Infrastructure) while the average percentage scores of KPAs achievement at 67% and 69% respectively. In her research, it is found that despite various performance assessments established in the Malaysian public sector, yet they are primarily focused on the overall organisation performance measurement only with lack performance tracking system established within internal audit unit. It is also found that even though there is an available performance measurement to assess the performance of internal audit units under the Ministry of Finance Malaysia purview, but it does not include the other internal audit unit in government agencies. Thus, IACM is found to be one of the framework to evaluate the capability of the internal audit unit within public sector organizations which displaying the effectiveness of the internal audit unit (Fern, 2015).

METHODOLOGY

This research used questionnaire as primary data collection method to look at the capability level of internal audit unit. Besides that, interviews were also conducted with the head of internal audit unit/division during distribution of questionnaire in August 2016. Samples of this research were two public sector entities i.e. federal statutory body (case study A) and state statutory body (case study B). Both case studies discussed in this research were taken place in the East Coast Economic Region (ECER) of Peninsular Malaysia which hosts a large number of multinational corporations (MNCS) in the chemical, petrochemical, manufacturing, automotive and biotechnology industries. Internally generated documents made available by the head of internal audit unit– information such as the function of internal audit, internal audit charter were also reviewed. Moreover, to gain deeper insight of the practices of internal auditing in Malaysian public sector organizations, interviews with National Audit Department officers (NAD), Institute of Internal Auditors of Malaysia (IIAM) and researchers from public universities were conducted within December 2015 to March 2016.

Internal Audit Capability is measured by the self-developed checklist suggested by Fern (2015) as recommendation for future studies in her master research. Originally, the measurement is based on Internal Audit Capability Model (IACM) for Public Sector developed by the Institute of Internal Audit Research Foundation (IIARF, 2009). The questionnaires were analysed with two different measurements. The first measurement is based on the building block guideline outlined by the IACM to emphasize the establishment of an effective internal auditing function which cannot be improved if it cannot be sustained (IIARF, 2009). The outcome of the evaluation will summarize the overall capability level which is reflected from each dimension. The second measurement calculates the percentage of KPAs (Key Process Area) achievement from each dimension (Fern, 2015). Each of dimensions were evaluated for its capability levels i.e. Level 2 (Infrastructure), Level 3 (Integrated), Level 4 (Managed), and Level 5 (Optimizing) as shown in Figure 3. The six elements of internal audit capability and its KPA are as shown in Figure 4.

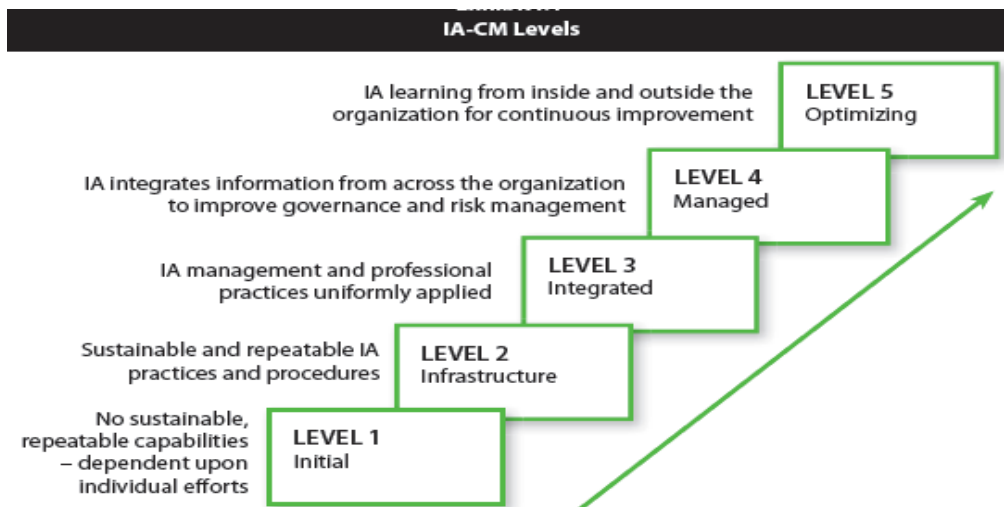


Figure 3: Internal audit capability Level (IIARF, 2009)

The first one is Services and Role of Internal Audit. The ‘services’ of internal auditing refer to the type and extent of services that the IAF provides to a government organization. Internal auditors typically provide assurance services, consulting services or a combination of the two. The types of audit engagements could include, inter alia, compliance reviews, performance audits, financial audits or information technology audits. The ‘role’ of internal auditing refers to the responsibility of the internal auditor to assist the organization in achieving its objectives and improving its operations by providing audit assessments that are independent and impartial. On the highest capability level internal auditing is recognized as a key contributor to change, specifically with regard to the governance processes of the government organization (IIARF, 2009).

‘People management’ constitutes the establishment of a working atmosphere that endeavours to promote the most effective use of internal audit human resources. On the highest capability level the IAF practices workforce projection, which involves the development of a strategic workforce plan in accordance with the strategic objectives of the government organization (IIARF, 2009).

‘Professional practice’ refers to all the policies and procedures that enable the IAF to perform its duties effectively and professionally. These include the ability of the IAF to align its own strategies with the ability of the applicable government organization. On the highest capability level the IAF practices strategic internal audit planning, which entails the adaption of the IAF’s scope of services to the government organization’s future needs. Furthermore, the highest capability level also requires that the IAF continuously endeavours to improve its professional practices in such a way as to develop its capacity (IIARF, 2009).

‘Performance Management and Accountability of internal auditing’ refers to the information required to successfully manage and control the IAF as well as the extent to which the performance of the IAF is reviewed and reported on. On the highest capability level the IAF should have public reporting structures in place to account for the effectiveness of its operations (IIARF, 2009).

	Services and Role of IA	People Management	Professional Practices	Performance Management and Accountability	Organizational Relationships and Culture	Governance Structures
Level 5 – Optimizing	IA Recognized as Key Agent of Change	Leadership Involvement with Professional Bodies Workforce Projection	Continuous Improvement in Professional Practices Strategic IA Planning	Public Reporting of IA Effectiveness	Effective and Ongoing Relationships	Independence, Power, and Authority of the IA Activity
Level 4 – Managed	Overall Assurance on Governance, Risk Management, and Control	IA Contributes to Management Development IA Activity Supports Professional Bodies Workforce Planning	Audit Strategy Leverages Organization's Management of Risk	Integration of Qualitative and Quantitative Performance Measures	CAE Advises and Influences Top-level Management	Independent Oversight of the IA Activity CAE Reports to Top-level Authority
Level 3 – Integrated	Advisory Services Performance/Value-for-Money Audits	Team Building and Competency Professionally Qualified Staff Workforce Coordination	Quality Management Framework Risk-based Audit Plans	Performance Measures Cost Information IA Management Reports	Coordination with Other Review Groups Integral Component of Management Team	Management Oversight of the IA Activity Funding Mechanisms
Level 2 – Infrastructure	Compliance Auditing	Individual Professional Development Skilled People Identified and Recruited	Professional Practices and Processes Framework Audit Plan Based on Management/ Stakeholder Priorities	IA Operating Budget IA Business Plan	Managing within the IA Activity	Full Access to the Organization's Information, Assets, and People Reporting Relationships Established
Level 1 – Initial	Ad hoc and unstructured; isolated single audits or reviews of documents and transactions for accuracy and compliance; outputs dependent upon the skills of specific individuals holding the position; no specific professional practices established other than those provided by professional associations; funding approved by management, as needed; absence of infrastructure; auditors likely part of a larger organizational unit; no established capabilities; therefore, no specific key process areas					

Figure 4: Internal audit capability model matrix (IIARF, 2009).

‘Organizational relationships and culture’ refers to the relational, organizational and cultural structures within the IAF, as well as the position of internal auditing within the government organization it serves. On the highest capability level, the IAF should not only have an effective relationship structure in place within the function itself, but also maintain strong and effective relationships with all the main stakeholders outside of the function, including management and the audit committee (IIARF, 2009).

‘Governance structures’ refers to the reporting structures of the IAF within the government organization. This includes the extent to which the IAF’s administrative and functional reporting structures have been established in the organization. On the highest capability level, the IAF should be totally independent, without any interference from the political or the organization’s management. The power and authority of the IAF should also be clearly in place to enable the internal auditors to perform their duties effectively (IIARF, 2009).

RESULT AND DISCUSSION

Case Study A

Case study A (CSA) is an internal audit unit from one of the federal statutory bodies (PSA). PSA is a public university which offers a wide range of skills-based tertiary education programmes and practical-based tertiary education in engineering, science and technology. Its research focuses on applied research and industrial projects to enrich the teaching and learning processes as well as to promote the commercialization of research products, thus exposing students to the latest research and development activities in the industries. PSA is committed to the development of human capital and technology to fulfil the needs of industries as well as to contribute to the country’s overall development.

CSA was established since 2003 and as of the time research was conducted, it holds three major portfolios i.e. internal audit, integrity unit and risk management. CSA assists and acts as a consultant to the university to ensure the resources are managed and administered in accordance with all regulations. CSA carries out the accountability index rating, financial management audits, performance audits and ICT audits.

The board of the university defined the role of CSA as a part of their supervision. In the university board meeting No 1/99, the resolution of establishment the audit committee (AC) has been approved. Three non-executive board members are appointed. AC meeting should be held at least four times a year or more based on the circumstances / necessity. CSA reports functionally to the AC and administratively to vice chancellor (VC). They communicate and interact directly with AC and is included in executive sessions and meetings whenever requires.

Under secrecy and accountability to protect records and information strictly, CSA is fully authorized and given unrestricted access to all records, physical property and any related materials while carrying out their roles and responsibilities. At least once a year, CSA must submit the audit plan to the AC and VC for review and approval. A written report will be prepared and issued by the CSA after the completion of each audit task. It shall contain management response and corrective action that has been taken or is based on the specific findings and recommendations. This report then will be sent to AC with a copy to the VC,

registrar, treasurer, legal officer and the auditee. Matters that are exposed to high risks, internal controls and governance that have not been resolved will be presented / reported to AC at the meeting. CSA is responsible to follow up on findings and actions taken by auditee upon recommendations. All significant findings will remain the key issues until resolved. A copy of the audit report that have been approved by the university Board of Directors will be sent to the General Secretary of the Ministry of Higher Education Malaysia (MOHE) to comply with the General Circular No. 3/1998 Paragraph 7.2.2 and Financial Circular No. 2/2006 Paragraph 5.

Case study B

Case study B (CSB) is an internal audit division from one of the state statutory body organizations (PSB). PSB serves as the foundation to further the advancement of education, sports, culture and expand opportunities for education among citizens in the State. It aims to be the organization that is a catalyst for the development of world-class human capital which is important for the successful of Vision 2020. As of Aug 2016, there are total of 82 staffs altogether including two staff of internal audit division.

CSB was initially started in 2008 where the warrant for the post of head of internal audit and assistant auditor were issued. Until 2010, there were no personnel officially appointed to fulfil the positions even though the National Audit Department had filed this issue in their audit for Accountability Index Rating. In 2010, the head of internal audit was elected and the internal audit division started to build up their roles and responsibilities with the help of head of internal audit from state secretary office.

While undergoing this study, the proper nomination for the Audit Committee is yet to be endorsed by the Board of Committee due to the replacement of new Chief Executive Officer. Nevertheless, the current CEO gives full autonomy for the head of internal auditor to carry out auditing task due to the limited number of staffs. Operationally, head of internal audit division of CSB is reporting directly to the Chief Executive Officer. Administratively, the head of internal audit division of CSB is still at the level of assistant manager. Thus, she required to report to the head of department.

In 2014, the State Secretary Officer has given the instruction to establish the integrity unit in conjunction with the mandate given by the Prime Minister's Directive No., which is the establishment of the Integrity and Governance Committee (JITU) in all ministries, state secretaries, departments and agencies in ministry. In a clause instructed by the State Secretary Officer, for the state departments and statutory bodies without the human resource for appointment of new head of integrity unit, the head of internal audit unit must play the respective role. Since then, the head of internal audit division of PSB also serves as the chief integrity officer. Besides that, she is also given another portfolio that is to look after the investment division of PSB. Table 1 summarizes the overall findings from both case studies.

Table 1: Summary of findings for case studies A and B

Elements	Case study A	Case study B
Type of Organisation	Federal Statutory Body	State Statutory Body
Head of Internal Audit	Male	Female
Education Level	Bachelor Degree	Master Degree
Professional Certificate	Accounting – Technician Level (CAT/AAT)	Association of Chartered Certified Accountants (ACCA) UK
Membership of IIA	Yes	No
Operational Reporting level	Audit Committee	Chief Executive Officer
Administrative Reporting Level	Chief Executive Officer	Head of Department
Internal Audit Establishment	Unit	Division
Portfolio	2003	2010
Internal Audit Staff	Internal audit, integrity and risk management	Internal audit, integrity unit and investment unit
Average Years of Experience	8	2
Existence of Audit Committee	9 to less than 12 years	6 to less than 9 years
	Yes	No

ANALYSIS AND DISCUSSION

From the analysis of internal audit capability matrix using the questionnaire answered by both head of internal auditor of CSA and CSB, it shows that CSA scored higher overall capability level 2 (infrastructure) while CSB only obtained capability level 1 (initial). CSA also scores higher overall achievement of KPA that is 76% compared to CSB (52%). CSA shows that it achieves level 5 (optimized) for four elements of IACM i.e. professional practices, performance management and accountability, organizational relationships and culture and governance structure while other two dimensions i.e. services and role of internal audit and people management only scored capability level 2. CSB only achieves level 5 for performance management and accountability dimension and level 3 (integrated) for governance structure dimension. Other three dimensions of IACM scored by CSB achieves capability level 2 while people management element scored by CSB only achieves Level 1. Table 2 and 3 illustrate the result mapping of capability level and percentage of KPA obtained by CSA and CSB respectively.

Table 2: Analysis of internal audit capability of internal audit unit in PSA

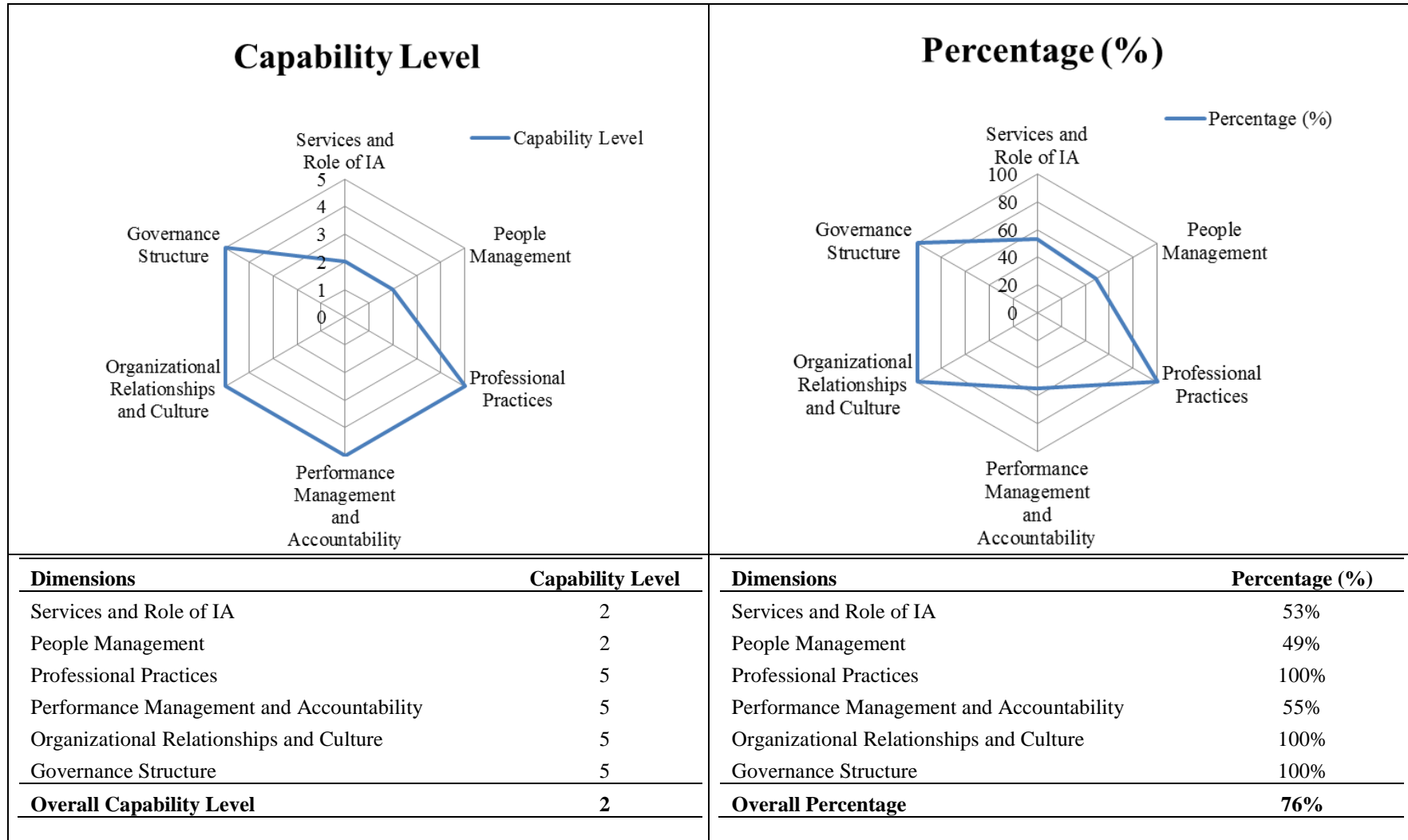
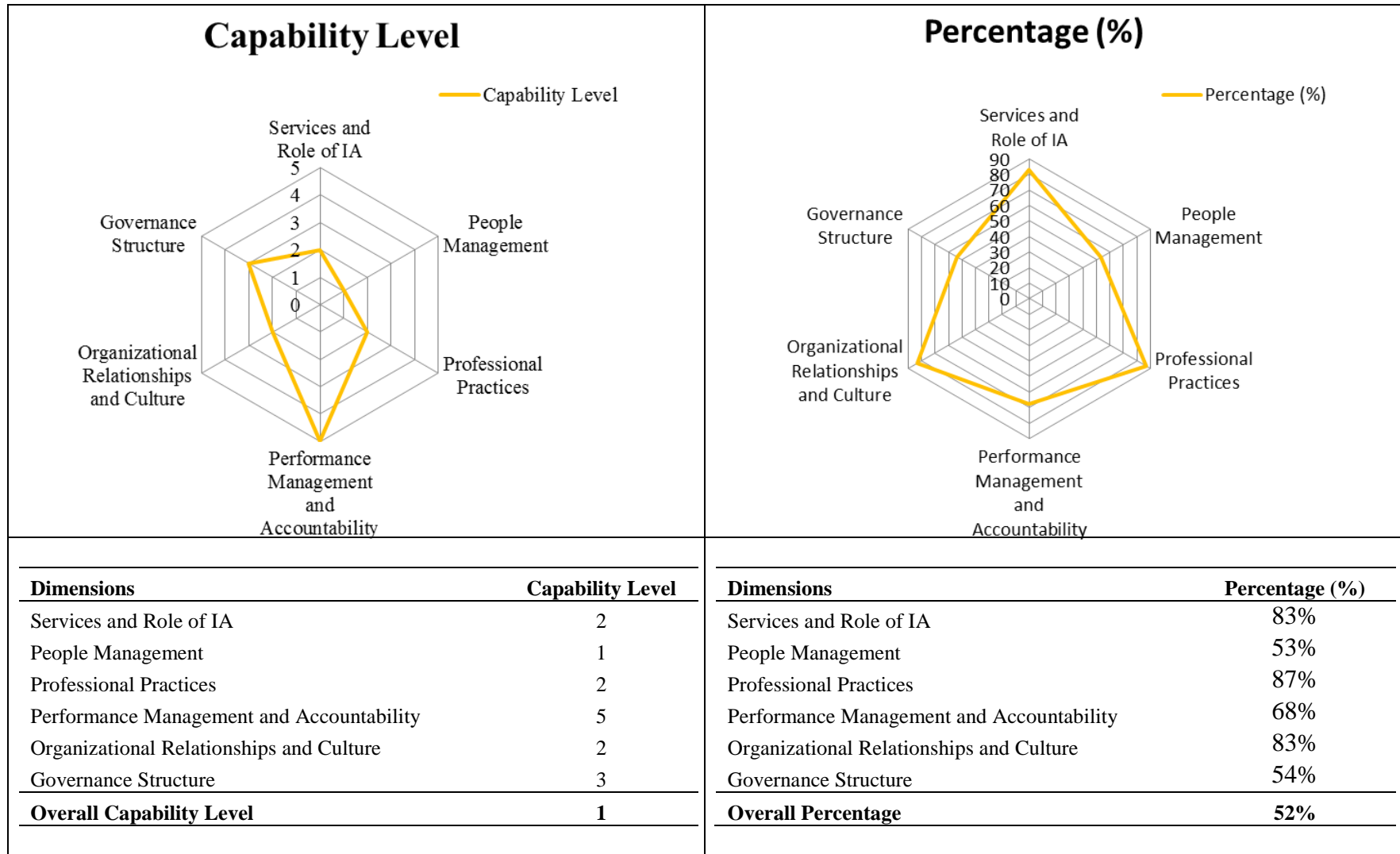


Table 3: Analysis of internal audit capability of internal audit division in PSB

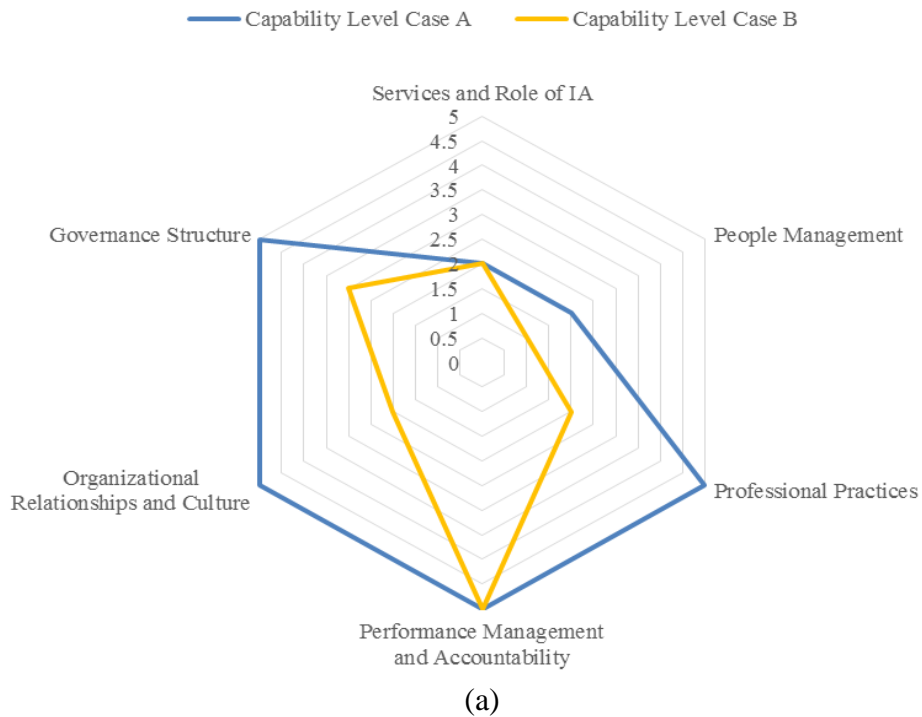


Achieving capability level 2 of services and role of internal audit dimension indicates that both cases merely reviews compliance with policies, contracts and legislation while for people management dimension, achieving level 2 shows that the IAF employs skilled internal auditors and practices individual professional development. On the highest capability level of professional practices as scored by CSA indicates that they are practicing strategic internal audit planning, which entails the adaption of the scope of services of internal audit function (IAF) to the organization's future needs. It requires that the IAF continuously endeavours to improve its professional practices in such a way as to develop its capacity while at capability level 2 scored by CSB, the IAF's plan is based on stakeholder and management priorities as well as having some sort of professional practices framework in place. As for the highest capability level 5 scored by both CSA and CSB, shows that the IAF have public reporting structures in place to account for the effectiveness of its operation performance management and accountability of internal auditing dimension (IIARF, 2009).

On the other hand, the highest capability level scored by CSA for organizational relationships and culture dimension indicates that the IAF have an effective relationship structure in place within the function itself, as well as maintain strong and effective relationships with all the main stakeholders outside of the function, including management and the audit committee. For CSB which scores capability level 2 of this dimension, it indicates that the IAF only focuses on its international relationship structures and operations. CSA scores the highest capability level for governance structures dimension which indicates that the IAF is totally independent, without any interference from the political or the organization's management. The power and authority is also clearly in place to enable the internal auditors to perform their duties effectively while CSB scores level 3 which implies that for this dimension, CSB at least meet the international auditing standard and at least have full access to the organization's data, assets and people with established reporting structure (IIARF, 2009).

From the following comparison in Figure 5, it shows that both cases achieved low level of capability for the first two dimensions of services and role of internal audit and people management. However, CSB scores higher percentage of KPAs achievement for these two dimensions (83% and 53% respectively) including another dimension that is performance management and accountability (68%) compared to 53%, 49% and 55% achieved by CSA. On the other hand, CSA scores 100% for other three dimensions i.e. professional practices, organizational relationships and culture and governance structure while CSB only scores 87%, 83% and 54% of overall KPAs achievement for each dimension respectively.

Capability Level of PSA and PSB



Percentage Achievement of Key Process Area

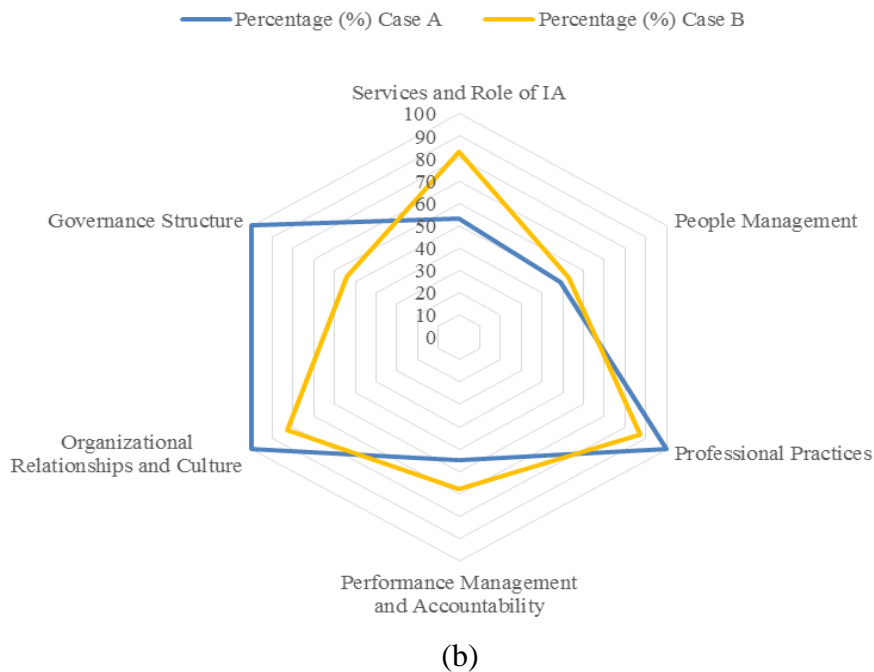


Figure 5: (a) Comparison of capability level and (b) Percentage of key process areas

The result obtained might be due to the nature of both organizations. CSA is a federal level organization that has been established since 2003 compared to CSB, a state statutory body organization that has only been established in 2010. The requirement of establishment of internal audit unit in federal level is stricter according to Treasury Circular PS 3.1 and PS 3.2

2013 while CSB may subject to the restriction / requirement from the State Secretary Office. Besides, CSB has not yet officially endorsed their audit committee. The most crucial factor that contributing for the achievement of capability level 1 by CSB is related to the professional qualification and membership. Since the IACM is developed by the IIA, the requirement of being the IIA membership is one of the elements in Key Process Areas (KPA) of people management dimension. Neither head nor staffs of internal audit CSB have such membership, which is perceived to affect the capability level of this dimension. However, head of internal audit of CSB was able to carry out her task very well with the qualification of ACCA and assistance from the head of internal audit from State Secretary Office at the earlier stage of setting up the internal audit department. Nevertheless, both CSA and CSB have scores low in people management which may impede their performance of audit services. According to Standard 2030 IPPF related to resource management – the Chief Audit Executive (CAE) should ensure that the internal audit resources are appropriate, sufficient, and effectively deployed to achieve the audit plan. Staffing plans and financial budgets, including the number of auditors and the knowledge, skills, and other competencies required to perform the audit work, should be determined from engagement work schedules, administrative activities, education and training requirements, and audit research and development efforts (Institute of Internal Auditors Malaysia [IIAM], 2008).

On the other hand, IPPF Standard 1130 stated that internal auditor should refrain from accepting responsibility for non-audit, operational functions or duties; as happened in both cases where they are required to carry out other functions such as integrity unit (both CSA and CSB) and part of investment unit for CSB. Acceptance of such responsibilities can impair independence and objectivity. Even though in IPPF Standard 1210 has stated that the internal auditors should have sufficient knowledge to identify the indicators of fraud and they are responsible for assisting the companies to prevent fraud, but it is not expected to have the expertise of a person whose primary responsibility is detecting and investigating fraud. Management is responsible for resolving fraud incidents, not internal auditors. Internal auditors should assess the facts of investigations and advise management relating to remediation of control weaknesses that lead to the fraud. They can also advise management in the design of a communication strategy and tactical plan (IIAM, 2008).

CONCLUSION AND RECOMMENDATIONS

It is highly recommended that the internal audit unit should only focus on their auditing services, unless, they have enough staff to do otherwise. CSA should focus on how to advance the capability level of the following dimensions i.e. services and roles of internal audit and people management. They may provide individual internal audit reports the audit staff of CSA should obtain professional certifications in the internal audit profession. It is advisable for CSA to consult with the organization for special incentives to hire/retain internal audit professionals so as to compensate missing skills sets. For CSB, they may focus on enhancing all dimensions except for performance management and accountability which they has scored highest capability level. They may conduct the advisory services; become members of IIA; as well as develop team building within and across the organization. The most crucial step that CSB should take is to obtain the endorsement for Audit Committee which has yet to be done and it is highly advisable for CSB to obtain IIA membership as complimentary to the professional certificates they had.

In summary, IACM is a framework to identify the fundamental requirements for an effective IA function in the public sector. The model will be able to help assist the Malaysian public sector IA units in identifying the KPAs that are needed to establish in order to build a strong foundation of the capability level prior moving to the next. The outcomes of the IACM can then be utilized as a communication tool among the organisation, its stakeholders, at all government levels, and internationally to advocate the essential IA roles (Institute of Internal Auditors Research Foundation, 2009). If the internal audit unit able to perform effectively, the management accounting is rest assured with the control mechanism within company. Indirectly, the organizations can perform well effectively, efficiently, economically and ethically (4Es).

LIMITATIONS OF STUDIES

In-depth studies with more generalize method and bigger sample size should be conducted. This is because this study employed case study method focusing on two organizations only, which result could not be generalized to all Malaysian public sector organizations.

ACKNOWLEDGMENTS

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GOVERNANCE AND MANAGEMENT OF STATE-OWNED ENTERPRISES IN ZANZIBAR – A PROPOSED MODEL FOR EFFECTIVE PERFORMANCE

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ABSTRACT

State owned enterprises (SOEs) are generally considered as inefficient firms due to the political interference, management incompetence and corruption. Despite this, well managed SOEs play crucial role in improving country's economy and boosting social well-being. In Zanzibar, the status of SOEs is not as satisfactory as other countries. There has been a countrywide outcry on the performance of SOEs. Following the reviews of various literatures and government documents, the study on hand has found that the governance of SOEs needs close revision regarding their management structure as there are roles conflicts between the top bureaucrats; the study also found that absence of SOEs policy has been a major bottleneck for the SOEs to perform at a reasonable level as no proper guidelines which direct the SOEs where to go and what to achieve in a specific time period. Furthermore, the study has found that the overstaffing of SOEs in one way or another puts pressure to the management to attain its intended goals resulting to low contribution in the country's economy. The study recommends that SOEs need to be creative and innovative in their undertakings as they have to undertake diversification of their products in order to attract foreign markets significantly. It is also suggested that proper SOEs policy needs to be made in order to give proper directions to the SOEs so that the goal and objectives of their setup can be successfully attained.

Keywords: State owned enterprises, Zanzibar, Corporate governance, Management

INTRODUCTION

Zanzibar is an autonomous part of the United Republic of Tanzania, found in Eastern part of Africa. It consists of two main islands, Unguja and Pemba with a total area of 2,654 sq km. Unguja, which is the largest island, has an area of 1,666 square kilometres while Pemba has an area of 988 square kilometres. It has divided into five regions, three in Unguja (Urban-west, Southern and Northern) and two in Pemba (Northern and Southern), as well as having eleven

districts, seven in Unguja (Urban, Western A, Western B, Central, Southern, Northern A and Northern B) and four in Pemba (Mkoani, Chakechake, Wete and Micheweni) (MoSPORASD, 2016)

Zanzibar got her independence from Arabs on 12th January 1964 through revolution and united with the then Tanganyika on 26th April 1964 to forge the United Republic of Tanzania. However, with the exception of a few union matters such as foreign policy, defence and internal security, immigration, monetary issues, higher education, customs and exercise duty, Zanzibar retains its autonomy over all non-union matters. This is to say, it has her own Government, which is officially called the Revolutionary Government of Zanzibar (RGoZ), with all three organs of the state which are the Zanzibar House of Representatives (Parliament), Judiciary (The Attorney General and Chief Justice) and an Executive (the Revolutionary Council). The RGoZ has responsibility for matters internal to Zanzibar and for overseeing developments in key sectors in Zanzibar. (Zanzibar Constitution, 1984)

The history of SOEs in Zanzibar began far back before and after the revolution in 1964 (RGoZ, 2003). The major aims of their establishment were to create employment opportunities to the people, provide social services as well as contribute in the country's economy (GDP). During that time, The RGoZ provided various presidential decrees which aimed at establishing these enterprises. One of the main decrees was the Public Enterprise Decree of 1966 which led to the establishment of various enterprises such as Zanzibar Insurance Corporation (ZIC), Zanzibar State Trading Corporation (ZSTC) etc.

During the first two decades after independence, SOEs were seen as the principal instrument to achieve economic development. Consequently, the period from 1964 to 1985 saw a rapid growth of SOEs where the number increased from 4 in 1960s to 25 in 1990s. They had a monopoly position in many sectors of the economy, including the import and export of all goods. The SOEs contributed as much as 17 percent of GDP, provided 13 percent of employment, and about 60 percent of the total recurrent revenue of the RGoZ. (RGoZ, 2003).

However, starting in the early 1980s, the performance of the SOEs started to decline, and in 1993 the RGoZ recognized the need for the reform of the SOEs. Subsequently the number of SOEs declined from 25 in 1994 to 12 in 2002. It is worth noting that many SOEs turned out to be not economically viable without the support of the Government, and these SOEs ceased to exist as commercial entities, rather than becoming part of the private sector (RGoZ, 2003).

During the period of 1990s, different countries especially in the developing world, Zanzibar is not an exception, began the move towards privatisation of their SOEs through the structural adjustment programme (SAP). The assumption was that the new efforts would cater for improved socio-economic developments of the country (Mutabaha&Kiragu, 2002). In this move, RGoZ took effort to privatise some of its SOEs which were considered as loss making and unproductive, although the pace of privatisation was not very much effective. In this period, it was also witnessed some SOEs ceased functioning due to a number of reasons including poor

management capacity, absence of corporate governance, overstaffing of employees, low capacity of board of trustees and huge resources drawings by the government (RGoZ, 2003).

In its efforts to rescue the remaining SOEs from collapsing as well as ensuring the effective implementation of the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP), which has been introduced in the past two decades, the RGoZ enacted The Zanzibar Public Investment Act (2002), which repealed the Public Enterprise Decree, of 1978. The new act provides full autonomy and mandate to the SOEs in all organisational aspects which are not limited to recruiting, promoting, transferring, firing, remunerating, and the like in order to execute their daily activities effectively and efficiently. Executives and managers of the SOEs are empowered by the prevailing laws to create different organisational environments and climates which may in one way or another make employees perform at their level best and therefore lead to a better organisational performance.

Section eleven (11) of the Zanzibar Public Investment Act (2002) provides power on staff appointment of SOEs as seen from the following sub sections 1 – 5 here below.

1. Notwithstanding any law now in force, the staff required for the purpose of a public corporation shall be appointed by the Board.
2. Promotion and other disciplinary measures relating to the staff of a public corporation shall be in the hands of the Board and shall be exercised in accordance with the staff regulation of a public corporation.
3. Except on Presidential appointment, no employee or officer of any government department or another public corporation shall be transferred to a public corporation except under the staff regulation of a public corporation.
4. Notwithstanding any provision under this section, any staff of a public corporation may be seconded to a government department or another public corporation and vice-versa for such period and on such terms as may be agreed between such authorities.
5. For avoidance of doubt, it is expressly provided that the Board shall have the power to employ, terminate, dismiss and suspend staff of a public corporation in accordance with staff regulation on such public corporation.

So far, however, the information above shows a clear responsibility of the management to perform their duties in SOEs. Various researches to date in Zanzibar seem to focus on effectiveness of other government organisations and forget about SOEs despite having 7% of the government employees and involving in different production activities. Therefore this paper will in nutshell examine the governance and management of SOEs in Zanzibar. It highlights the economic contribution of SOEs in Zanzibar. Moreover, it proposes the model for better SOEs management and performance.

The paper is organized as follows: Section 2 provides the brief literature review which related to this study. Section 3 explains the methodology used in this study. Section 4 shows results and data presentation. Finally, Section 5 offers concluding remarks on improving SOEs.

LITERATURE REVIEW

Meaning of State-Owned Enterprises

State-Owned Enterprises (SOEs) are those companies where, for various reasons, the state exercises control. These are the corporations established under the state laws and which the government or its agent owns majority of shares or is the sole shareholder. The ownership arrangements and the governance structures vary across countries and sectors (UN, 2008). The Organisation for Economic Co-operation and Development (OECD) definition of SOEs are enterprises where the state has significant control through full, majority, or significant minority ownership. It is a good definition showing the power of the government. Moreover Chinese government defines SOEs as enterprises in which all assets are owned by the state (National Bureau of Statistics, 2002).

According to the European Union, (2016) State-Owned Enterprises (SOEs) are defined as those companies where, for various reasons, the state exercises control. The ownership arrangements and the governance structures vary across countries and sectors. This shows that every country has its own forms of ownership of SOEs. In Zanzibar context, the definition of SOEs has been well articulated in the Public Investment Act, (2002); where in this Act SOEs have been termed as Public Corporations referring to any corporation in which the government or its agents owns majority of the shares or is the sole shareholder.

These definitions have a clear indication that SOEs are engaging in different businesses in which the government as partner takes part in the ownership of the shares, where it can own all the shares as in the case of Zanzibar, or majority of the shares. Since the 1930s, and particularly after the World War II, numerous SOEs, also called Public Enterprises (PEs) or Public Corporations (PCs), were created in both developed and developing countries to address market deficits and capital shortfalls, promote economic development, reduce mass unemployment, and ensure national control over the overall direction of the economy especially in developing countries (UN, 2008). These organisations produce a broad range of goods and services such as power, communications, steel, fertilizers, automobiles, petrochemicals etc. The performance of these public enterprises varies widely within and between countries, but their record has frequently been poor, particularly in developing countries. They have clearly failed to play the strategic role in industrialization that governments had hoped for. (Mahmoud, 1992). For the purpose of this paper and clear understanding of the contents, the term SOEs will be thoroughly used instead of Public Corporations as both take the same meaning.

Corporate Governance of SOEs

Central to the entire discipline of state owned enterprises is the concept of corporate governance. In order for the SOEs and other state owned assets to operate efficiently, the government should prepare robust policy towards the success of SOEs. Also the policy helps in strengthening the corporate governance, restructuring and reorganising them. Corporate governance defines the responsibilities, authorities and accountabilities of owners, boards of directors, executive and managers of a company (Scott. D, 2007). Many of the problems that commonly face state owned

governance is weakness in corporate governance. This means that good corporate governance is need in SOEs.

According to the Report of the Auditor General of Canada, (2005), states that, corporate governance, refers to the process and structure for overseeing the direction and management of a corporation so that it carries out its mandate and objectives effectively. One of the most important events of the 2014 in Viet Nam was, the Government of Viet Nam (GoV) requested the Asian Development Bank (ADB) to provide technical assistance (TA) to support implementation of the State-Owned Enterprise (SOE) Reform and Corporate Governance Facilitation Program (SRCGFP). All of these; is to show how important is on good corporate governance to SOEs.

Contribution of SOEs in Economic Growth

In the new global economy, SOEs have become a central issue for economic growth. According to Forfás, (2010) who did a study in Irish SOEs , found a range of SOEs initiated the provision of essential infrastructure and services that were critical to Ireland's economic development and have played a key role in enhancing skills and entrepreneurship.

In the history of development of economics, China is thought as a country which took immense efforts in improving SOEs in deferent ways. According to the Trade Policy Review in China, published by the World Trade Organization (2011), shows that, there were 1,047 SOEs listed on the Shanghai and Shenzhen stock markets, accounting for 44.7% of companies listed in China. In the same line, Many SOEs have also been listed in the Hong Kong stock market and other overseas stock markets such as New York, London and Singapore. In India, the study by Mishra, R. K (2014) indicates that SOEs contribute to the Central Exchequer by way of dividend payment, interest on government loans and payment of taxes and duties. There was, however, a significant increase in the total contribution of SOEs to the Central Exchequer during the year, which increased from Rs 1, 60,801crore in 2011-12 to Rs 162761.31 during 2012-13 . This was, primarily due to increase in contribution towards 'corporate tax' and 'excise duty' which increased from Rs 44358 crore to Rs 44612 crore during 2011-12 to 2012-13. There was, however, a decline in 'Custom Duty', 'other duties & taxes' and 'dividend tax' during the year as compared to the previous year. There was also a marginal decline in payment of central sales tax by the SOEs.

METHODOLOGY

The study used secondary data approach where different texts and documents were visited. Authors had access to government documents including national budget speeches, reports and other relevant materials. Mostly data were presented using pie and bar charts in order to give more understanding to the audience. In addition to that some diagrams were used to elaborate more from the contextual contents.

FINDING AND ANALYSIS

Governance of SOEs in Zanzibar

The governance and management of SOEs in Zanzibar is currently regulated under the Public Investment Act, No.4 of 2002. However, individual enterprises are also governed by their own Acts. The Public Investment Act gives the power to the President of the Revolutionary Government of Zanzibar to appoint the Chief Executive Officer (CEO) of the enterprise as well as to appoint the chairperson of the Board of Director (BoD). On the other hand the Minister responsible for the Ministry under which a particular SOE is affiliated has been empowered by the Act to nominate members of the BoD.

Structurally, the SOE is governed by the BoD and the CEO (The management team). The BoD according to the prevailing legislation consists of not less than five and not more than seven members who shall hold office for a period of three years but may be re-appointed for such further period as the responsible minister may determine, while the tenure of the CEO of the SOE to hold office ranges from four to five years, in which the re-appointment of the next term is applicable based on the satisfactory performance.

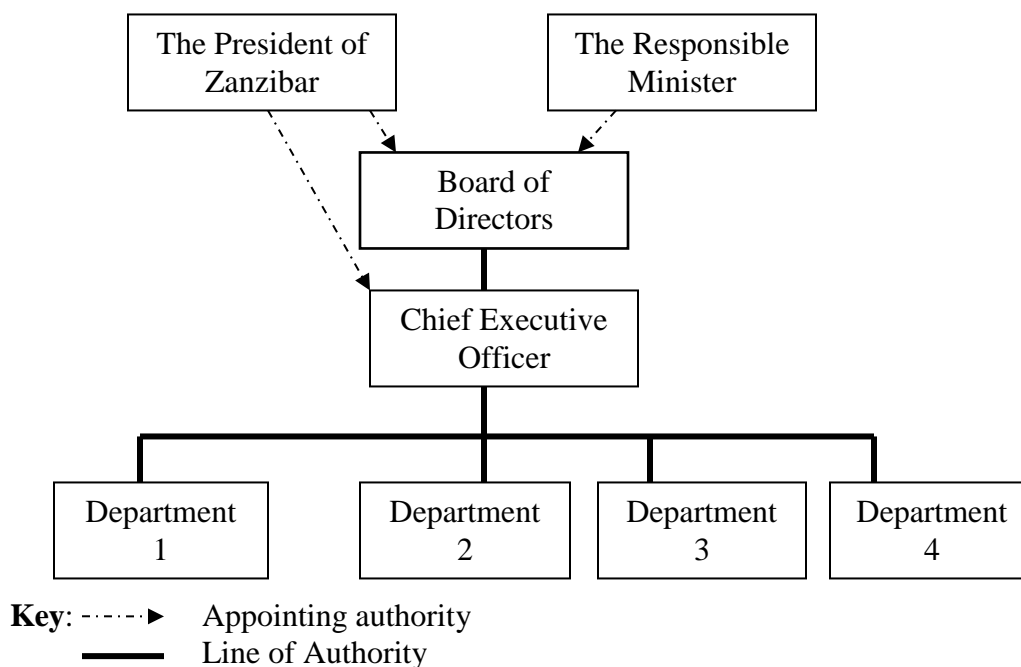


Figure: 1. Appointing authorities and the structure of the SOE in Zanzibar
Source: RGoZ (2002)

The major functions of the BoD includes the establishing of the system designated to ensure the proper distribution of dividends to shareholders, granting gratuities, benefits and allowances to

the officers and employees of the enterprise, exercising supervision over the management team of the enterprise, and also doing any other functions which in the opinion of the Board are important for the enterprise. On the other side, the CEO (the management team) is responsible for the proper day to day administration of the enterprise according to the policy laid down by the BoD, enforcement of staff and financial regulations made the BoD, for the reporting on the activities of the enterprise at every meeting of the BoD and to the Commissioner (RGoZ, 2002).

Industry Operated by SOEs

At the present time, there are eleven (11) SOEs in Zanzibar which are operating under diverse industries, although in comparisons with other countries like South Africa, India, China and Malaysia, it is still in infancy level. In banking industry, there is only one bank which is People's Bank of Zanzibar (PBZ); it is a commercial bank dealing with various banking products provided to corporate and retail customers and currently commands about 50% of the market share in Zanzibar. On the side of the insurance industry, there is Zanzibar Insurance Corporation (ZIC) which deals with transactions of all forms of insurance business, long term and general insurance. Zanzibar State Trade Corporation (ZSTC) is under business and trade industry. The principal function of ZSTC is purchasing and selling cloves, exchanging trade and developing trade resources, technologies, goods and services that facilitate the sustainable growth and development of the clove, agricultural products and allied products. In addition to that it provides extension services in collaboration with other relevant Institutions.

Moreover, Zanzibar Broadcasting Corporation (ZBC) and Zanzibar Newspaper Corporation (ZNC) fall under media industry where their main functions are not limited to dissemination of information to different stakeholders through different media like radio, television and newspapers. ZBC possesses ZBC TV and ZBC radio, while ZNC possesses Zanzibar Leo newspaper. In educational industry, there are State University of Zanzibar (SUZA) and the Zanzibar Library Services Board (ZLSB). SUZA is the only public university operating in Zanzibar, although there are other two private universities operating which are Zanzibar University (ZU) and Abdulrahman Al-Sumait Memorial University (formerly University College of Education-Zanzibar). In utility industry, there is Zanzibar Electricity Corporation (ZECO) with the objective of generating, transmitting, distributing, and selling of electricity in Zanzibar. Under this objective ZECO has a role to ensure that Zanzibar population has reliable, accessible and good quality electricity at affordable price. It also has the role to deliver better quality services to meet needs and wants of its customers.

Zanzibar Ports Corporation (ZPC) and the Shipping Corporation of Zanzibar (SCZ) cover the marine industry. Their specific objectives are not limited to managing, operating, developing and promoting ports and shipping activities in Zanzibar. The final industry is housing which is under the Zanzibar Housing Corporation (ZHC). This is the latest established corporation (2014) with the aim of facilitating the provision of house, and other buildings to Zanzibaris for residential, commercial, industrial or any other real estate purpose (RGoZ, 2014). One interesting point to note here is that, all these corporations are wholly owned by the RGoZ, this is to say the government possess 100% of the shares for each corporation.

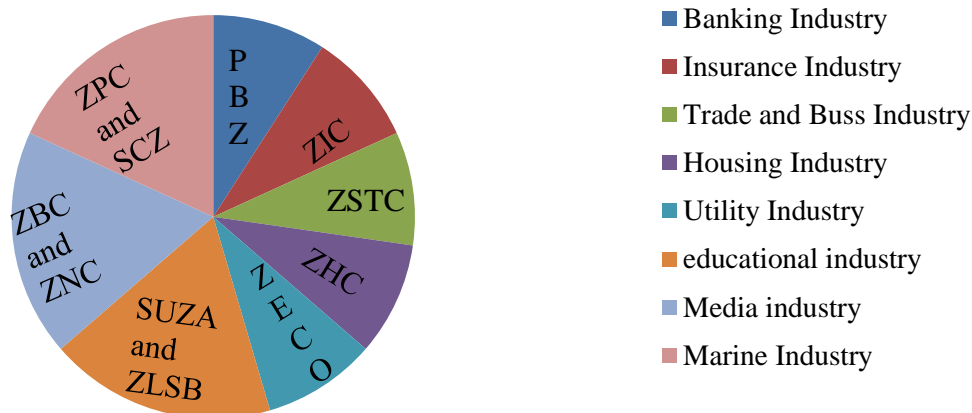


Figure: 2. SOEs industry in Zanzibar
 Source: ZPSC (2016)

Contribution of SOEs in Economic Growth

Due to the absence of robust SOEs policy in Zanzibar, the contribution of SOEs in economic growth in the country has been a matter of debate. The Public Investment Act, 2002 requires SOEs to submit a dividend to the treasury based on their profit. According to the data from the government offices, SOEs are required to submit 20% of their profit to the treasury (RGoZ, 2015). Although the exercise does not go as expected due to the poor financial performance of many of the country's SOEs, the contribution of these organisations currently has been less than 2% of the GDP, different from the years 1970s and 1980s. Moreover, SOEs employ about 7% of the total government employees. The figure below indicates the contribution of the SOEs to the Treasury from the years 2011/12 to 2014/15 in USD.

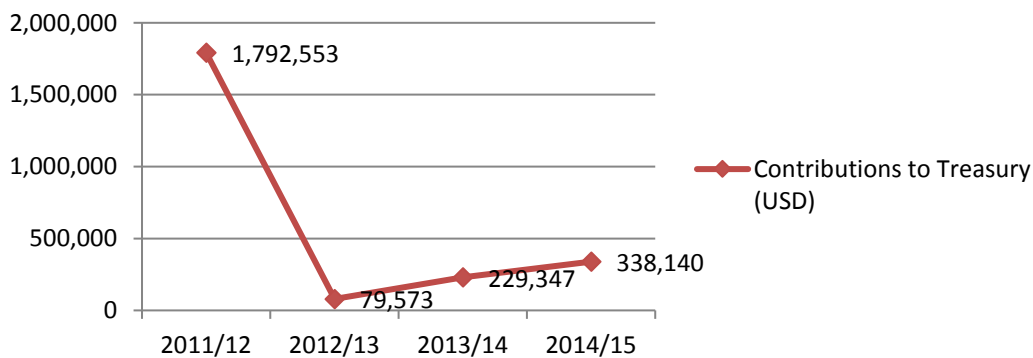


Figure: 3. Contributions of SOEs to the treasury (USD)
 Source: ZPSC (2016)

Challenges Facing SOEs in Zanzibar

No policy and strategy to guide public enterprises’ role in the economy

Zanzibar does not have SOEs policy. As a result the government could not clearly determine the development contribution of SOEs and rationalize their structure. In South Africa and India, for instance, governments declared the goal of SOEs would be to contribute to sustainable economic and social development. That is to attract Foreign Direct Investments (FDIs), contribute to the reduction in public borrowing and assist in the development of an economy that promotes industrial competitiveness and growth and increased domestic saving. To achieve this, these countries reviewed the sector, developed policy guidance and formulated strategies. They also formed special departments or ministries dealing with SOEs to rationalize the sector and offer strong oversight.

Absence of clear ownership

SOEs in Zanzibar face a typical challenge as a government owned organisation which are yet to see a clear cut boundary between ownership and management. As a consequence, there is a frequent interference of the government in the working of these entities and enterprises are not functioning as Board managed organisations. This leads to slow and poor decision making and bureaucratisation of SOEs. CEOs as managers of the SOEs know better, but when owners of a firm are not clear about their goals they can hardly expect to achieve them. In private sector, for example, the objective is to maximise returns to their investment, but this is not the case in SOEs in Zanzibar since there are some stakeholders would like to have efficiency, while others want equity but there may be stakeholders who just want to enrich themselves through tenders or outright theft.

Appointment of the members of boards of directors and chief executive officers

Currently, Chairpersons of Boards of SOEs in Zanzibar as previously explained are appointed by the President while the members to such Boards are appointed by the Ministers of the Parent Ministries of such SOEs. At the same time, Chief Executive Officers of the SOEs are also appointed by the President, a situation which creates a battle for power supremacy since both parties are appointed by the same authority. This situation creates friction between the two parties resulting in poor performance of the SOEs.

The composition of boards of SOEs is an important issue

Some Members of the House of Representatives (MHRs) are still serving as members of Boards of Directors of the SOEs which makes the functioning of the Boards of Directors to be impaired. Most of the MHRs appointed to the Boards are not qualified and there is no empirical evidence that their presence in boards has helped to improve performance. Directorships and senior managerial positions in SOEs is often viewed as political backing positions for retired military and high level civil servants or for relatives and friends of powerful political leaders. This kind

of nepotism must end if the country really wants to see SOEs contributing to growth of the country's economy.

Political interference and corruption

SOEs are still facing continuing risks of political interference, of cronyism and corruption in their governance and operations. In Zanzibar, ineffective SOEs not only have failed to contribute to development but have siphoned-off resources that could have gone to development activities, thus creating significant opportunity costs in our resource-scarce economy. The costs of continuing to give subsidies to unprofitable SOEs have taken a heavy toll on the Treasury. The chart below indicates SOEs which have been receiving grants from the Treasury in the years 2011 to 2013.

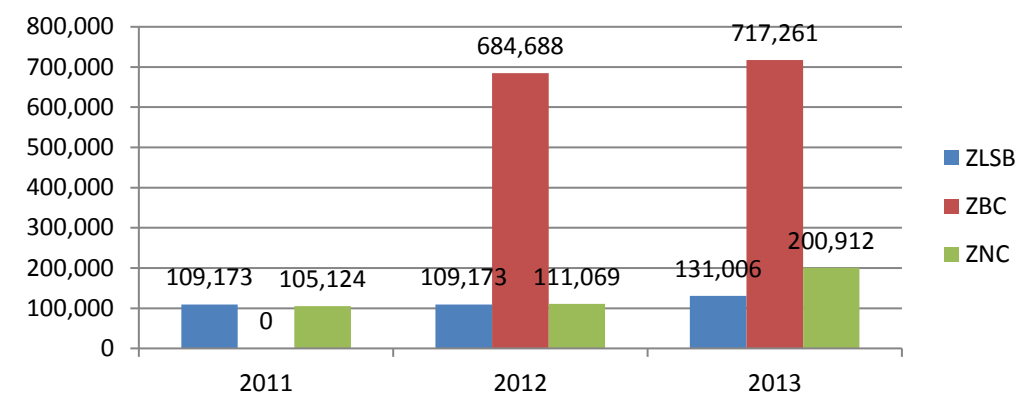


Figure: 4. Subsidies received by some SOEs from 2011 – 2013
 Source: ZPSC (2016)

Overstaffing

Human resource planning is not effective due to which several public corporations like Zanzibar Electricity Corporation (ZECO) and Zanzibar Ports Corporation (ZPC) have extra employees in which two third of the employees are non-skilled or semi-skilled. Staffing is not based on sound labour forecasts. Recruitment is frequently influenced by politicians who pressurise the employment of their relatives. This puts SOEs in a situation of using their budget for more recurrent activities through the payment of salaries and wages other than investing in development programmes. It happened one time the minister responsible for finance urged the SOEs management to reduce the number of employees although this ended in vain. The diagram below indicates employees' enrolment as per the SOEs as at June 2016.

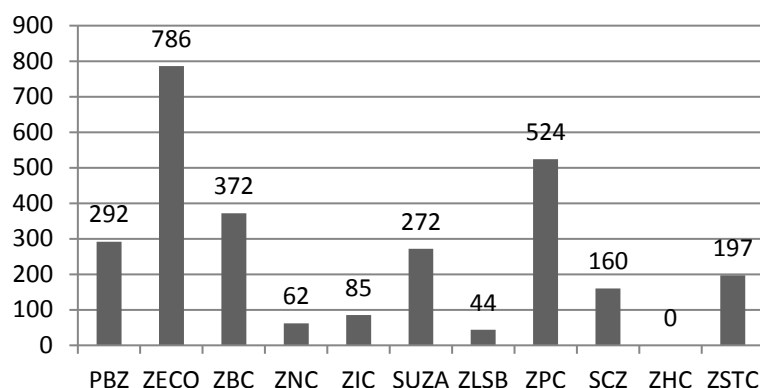


Figure: 5. Total Number of employees per SOE
 Source: ZPSC (2016)

Debts facing SOEs

About six (6) SOEs are in grave situation in meeting short and long term debts. These organisations owed some amount of money from different creditors. This condition may be a threat to these organisations as they may not be able to run by themselves and therefore depend on grants from the central government. The fact is that all money which is collected by these organisations may be used to pay back the debts.

Table: 1. Debts facing SOEs in Zanzibar
 Source: ZPSC (2016)

No.	Name of the SOE	Type of the debts	Amount of the debts as at 30 August 2014
1.	ZPC	Construction of Ship Tower Purchase of Ports Equipment	USD 3,617,473. USD 262,646
2.	ZECO	TANESCO arrears Construction of Electricity Centre, Mpendae	USD 20,930,233 Euro 700,000
3.	ZSC	Long Term debt Creditor	USD 317,751. USD 149,446
4.	ZLSB	Consortium of TZ University & Research Libraries	USD 1,209
5.	ZNC	Printing Charges	USD 61,347
6.	SUZA	Taxes Payable to Tanzania Revenue Authority	USD 59,870.

The proposed framework for the performance of SOEs in Zanzibar

Following enormous challenges facing SOEs in Zanzibar, ranging from policy-wise to operational, this paper tries to develop a model which could be implemented in trying solving some of the impairments based on appointments of top officials of the SOE as well as the coordination and harmonisation of the SOEs matters.

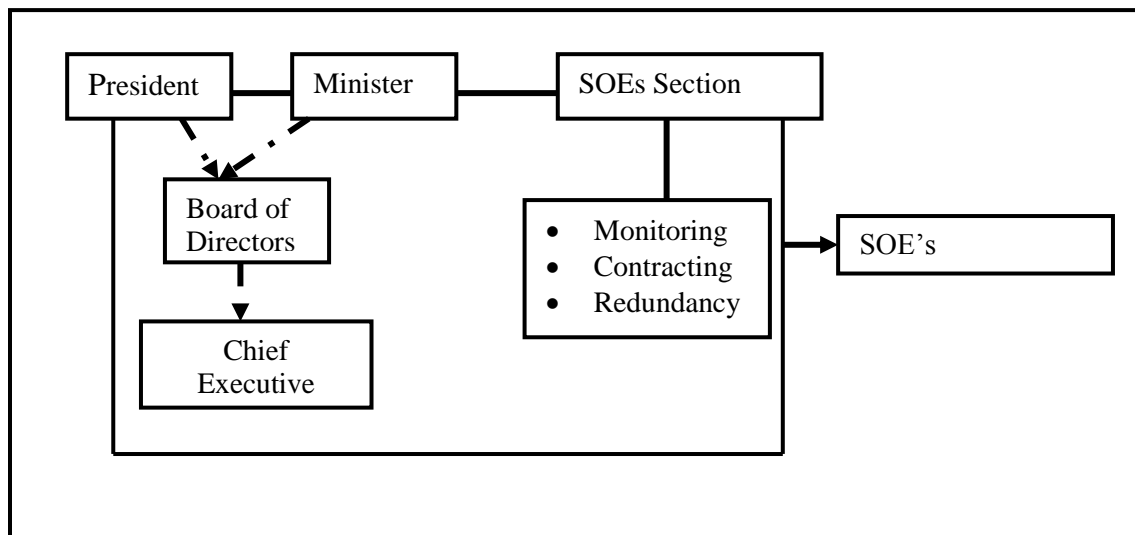


Figure: 6. A proposed model for proper functioning of SOEs
 Source: Authors (2016)

The proposed model holds that the role of the President and the Minister as appointing authorities remains but the presidential power is proposed to appointing the chairman of the BoD only. The role to appoint the CEO of the organisation is laid down to the BoD. This assumption removes the problem of supremacy of power between the chairman of the board and the CEO. Again on the appointment of the members of the BoD, the tendency of involving members of the House of Representatives or former military officers or civil servants on the basis of their political patronage has to be abolished. In this world of business competitiveness, it is proposed that competency and expertise in a related field should be the first priority for all appointing authorities i.e the President, the Minister and the BoD.

Furthermore, the model also proposes the introduction of a specific Section which will deal with all SOEs. This will be responsible for government oversight of all SOEs. The functions of this Section will basically base on monitoring, contracting, redundancy and other related issues. It shall sign performance contracts (PCs) with SOEs Boards and enforce them; Boards consequently must sign PCs with CEOs with clear goals and objectives. As so far, SOEs in Zanzibar do not have a policy which guides them on their operationalisation as well as specific targets. The examples of South Africa, China and India point out that the policy is needed to ensure proper functioning of these SOEs. Although these countries established specific ministries to deal with SOEs, for the start Zanzibar can introduce only a Section which can be placed in one ministry for instance the Ministry of Finance and Economic Affairs. Parent Ministries of SOEs shall only be responsible for sectoral policy matter and not operational.

In addition to that, the model as well proposes that among the functions of the Section will be to plan on the SOEs employees' redundancy programme. As explained earlier that one of the major challenges of the SOEs in Zanzibar is overstaffing. Employees' redundancy is so fragile, as it touches the interests of different stakeholders in the community, thus failing to address it

reasonably could create more losses than gains. Having one proper programme for the redundancy across the SOEs could minimise the fear of unknown to employees. It is believed that the programme could be fair, just and equal to all employees.

CONCLUSION

This study has tried to show various developments of SOEs in Zanzibar together with their contributions and challenges. It has been vividly seen that the performance of SOEs in Zanzibar is in the infancy stage, which in one or another retards the rapid growth of the country's economy. Despite the fact that the government has been taking different measures to make SOEs perform better, there is still more to be done. In light with above statement, the paper suggests that, time has come for the management of SOEs in Zanzibar to exploit the available opportunities in order to improve the wellness of these SOEs. For example, ZECO which has been fully depending on hydro-electric power from Tanzania Electricity Supply Company (TANESCO) could turn its mind to solar and wind energy which is abundant in the country.

Also, the ZSTC as the principal entity for public business in Zanzibar should not only depend on cloves production alone which has been falling remarkably in the recent years due to the cutting down of clove trees as well as some of the trees are very old to produce, but more efforts also need to be directed into other areas including the improvement of spice plantations like cinnamon, cardamom, black-peppers, boosting sea weeds cultivation which altogether guarantee ready foreign markets so as to generate foreign currencies.

Moreover, the proposed model may be put into practice by the responsible stakeholders as a remedy to reduce tag of wars between the parties in the SOEs. The study faced various limitations including using secondary data sources as well as engaging mostly on analysing corporate governance.

More research is needed to be conducted on Zanzibar SOEs especially on the issue of the employees' performance. It is indisputable truth that the performance of any organisation depends highly on the qualities and capabilities of its workforce, the environment within which the work is performed as well as the resources invested in the organisation. Understanding the perceptions and preferences of the employees in the SOEs could help management understand what needs to be done to motivate employees and finally achieve the overall organisational goal.

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PROJECT GOVERNANCE: A NEED FOR PUBLIC SECTOR INFRASTRUCTURE PROJECTS IN PAKISTAN

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ABSTRACT

Infrastructure projects in developing countries have been criticized for cost overrun, delay, substandard construction works, ineffectiveness and low efficiency. In this regard, project governance approach offers a structured mechanism to detect and address all these inherent risks in a timely manner. This study has tried to review the academic literature relating to the need of project governance on infrastructure projects in order to assess the potential causes of success and failure of projects. The review is further elaborated by discussing a case study, which represents an example of ill planning of infrastructural development projects in Northern region of Pakistan. This study suggests need for exploring potential applications of project governance practices in private and public sector of developing countries.

Keywords: Project governance, Infrastructure projects, stakeholders

INTRODUCTION

Project governance has become an important topic for debate in project literature since last few decades. Organizations have used the project governance approach to meet organizational goals

and objectives. Organizations initiate projects with the best of intentions to succeed, but due to the different challenges associated with governing and managing a project, many projects fail, and the reasons are often unclear. Traditionally, the outcomes of projects have been measured in terms of completing them within the constraints of scope, time, cost, and quality. But increasingly, assessments of projects are being expanded to governance, to include their ability to achieve sustained performance in meeting operating goals over considerable periods of time.

Failure of large capital projects have fueled the quest to explore and apply project governance (Flyvbjerg et al., 2003). Irrespective of an industry or sector, establishing a governance process is an important and ideally the first step in a project’s development. Effective governance process ensures input from the essential stakeholders and “confers legitimacy” upon project decisions and outcomes. The developing countries should focus on extensive infrastructure provision to achieve/sustain economic growth and to meet standards of the developed economies (Jnr, 1996).

Governance structures and processes define and create subsystems for operating procedures and are devised to ensure the common direction of the distributed effort (Schroeder et al., 2012). Good governance has the aptness to navigate the projects through different uncertainties and unexpected events (Lessard et al., 2000). Garvin (2009) has stressed about the motivation of stakeholders for project goals towards achieving good governance.

In infrastructure projects, complexities and uncertainties are very common and the distinctiveness and individuality of infrastructure projects are due to their unique social and environmental requirements (Guo et al., 2014). Reconciliation of internal management and governance structure of the project to aligned with strategic objectives have been the organizational challenges (Too & Weaver, 2014). Miller and Hobbs, (2005) claimed that Project governance has become an important topic in the project management literature and community.

This study has reviewed the academic literatures relating to need of project governance on infrastructure projects in order to assess the potential causes of success and failure of projects. Review of the literature was carried out through, searches on infrastructure development projects and projects governance related documents and research articles on ProQuest, Google Scholar, publications in the international Journals and secondary data from reports of Planning & Development, Department, Govt. Of Gilgit-Baltistan, Pakistan.

BACKGROUND

Project is defined as “a temporary endeavor undertaken to create a unique product or service” (PMBOK, 2013, p.170). Ali (2010) stated that having specific start and ending points, projects are distinctive in their output, temporary in nature and are carried out to organizational strategic objectives. Governance— “Deriving from the Greek verb *kubernao*, which means to steer, governance is defined as the “act of governing, or steering the policies, management, and activities of an organization at the highest level, with the authority, credibility, and responsibility to do so”. Initially the policy research in political science has developed the governance theory (Friedmann,

1981; Krieger, 1971; Nachmias and Greer, 1982). In an international context, governance means the ways in which power is used to cope with the country’s social and economic resources for development (Meso, et al., 2006). McGrath and Whitty, (2015) have defined governance as the system by which an entity is governed (directed and controlled).

McGrath and Whitty, (2015) have described project governance as “the system by which a project is governed (directed and controlled) (p.781)”. Projects governance involves in management and governance functions for individual projects and their deliverables (Too & Weaver 2014). Bekker and Steynde (2009) identified that “Project governance is a set of management systems, rules, protocols, relationships, and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation”. So, the project governance can support a good operational environment and provide a guarantee for project success.

Single firm, multi-firm and large capital school are the three school of thoughts on project governance, firstly the *single-firm school* which is involved with governance principles related to internal organizational project and practice these principles at a technical level, secondly *the multi-firm school* which addresses the governance principles related to two or more than two organizations participating on a contractual basis on the same project which focus their governance efforts at technical and strategic level, thirdly the *large capital school* considers projects as temporary organizations which create their own entity and establishes governance principles at an institutional level (Bekker,2014). Bekker (2014) also stated that the hierarchical positioning in the organization and the type of project determines the meaning of project governance.

There are three major types of project governance based on stakeholder involvement in the literature (Ruuska et al., 2011). The first type of project governance emphasizes on analyzing a single firm's governance scheme with its multiple projects, which is the final decision-making body and has control over policies, processes and activities of projects, the second type ponder multi-firm projects where different organizations involve in contractual agreements where the involved firms have their vested interests in the project and the main stress is to safeguard the intellectual property, third type deliberates the projects like hybrid or network structures which are involved in various interconnected actors depending on the existence of one topmost hierarchical authority, which is always the lead sponsor or underwriting firm (Ruuska et al., 2011).

Levitt et al. (2009) noted that previous research on the project governance has raised the question that who operate and own long-term infrastructure development projects. Comparing the efficiency and productivity of public and private organizations with respect to the infrastructure projects have also been a query (Levitt et al., 2009). Levitt et al. (2009) have further questioned that how public and private organizations can manage the governance challenges effectively which occur during different phase of project i.e. project shaping, execution and operation. Levitt et al. (2009) identified two different types of challenges which arise steadily during the project shaping, implementation and operation phases of infrastructure projects governance, which are “(1) opportunism in the presence of displaced agency – i.e., conflicts between the incentives of parties leading decision making in each of the successive and interdependent phases of design,

construction and operations that lead to sub-optimal investment and may lead them to pursue their self-interest with guile; and (2) political and regulatory risk – i.e., ex post political interventions in operational decisions”.

Governance has become an important matter in investment and outcome of infrastructure projects (Sharma, 2012). Reside and Mendoza (2010) in their study have also acknowledged the governance issue as an important constituent for infrastructure development projects. As corruption is a sign of failed governance, and has negative effect on the returns of infrastructure investments, has made the issue of governance significant factor of infrastructure development projects (Kenny, 2007). Two features of infrastructural development projects which have made them ideal for the understanding of socio political governance; firstly, the infrastructure projects are produced by multiple counterparties through a complicated series of interlinked transactions, secondly the significance with respect to catalytic functions in the development process and nations security and comfort has made infrastructure development process politically salient (Levitt et al., 2009). Many organizations have recognized the importance of critical success factors (CSFs) and now it's been applied in a many organizations. Babatunde et al. (2016) stressed the need of identifying CSFs for public-private partnerships (PPPs) for the successful execution of PPP projects. Zhang (2005) termed identification of CSFs as an important step for the development of practical and proficient PPP protocol. Jefferies et al. (2002) stated that the phrase CSFs was initially used in the perspective of project management and information system. Rockart and Sloan School of Management developed the concept of CSFs (Jefferies et al.,2002). To achieve goals and organizational performance CSFs demands constant and vigilant attention from the management (Ram and Corkindale 2014). Babatunde et al. (2016) identified six principal factors for CSFs which includes “reliable concession arrangement with due diligence; serious commitment with adequate technical strength; favorable economic environment; government support with enabling legislation; bankable project with adequate stakeholder’s involvement; and strong “political will” with committed private partners”.

Enserink, and Koppenjan (2007) indicated that community participation can be a factor to collaborative governance, progressive development and efficient projects. Participation is a process through which stakeholders motivates and share control over priority setting, policy making, resource allocation and access to public goods and services (World Bank, 2016). According to Xie et al. (2014) in China, socio-economic and environmental conflicts in public infrastructure and construction (PIC) projects are handled through public participation. In developed counties public participation is normally used as an effective instrument to enhance the aftermaths of the decision making and implementation of PIC projects through collaborative governance (Enserink & Koppenjan, 2007). Almer and Koontz (2004) noted that since 1990s the developing countries are using public participation mechanism frequently to decrease the socio-economic and environmental conflicts in PIC projects.

According to Bult-Spiering and Dewulf (2008) nature of PPP projects in infrastructure are generally long term and complex. Mahalingam (2010) observed that number of PPP projects run into problems at later stages which were termed successful at the closure phase of the project. To cope with possible uncertainties which might happen during the project life cycle, projects needs

a flexible, equitable, contractual provisions and intrinsic governance structure (Mahalingam, 2010). Akintoye and Liyanage (2011) emphasized the need of PPP for better economic growth, infrastructure delivery and good governance. Sharma (2012) has indicated that countries having better governance have lesser PPP arrangements in infrastructure which indicates that when the public sector performance is efficient in a country, the participation of private sector is comparatively less and the government chooses to build and maintain infrastructure projects by the public sector. Flexibility is the latest paradigm for responding to the changing environment in the governance practice (Kumar Suri, 2014). Kumar (2014) further states that the flexible governance mechanism can easily change and add capacities in a shorter time to meet the rapidly changing needs of the inhabitants. According to Shi and Daniels (2003) through flexibility organization can hedge themselves from uncertainty and fast changing environment. Flexibility helps to improve performance and competitiveness (Sharma and Jain, 2010).

NEED FOR PROJECT GOVERNANCE

Governance incorporates different stakeholders from NGOs, business and government to work together to attain common goals (Kazancigil, 1998; Stoker, 1998). According to Meso et al. (2009) the concept of governance raises the issues related to economic and social responsibilities and collective actions for power dependence among related institutions and getting the things done not depending upon the governmental machinery.

Infrastructural needs are huge for every country. Effective governance of the infrastructure development projects has become a need and significant challenge which defines the success of these projects. Infrastructure projects are involved with projects related to transportation, access to water and sanitation which are directly related to the societal lives (Santosh Kumar Delhi et al., 2012). Guo et al. (2014) have done a comparative analysis which depicts that project governance offers a structured mechanism to detect and address the risks when they occur. Garland (2009) stated that project governance is a process for decision making and established framework, models and structure for their enablement. Project governance is considered as critical success factor in project execution (Garland, 2009). Weaver (2007) claimed that eradication of project failure by executing the projects right again and again is the major focus of effective project governance. Project governance should incorporate project quality management system, project and company strategy with regards to project selection. (Burcar & Dunovic, 2010). According to Zhai, et al. (2009) key features of mega infrastructure projects are; longer life cycle, uncertainty, complications, large number of stakeholders as well as their effect on the economy, community, technological development and the environment. Jonny Klakegg (2009) has argued that presence of governmental stakeholder may create further political uncertainties for the project. Project Governance prerequisite is to explore how resources and risks are to be assigned among stakeholders to define control measures for achieving targeted objectives, which is defined by legal and regulatory mechanisms with the aim of ensuring better utilization of public funds (Klakegg, Williams, and Magnussen, 2007). Project governance provides framework and structure to articulate and attain the objectives which is a way of monitoring the performance (Turner, 2009). Patel, (2007) noted that project governance classifies the space for daily project activities. Guo et

al. (2014) noted that common objective of governance systems is elimination of project failure and possible repetition of these systems in future public projects. The rapid pace of transformation has created an enormous market for the infrastructural development projects in Pakistan over the last decades. Infrastructure development projects in Pakistan have been criticized for substandard construction works, delay and cost overrun with low efficiency and effectiveness. The projects can be delayed or disrupted if there are inability to cope with the uncertainties (Pitsis, et al., 2003). Construction industry in Pakistan is not performing well but still it is an important sector and significant to the economic development of the country. (Azhar et al., 2008). Figure 1 shows the project appraisal and its governance process in public sector organization of Pakistan.

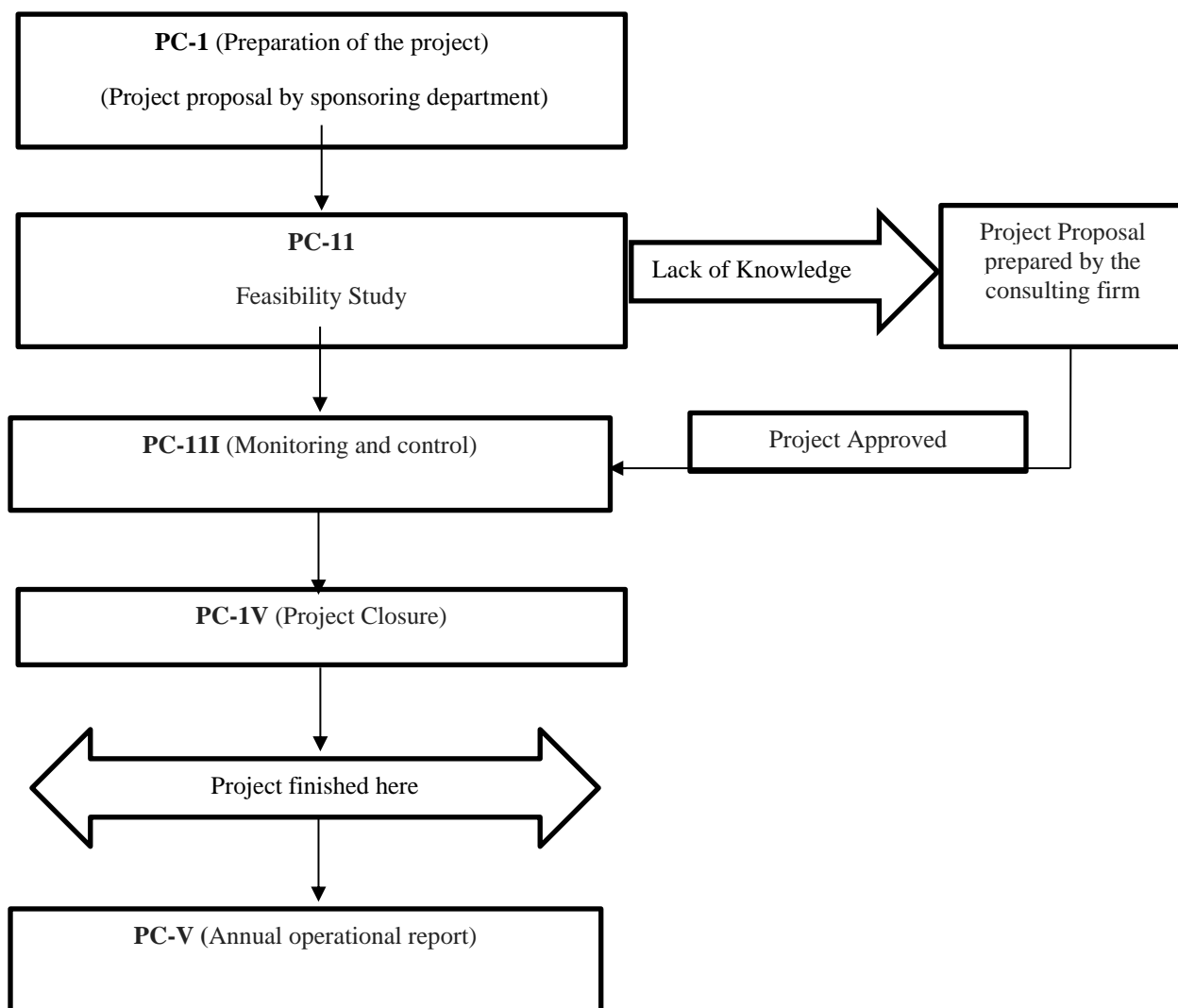


Figure 1: Project selection and governance flowchart

Case Study of Infrastructure Projects in Northern Pakistan (Gilgit-Baltistan)

The researcher gained the access to the ‘Planning & Development Department, Gilgit-Baltistan’ the apex approving authority of all major infrastructure projects across the province. Three member staff of Planning & Development Department, Gilgit-Baltistan (Haider, Karim, & Nazeem, 2014) conducted a monitoring report of 43 infrastructure projects of Diamer District, worth Rs. 2247.090 million. Theoretically monitoring means to check and assess the implementation status of a project implementation, the system of monitoring the progress of a project in implementation besides being an important link in the project life cycle helps in identification/analysis and removal of bottlenecks and expediting actions where projects are stalled or fallen behind the schedule (Haider et al., 2014).

The quality of the development projects carried out in the district Diamer is not satisfactory than other districts of the Northern Pakiatn (Gilgit-Baltistan). Diamer district is the typical example of misdirected public investments in infrastructure development projects. Haider et al.(2014) stated in their report that the projects in district Diamer were hit by complications and huge cost overrun because of a host of tribal/political, financial, managerial and governance shortcoming. Out of 43 projects, more than 30 projects are problematic and slow moving/sick, the project costs in some case have increased by more than 200 percent. Those projects have missed their implementation schedule and completion deadline because of design problems, wrong site selection, land acquisition issues, abandoning of work for unknown reason by contractors. In sum, the sluggish developmental activity is due to the cost overruns, project delays, waste of public money and missed benefits. It was also observed that these infrastructural development projects were not properly supervised by the executing departments which badly effect the quality and pace of work.

Due to lack of proper supervision the contractors do not bother to maintain engineering specification. These problems can be addressed through appropriate mechanism of project governance. There are several cases where big infrastructure projects provide common examples of cost overruns due to unique site conditions (Kean, 2011), delays and hidden costs (Sha, 2011), conflicts among the groups (Ogunlana, 2010).

The situation has put a question mark on executing agencies capabilities of governing, planning, implementation and supervision for development projects. The above case study represents an example of ill planning thus, there a need of project governance which should manage the network of stakeholders. It is pertinent to develop a good relationship with the relevant authorities for accomplishing construction works and smoothing approval process simultaneously with improving the competitiveness with advanced management techniques. Effective governance and success of these projects have becomes a significant challenge for the executing agencies. Case study has an implication for the organization and management of major infrastructure projects, in situations of high-risk, complications and high performance requirements.

Mir and Pinnington (2014) have described that Project Success is in contrast to Project Failure of not meeting stated objectives. Traditional project management methods and studies have measured the degree of project success based on the relationship of scope, budget, and schedule (Cuellar,

2010). Pinto, (2014) argued about the governance of projects which provides structure to execute projects, resulting increase the probability of project success. Guo et al. (2014) stated that "Whichever financial models used, whether the project can generate viable economic return or longer-term benefits for local development has been a major concern among project stakeholders" (p.818).

Three basic elements i.e. control, flexibility and trust can be incorporated in project governance to eliminate complications and uncertainty in organizational and environmental context (De Man and Roijackers, 2009; Osipova and Eriksson, 2013). (Miller et al., 2000) stated that there is high level of ambiguity and unpredictability during the project life cycle of PPPs infrastructure development projects. These ambiguities and instabilities can be observable as numerous governance issues in the form of political and legal issues on projects (Santosh Kumar Delhi et al., 2012). Santosh Kumar Delhi et al. (2012) further claimed that delays in construction, time-wasting, closure of the projects and huge impact on the cost are due to the governance issues.

DISCUSSION

The foremost recommendation from this study is that infrastructure development project should invest and adopt project governance framework to achieve goals and success. Bekker, (2014) suggested further research on development of "project governance frameworks for projects spanning across national companies, across country borders and incorporating different value systems, legal systems, corporate governance guidelines, religions and business practices". Corporate governance aligned with standard project governance will remain active for future research (Bekker, 2014). Project governance and corporate governance are the merged concept of project governance, so there is a need develop coalition team to ensure and safeguard cross-pollination of these two areas (Bekker, 2014). Guo et al. (2014) suggested empirical studies of management systems in large infrastructure projects to design appropriate forms of governance for managing risks to better understand 'what worked well?', and 'under what circumstances?'

Aubry, (2011) suggested further research "to link project monitoring and control functions to project governance". "This more extensive research project might be based on quantitative approach, and attempt to deepen the understanding of these control process within project-oriented organizations" (Aubry,2011, p.452).

This review has opened many venues for further research which are to explore the project governance practices in the public sector of any other less developing countries. Researchers may probe the project governance practices in the private sector of a less developing countries to have an insight of the management practices.

CONCLUSION

Project governance sets vision, projects priorities, provide structure for planning, decision-making and defines the roles and responsibilities of all the stakeholders. It builds organizational structure to support planning, development, oversight, and fiscal management. Maximum utilization of the resources and streamlines of the processes can also be done through project governance. The mechanism of project governance is helpful in resolving the conflicts, monitoring and evaluation of the projects. It provides the representation of minority as well as majority viewpoints of the stakeholders. Project governance confers legitimacy on decisions related to the projects. Without proper governance mechanism only the loudest voices get heard and possibility of crises and project failure is also higher.

A more pragmatic research is envisioned to encompass other large projects whose governance framework can differ from infrastructure projects due to different legal, institutional, organizational and financial conditions with the purpose of creating a common governance framework for these projects.

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THE EFFECTS OF EXTERNAL CORPORATE GOVERNANCE ON PERFORMANCE OF FEDERAL STATUTORY BODIES IN MALAYSIA

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ABSTRACT

Corporate Governance (CG) has become a significant mechanism to enhance organizational performance. In order to realize its Vision 2020, the government of Malaysia has launched Government Transformation Programme (GTP) which aims to accelerate the performance of public sector agencies through the embodiment of the highest standard of ethical conduct and good governance. In spite of this assurance by the government, Malaysia continues to experience challenges including: corruption perception; inefficiency; delay in service provision and unfair action which seem to indicate a lack of internal control. Hence, this study examines the effects of External Corporate Governance on the performance of Malaysian Federal Statutory Bodies (FSB), bodies incorporated by their own incorporation acts and adopt a corporate style management. A panel data analysis was conducted on 51 samples out of 127 FSB from 2009 till 2013. The results demonstrate that the External Corporate Governance mechanism has significant effects on financial and non-financial performance of Federal Statutory Bodies. It is recommended that all public and private organizations practice good

Keywords: Corporate Governance (CG), Effects of CG on performance, Federal statutory bodies, Malaysia

INTRODUCTION

Corporate Governance has become an essential mechanism to enhance organisational performance in private and public sectors all over the world. In order to realise its Vision 2020, the government of Malaysia has launched Government Transformation Programme (GTP) which aims to accelerate the performance of public sector agencies through the embodiment of the highest standard of ethical conduct and good governance.

In Malaysian ,public sector agencies which includes Federal Statutory Bodies (FSB) are governed by various legislative, policy and implementation procedures that regulates the governance, management, resource use, accountability and specify their functions

Besides agency-specific legislation, several essential circulars, directives and guidelines such as :1) *Garispanduan bagi Mempertingkatkan Tadbir Urus Dalam Sektor Awam (2007)*; 2) *Arahan YAB Perdana Menteri Bilangan 1 Tahun 2009*: formation of Governance Committee; and 3) *Arahan YAB Perdana Menteri Bilangan 1 Tahun 2014*: formation of Integrity and Governance Committee , were circulated to all ministries, state and local government to improve governance practices in order to enhance their delivery services.

Despite assurance by the government that Malaysians are able to depend on the government that is responsive, efficient, effective, and committed to the national objective of building a high-income economy and advanced nation through the embodiment of the highest standards of ethical conduct and good governance to gain the public confidence and trust (10th Malaysian Plan, 315), Malaysia continues to face shortcomings including: corruption perception; inefficiency; unfair action; delay in service provision (Transparency International, 2014, Auditor General’s Report 2014 Series 2, the Bureau of Complaint’s Report). These shortcomings seem to indicate that there is a weakness in corporate governance practices.

The Malaysian Auditor General encourages all relevant parties to conduct a continual assessment and feedback mechanisms on governance practices, structure and processes to identify and address both weaknesses and opportunities for improvement (Buang, 2012). Therefore, the above mentioned challenges in the practice of corporate governance in the public agencies deserve attention, assessment and improvement in order to improve the performance of the public sector delivery service towards the realisation of Vision 2020.

This study aims to examine the relationship between External CG Mechanism and performance of FSB. It provides an analysis of the effects of External corporate governance such as institutional and stakeholders influence on Malaysian FSB on their performance.

LITERATURE REVIEW

Concepts of Governance

The word ‘governance’ is derived from a Latin word ‘gubernare’ which mean ‘to rule or to steer (Tricker,1984). While according to Edwards et al, 2012 governance is concerned with how societies, governments and organisations are managed and led. Importantly, it includes how they structure and otherwise order their affairs, make decisions and exercise power, and manages their relationships and accountabilities. Analysis of governance can be undertaken at

three levels: (a) Public governance which focus on society; (b) Public sector governance focuses on government; (c) Corporate governance focuses on organisation.

Corporate governance focuses upon the governance of organisations in private and public sector. This research concentrates on the corporate governance of the Malaysian Federal Statutory Bodies (FSB) in public sector.

The most widely used definition of corporate governance is “the system by which companies are directed and controlled. Board of directors are responsible for the governance of their companies. The shareholders’ role in governance is to appoint the directors and the auditors to satisfy themselves that an appropriate structure is in place.” (Cadbury Report, 1992). While the ANAO (2003) defines corporate governance as “the process by which organization are directed, controlled and held to account”. Besides responsible for their directing and controlling functions, directors are also accountable to stakeholders.

The Malaysian Code of Corporate Governance defines, corporate governance as “the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realising long-term shareholder value whilst taking into account the interest of other stakeholders (MCCG, 2012).

The above definition indicates that, corporate governance focuses on the structure and process used to direct and manage the business and affairs of the company with the objectives of striking a balance on:

- The attainment of the company’s objectives.
- The alignment of corporate behaviour to meet the expectations of shareholders.
- Accountability and good relationship, taking into consideration the interests of shareholders, stakeholders, corporate participations and society at large. (Zainal Abidin and Ahmad, 2007).

Corporate Governance and Performance

MCCG’s definition of corporate governance emphasises the contribution good governance “towards enhancing business prosperity with the ultimate objective of realizing long-term shareholder value.” It implies that good governance will improve organizational performance towards prosperity and add shareholder value.

Research has found that there was a high positive association between better governance and operating performance using firm level data of 14 emerging stock markets with return on assets as a proxy for operating performance (Kapper and Love, 2004). Likewise, some other researchers such as Gompers et al, (2001), Brown & Caylon, (2004) and Drobetz et al (2004) reported a positive correlation between the quality corporate governance and their quality of profitability.

Corporate governance mechanisms can be broadly categorized into two groups: internal CG mechanisms and external CG mechanisms. Internal corporate governance mechanisms refer to the structural and process components that are utilised to manage performance. Whereas External CG mechanisms refer to institutional and stakeholder’s influence that are used to

enhance performance. Institutional and stakeholders theories indicate that performance is influenced by regulatory authority and stakeholders which regulate the organisations through effective coercive, normative and mimetic isomorphism (Major & Hopper, 2004.)

RESEARCH FRAMEWORK AND METHODOLOGY

Theoretical and Conceptual Framework

Institutional and stakeholder theories form the theoretical framework of this study. Whereas the conceptual framework addresses the relationship between the external corporate governance practices and performance of FSB on the theoretical framework formulated. The operationalization of the external corporate governance factors or variables to effect performance of FSB for the purpose of empirical testing of hypotheses is shown in Figure 1. External Corporate Governance Score (ICGS) is a composite score of 6 sub-score: 3 Stakeholder Influence and 3 Institutional Isomorphism variables. FSB performance represented by Key Result Area (KRA) Scores, an Accountability Index, ROA and ROE are dependent variables, while there are 3 control variables: age; size; and growth.

Governance Model

The analytical governance model of this study is based on the empirical schema as shown in Figure 1. It attempts to explain the relationship between external corporate governance practices and the performance of FSB. The strength of FSB's external corporate governance score (ECGS) is represented by Governing Funding(GFN), Employees Power (EPW), Leverage Power (LPW), Regulatory Authority (RAY), Professionalization (PRO) and Board Interlock (BTK).

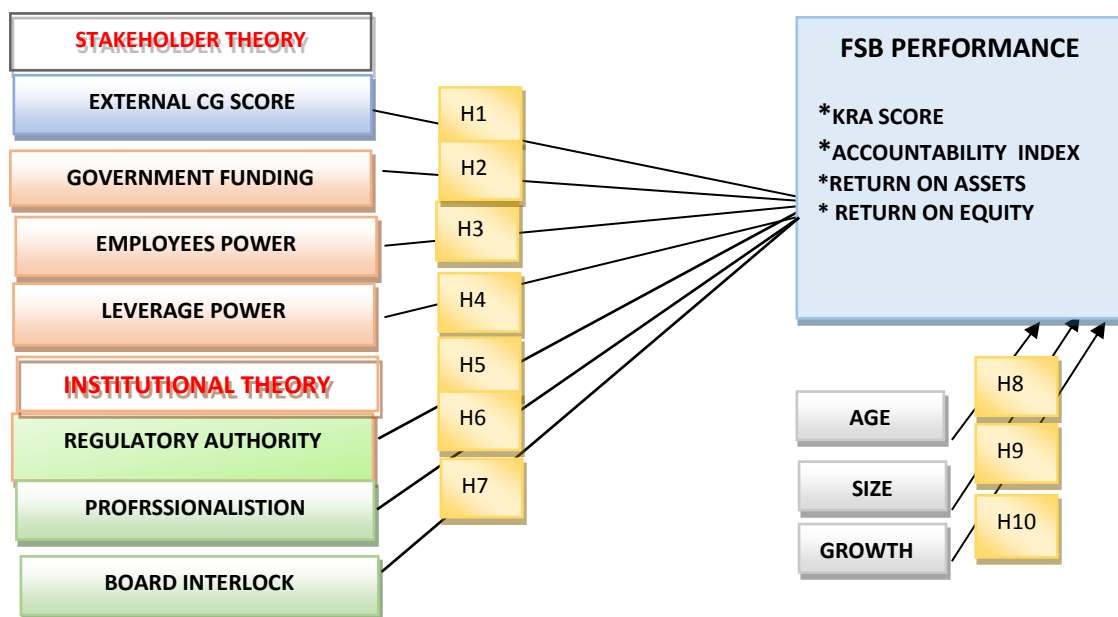


Figure 1: Empirical schema of ECG and FSB's performance

The governance model to test the relationship between eCG practices and performance in FSB is as follows:

$$Q_{it} = a + b_1 ECGS_{it} + b_2 X_{it} + E_{it} \quad (1)$$

Where Q_{it} is the FSB performance measures

$ECGS_{it}$ represents a vector of internal governance index for FSB at time t

X_{it} represents a vector for FSB organisational characteristics at time t .

and E_{it} = Error term.

$$Q_t = a + b_1 X_{1t} + b_2 X_{2t} + b_3 X_{3t} + b_4 X_{4t} + b_5 X_{5t} + b_6 X_{6t} + b_7 X_{7t} + b_8 X_{8t} + b_9 X_{9t} + e_t \quad (2)$$

Where Q_t = performance, an dependent variable;

a = Intercept;

b_t = Slope of the independent variables;

X_t = Independent variables (ECG_i, Government Funding, Employees Power, Leverage Power, Regularity Authority, Professionalisation, Board Interlock, Age, Size, and Growth of FSB

t = periods;

e_t = error term

Hypotheses Development

The hypotheses developed in this study are based on the argument that the good external corporate governance practices have a positive relationship with performance of FSB in accordance with the findings of previous studies by Gompers et al, (2001), Drobetz et al (2004), Brown and Caylon, (2004) Kapper and Love (2004), Black, Kim, Jang, and Park (2009), Hodgson, Lhaopadchan, and Buakes (2011).

Hypotheses H1, H2, H3, H4, H5, H6 and H7 are related to the external corporate governance mechanism and their influence on the performance of FSB. These hypotheses suggest that strong external corporate governance will influence better performance hence external corporate governance mechanism will have positive relationship:

H1: There is significant positive relationship between External Corporate Governance Score (ICGS) and FSB's performance.

H2: There is significant positive relationship between government funding (GFN) and FSB's performance.

H3: There is significant positive relationship between board employees power (EPW) and FSB's performance.

H4: There is significant positive relationship between leverage power (LPW) and FSB's performance.

H5: There is significant positive relationship between regularity authority (RAY) and FSB's performance.

H6: There is significant positive relationship between professionalization (PRO) and FSB's performance.

H7: There is significant positive relationship between board interlock (BTK) and FSB's performance.

Hypotheses H8, H9, H10, are related to the control variables and their influence on FSB's performance. These hypotheses suggest that age, size and positive growth will influence better FSB's performance hence control variables will have a positive relationship:

Population and Sample

The population of this study consists of 127 Malaysian Federal Statutory Bodies (FSB) (AG Report, 2013). FSB are selected as a basis for this study since they form about half of the total federal government entities with about 670,000 staff (Buang, 2012b). They are also bodies corporate i.e. incorporated by their own incorporation acts and adopt a corporate style management. Board of directors play a crucial role in implementation of good corporate governance which according to institutional and stakeholder theories will enhance their FSB's performance.

A sample size of 51 FSB is chosen for this study since each of these agencies has the accountability index which will be used as performance indicator.

Data Collection

Data of this study were obtained by content analysis. Content analysis was based on publicly disclosed information in 51 FSB's annual reports for the year 2009 till 2013 to analyse the relationship between ECGS and FSB's performance.

Data Analysis

Data through content analysis were edited, checked to have the required quality, accuracy, and completeness. Then the data were analysed using SPSS which will produce descriptive outputs.

Correlation analysis will be carried out to establish the relationship between the variables. Multiple regression analysis will be used to determine the extent to which variations in performance of FSB will be explained by ECGS.

RESULTS AND DISCUSSION

The Following Section Reveals the results of the study: 1) Descriptive statistics; 2) Correlation analysis; 3) Regression analysis that shows the relationship between ICG mechanisms and performance of FSB.

Descriptive Statistics

Table1: Descriptive statistics of ECG, control and dependent variables

	Minimum	Maximum	Mean	Std. Deviation
GFN	.0000	0.9946	0.5197	0.3661
EPW	.0000	1.0000	.7126	0.4534
LPW	.0000	.9730	.03246	0.1197
RAY1	.0000	1.0000	.7598	0.4280
PRO	.0000	1.0000	.8425	0.3650
BTK	.6667	1.0000	.8630	0.0669
ECGS	.1320	.9705	.6217	0.1480
KRAS	.5000	1.0000	.8348	0.1227
AI	.6271	.9667	.8368	0.0733
ROA	-8.7200	97.9200	5.7350	10.4377
ROE	-8.8000	100.0000	6.6504	10.7924
OAG	1.000	64.0000	23.9130	15.2027
OSZL	6.7440	11.8076	8.8896	1.0248
GRO	-97.900	270.7300	15.4471	37.1304

Table 1 shows that on the average FSB received 51.97% of their income from government grants. 71.26% of FSB has employee unions. While 3.3% of their assets are from debts and about 76% conform to the PM's directive No. 1 2009 which requested every FSB to form governance committee and meet 4 times yearly. About 84.25% of FSB became members of *Persatuan Badan-Badan Berkanun* as professional affiliation. 86.30% of the board members also sit on Board of other organisations. Overall FSB's practice of external corporate governance is 62.17%, slightly above average as indicated by ECG scores.

The average performance of FSB during the 5 years ie. From 2009 till 2013 can be gauged by the achievement of ROA, ROE, Accountability Index (AI) evaluated by Auditor General and Key Result Areas (KRA) scores which amount to 5.75%, 6.65%, 83.68% and 83.48% respectively. The average age of FSB was 24 years old with a mean assets of 776 million Ringgit and an average growth rate sale or income of 15.45% per year.

Pearson Correlation Matrix of ECG and Control Variables

Table 2 demonstrates the results of Pearson correlation analysis of 7 variables used in the ECG mechanisms. Employees Power (EPW) has a significant positive correlation at $p < 0.01$ with Professionalisation (PRO), Organisational Age (OAG) and Organisational Size (OSZ) and has a significant negative correlation at $p < 0.01$ with Organisational Growth (GRO). Regulatory Authority (RAY) has a significant positive correlation with Professionalisation (PRO). Professionalisation (PRO) has a significant positive at $p < 0.01$ with Board Interlock (BTK), Org. Age (OAG), Org. Size (OSZ) and a significant negative correlation with Growth of Sales (GRO).

ECGS has a significant positive correlation at $P < 0.01$ with all variables except Board Interlock (BTK) and Org. Size (OSZ). ICGS also has a significant negative correlation at $P < 0.01$ with Growth of Sales (GRO). There is no multicollinearity between variables since each individual correlation value is not higher than 0.7.

Table 2: Pearson correlation matrix of ECG and control variables

	GFN	EPW	LPW	RAY	PRO	BTK	OAG	OSZ	GRO
GFN	.								
EPW	.017								
LPW	-.037	-.68							
RAY	-.035	-.092	.057						
PRO	-.005	.323**	.091	.162**					
BTK	-.306	-.091	.164**	.046	.226**				
OAG	-.099	.126**	.061	.122	.341**	.076			
OSZ	-.416	.242**	.094	.104	.171**	-.009	.321		
GRO	-.024	-.172**	.055	-.004	-.185**	-.005	-.046	.031	
ECGS	.374**	.590**	.163**	.498**	.681**	.040	.236**	.082	-.168**

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

Multiple Regression Analysis

Regression analysis was used to test the hypotheses and to reveal the relationships between external corporate governance mechanisms and FSB performance. The results of regression analysis based on the governance model are as follows:

Relationship between ICGS and FSB performance

Table 3 shows the regression analysis according to Model 1:

$$Q_{it} = a + b \text{ECGS}_{it} + c \text{X}_{it} + \text{E}_{it} \quad (1)$$

External Corporate Governance Score (ECGS) represents the external level of corporate governance mechanisms, FSB performance represented by Return of Assets (ROA), Return of Equity ROE), Accountability Index (AI) and Key Result Areas (KRA) and control Variables: Organisation's Age (OAG), Organisation's Size (OSZ) and Growth of Sales (GRO).

Table 3: Results of regression analysis of ECGS and FSB performance

MODEL 1	ROA	ROE	AI	KRA
(Constant)	28.466 (5.033)***	29.031 (4.956)***	0.656 (16.021)***	.557 (8.543)***
ECGS	7.706 (1.844)*	6.749 (1.544)	0.099 (3.195)***	0.277 (5.491)***
OAG	-10.926 (-6.046)***	-10.771 (-5.699)***	0.013 (0.906)	0.037 (1.702)*
OSZ	-1.563 (-2.549)**	-1.509 (-2.355)**	0.012 (2.740)***	0.005 (.615)
GRO	.032 (1.994)**	.031 (1.827)*	000 (-3.096)***	000 (-.826)
R-Squared	0.201	0.180	0.140	.155
F-statistics	(15.530)***	(13.640)***	(9.950)***	(11.371)***

Notes: The values of coefficients are in the 1st row of the cell.

The values for T statistics are in parenthesis in the 2nd row of the cell.

* Indicative variables are at the 0.10 significant level.

**Indicative the variables are at the 0.05 significant level

***Indicative the variables are at the 0.01 significant level

As indicated by the regression analysis, F-statistics or the model fit for ROA, ROE, AI and KRA as proxies of FSB performance were significant at $p < 0.01$. According to this model, FSB performance measured in term of ROA, AI and KRA has significant relationship with External corporate governance practices (ECGS) at $p < 0.1$ and $p < 0.1$, and individually it has significant relation at $p < 0.01$, $p < 0.05$ and $P < 0.1$ with organisation's age, organisation's size and growth of sales.

Relationship between ECG Mechanism and FSB Performance

Tables 4 shows the regression analysis according to Model 2:

$$Q_t = a + b_1tX_{1t} + b_2tX_{2t} + b_3tX_{3t} + b_4tX_{4t} + b_5tX_{5t} + b_6tX_{6t} + b_7tX_{7t} + b_8tX_{8t} + b_9tX_{9t} + et. \quad (2)$$

Model 2 attempts to establish relationship between External Corporate Governance Mechanisms or variables, and FSB performance represented by Return of Assets (ROA), Return of Equity (ROE), Accountability Index (AI) and Key Result Areas (KRA) with

Organisation's Age (OAG), Organisation's Size (OSZ) and Growth of Sales (GRO) as control variables.

Table 4: Results of regression analysis ECG Variables, control variables and FSB performance

MODEL 2	ROA		RO E		AI		KRA	
	Coeff.	t Sig	Coeff.	t Sig	Coeff	t Sig	coeff	t Sig
Constant	20.155	(1.777)*	21.266	(1.795)*	.366	(4.485)***	0.402	(3.071)***
GFN	1.261	(0.671)	.303	(.154)	-.037	(12.725)***	.022	(-1.00)
EPW	-1.861	(1.294)	-2.085	(-1.390)	0.017	(1.563)	.070	(4.244)***
LPW	-9.501	(-1.515)	-5.074	(-.980)	-.104	(-2.90)***	.175	(3.060)***
RAY	-.889	(-.634)	-1.194	(-.814)	0.010	(1.010)	.040	(2.453)***
PRO	7.745	(4.107)***	8.117	(4.116)***	0.019	(1.352)	.058	(2.651)***
BTK	8.192	(.838)	9.557	(0.937)	0.302	(4.301)***	.028	(1.322)
OAG	-12.533	(-6.933)***	-12.554	(-6.652)***	.006	(0.419)	-.009	(-1.099)
OSZ	-1.254	(-1.801)*	-1.347	(-1.856)*	.018	(3.481)***	000	(-.637)
GRO	0.038	(2.377)**	0.037	(2.208)***	000	(2.847)***	.03	(1.512)
R sq	.258		.240		.223			
F	(9.335)***		(8.533)***		(7.627)***		.280 (10.516)***	

Table 4 indicates that in term of non-financial performance, Employees Power (EPW), Leverage Power (LPW), Regulatory Authority (RAY) and Professionalisation (PRO) have significant positive effects on Key Result Area (KRA). Government Funding (GFN), Board Interlock (BTK), Org. Size (OSZ) and Growth of Sales have positive significant relationship with Accountability Index. While AI has a negative relationship with Leverage Power (LPW).

The above table also indicates that in term of financial performance, Professionalisation (PRO) and Growth of Sales (GRO) have significant positive effect on ROA and ROE. While Org. Age (OAG) and Org. Size have significant negative effects on ROA and ROE.

CONCLUSION

Corporate Governance has become an essential mechanism to enhance organisational performance in private and public sector. Malaysia is undergoing a dramatic transformation to become a high-incomed developed nation by year 2020. Government Transformation Program (GTP) is being implemented in order to accelerate the performance of public sector agencies through the embodiment of highest standard of ethical conduct and good governance. In spite of this assurance by the government, Malaysia continues to experience challenges including corruption perception, inefficiency, unfair actions, and delay in service provision. These shortcomings deserve attention, assessment and improvement. Hence this study aims to assess

the effects of external corporate governance mechanisms on performance of Federal Statutory Bodies (FSB).

External corporate governance mechanisms refer to the institutional isomorphism and stakeholder influence on an organisation in a pursue to achieve its objectives. Institutional and stakeholder theories indicates that performance is influenced by institutional organisations and stakeholders that regulate and assist in its performance. As such, external structural component that serve to promote positive FSB performance in the long term. External corporate governance mechanisms in this study consists of Government Funding (GFN); Employees Power (EPW); Leverage Power (LPW) and Regulatory Authority (RAY) Professionalisation (PRO); and Board Interlock (BTK).

The mean level of external corporate governance practice in FSB is only 62.17% which is only above average, not according to the assurance by the government i.e. good governance. Mean FSB's age is 15 years. Average FSB's assets is 760 million Malaysian Ringgit. About 75.98% conformed to PM Directive Circular No.1 2009 regarding enhancing CG through governance committee. About 84.36% of FSB become members of Persatuan Badan-Badan Berkanun as professional affiliation. Average ROA and ROE are 5.74% and 6.65% respectively with a growth of sales about 15.45% per year.

This study shows that there is a significant positive relationship between ECG and all its variables: GFN, EPW, LPW, RAY, BTK, PRO and FSB performance. At the same time GRO has a significant positive relationship with ROA, ROE and AI. However Organisation's age (OAG) and Organisation's Size (OSZ) have significant negative relationship with ROA and ROE. Organisation's size (OSZ), Growth of Sales (GRO), Government Funding (GFN) and Board Interlock (BTK) have significant positive relationship with AI. While Employees Power (EPW), Leverage Power (LPW), Regulatory Authority (RAY) and Professionalisation (PRO) have significant positive relationship with Key Result Areas (KRA).

The results shows that positive increase in all ECG mechanisms: EPW,LPW, RAY, PRO, GEN, and BTK will contribute to better FSB non-financial performance which is their main function . On the other hand, Professionalism (PRO), and Growth of Sales or income GRO) have significant positive effect on ROA and ROE However Organisation's Age and Organisation's Size (OSZ) have negative effect on FSB financial performance: ROA and ROE.

To enhance the performance of FSB it is recommended that the practice of CG should be enhanced from just above average to a good level by conforming to latest PM Directive Circular No.1 2014 with a focus on external CG mechanism.

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CORPORATE INTEGRITY DISCLOSURE IN THE ANNUAL REPORT: A STUDY ON MALAYSIAN FEDERAL STATUTORY BODIES

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Abstract

The objective of this study is to discover the availability of integrity disclosures in the annual reports of Malaysian federal statutory bodies by focusing on the non-financial section of the reports. The sample was selected from a list of federal statutory bodies issued in the Auditor General Report for 2015. A total of 60 federal statutory bodies' annual reports were selected randomly, based on their availability on the internet. Content analysis of the non-financial section was used to explore for the existence of integrity being disclosed in the annual reports based on the initiatives taken by the government on the implementation of integrity culture in public sector organizations. Finding from this study reveals that, out of 60 federal statutory bodies, 45 of them (75%) disclosed some elements of integrity in their annual report although no specific requirement for such disclosure is required. Majority of the federal statutory bodies have established their integrity unit and provide other information on integrity in their annual report such as integrity enculturation programs, workshops on integrity and reinforcing human capital capability and capacity with integrity. Though this paper provides some useful insights into 'integrity' disclosures among public sector organizations, it is limited to the federal statutory bodies and the non-financial information in the annual reports only.

Key Words: Integrity disclosure, Annual report, Voluntary disclosure, Federal statutory body

INTRODUCTION

Good public sector governance and quality work culture are imperative for improving public confidence towards the government's ability in implementing the mandated policies. In this view, the government continues to take steps to strengthen the integrity of the civil servants in upholding and enforcing the principles of integrity and accountability in order to achieve better public delivery system.

In 1988, the Malaysian government has made effort toward creating an efficient and disciplined government administration with the highest integrity values through the establishment of the “Jawatankuasa Khas Kabinet Mengenai Pengurusan Kerajaan (JKKMPK)” or Special Cabinet Committee on Government Management (SCCGM). The most recent effort is the establishment

of Integrity and Governance Committee (JITU) in 2014. This effort is important in establishing and maintaining high standards of corporate governance leading to accountability, transparency and sustainability in the government administration. Outcome of the action taken is expected to reduce and eliminate corruption.

Another important agenda is the inclusion of integrity as one of the seven National Key Result Area (NKRA) initiatives. The first core of NKRA highlighted integrity which aims at reducing corruption, malpractices and abuse of power. It is expected that elements of ethics, integrity, accountability and transparency are enhanced in the system, procedures and processes of government administration.

In general, the concept of information disclosure has various meanings and definitions as included in the relevant literature. For example Parker (1992, in excerpts Azhar, 1998) defines information disclosure as a report on the financial and non-financial information to users, and it can be based on legislative requirements or standards, or may be voluntarily. Cooke (1992) refers information disclosure as both mandatory disclosure and voluntary disclosure in the financial statements, including notes to the accounts and analysis by the management on the business operations. Based on the above definition of information disclosure, it can be concluded that the concept of information disclosure is extensive and covers all the disclosure in various forms of media. However, the scope of this study is focused on aspects of information disclosure in the annual report and limited to the non-financial information only.

As a public record, annual reports are usually more accessible (Woodward, 1998, in Unerman, 2000) and are considered as the most important method for public sector organizations in disseminating their information to the stakeholders (Wall & Martin, 2003; Wei et al., 2008). Federal statutory bodies are chosen due to the availability of the annual report as it is a mandatory requirement to prepare and publish their annual reports every year. Using only annual reports in this study is also consistent with previous studies done by Coy and Dixon (2004), Schneider and Samkin (2008), Gordon et al. (2002), and Ryan et al. (2002b).

Meanwhile, as of today, there are only studies by Arshad (2013a, 2013b) that examined the disclosure of corporate integrity practices in the annual report. However, they focused on a multinational company and a public listed company and does not covers public sector organizations. Thus, the objective of this study is to discover the availability of integrity disclosures in the annual reports of Malaysian federal statutory bodies by focusing on the non-financial section of the reports. The remainder of the paper is structured as follows. The next part reviews the government initiatives towards integrity and relevant literature on disclosure in the annual report. This is followed by discussion of the methodology and results. The final part of the paper provides conclusions from the study.

LITERATURE REVIEW

Government Initiatives towards Integrity

Administrative machinery is an important aspect that determines the success of government in implementing policies and programs for public at large. Public sector administration is a major player in providing services to the community and the country. Efficient and quality public

delivery system is necessary in order to meet the needs of society and ensure the well-being of the citizen. Thus, it is important to appropriately address the integrity of the administrative machinery. In line with that, the government has established agenda for the integrity of the administrative machinery which is to achieve the following objectives:

- Enhancement of the principles of transparency, accountability and good governance
- Increase the integrity of public administrative machinery

In accordance to the above, in 1988, Government of Malaysia introduced the “Movement to Consolidate the Management Integrity System of the Government” with the establishment of Special Cabinet Committee on Government Management (SCCGM). This initiative is further strengthened with the establishment of the Special Cabinet Committee on Government Management Integrity (SCCGMI) in 1997 to establish a government administration that is efficient, disciplined and of high integrity.

The initiative was further enhanced through the establishment of the Integrity Management Committee (IMC) in 1998 based on the Prime Minister's Directive No. 1 of 1998 and Committee on Integrity Governance (CIG) in 2009 under Prime Minister's Directive No.1 of 2009.

In line with the vision and requirement mentioned, other various initiatives have been introduced and implemented within the Public Service. Among the primary mechanisms that have been initiated to implement and enhance integrity of government administration are:

1. Formulation of the National Integrity Plan (NIP)
2. Signing Integrity Pledge
3. Implementation of Integrity Pact To all Government Mega Project – (Treasury Instruction Letter (SAP) dated 1 April 2010)
4. Implementation Certified Integrity Officer (CeIO) - (Prime Minister's Directive No. 1 of 2009 - Series 1 No.1, 2011)
5. Establishment of Integrity Unit in All Public Agencies - (Circular No. 6, 2013)
6. Establishment of Integrity and Governance Committee (JITU) - (Prime Minister's Directive No. 1 of 2014)

National Integrity Plan (NIP)

Recognizing the importance of integrity in the society, Malaysian government has implemented the National Integrity Plan (NIP). National Integrity Plan was launched on 23 April 2004, by the Honourable Prime Minister of Malaysia, Datuk Seri Abdullah Ahmad Badawi, in line with the fourth challenge of Vision 2020 which is to form a strong features of moral and ethical community, with its citizens have intact religious and spiritual values, and anchored by noble character. This plan was developed with the main focus to establish and nurture an ethical culture and integrity among all level of society. Accordingly, all government agencies are encouraged to establish their organization Integrity Action Plan in order to strengthen and ensure the successful implementation of the National Integrity Plan.

Corporate Integrity Pledge (CIP)

In improving corporate governance, business ethics and corporate social responsibility, Corporate Integrity Pledge (CIP) has been established and implemented in an effort to encourage good governance and fight corruption. CIP is a declaration made by an organization in Malaysia in order to support efforts of preventing corruption in Malaysia. By signing this pledge, an organization made unilateral decisions to support anti-corruption principles as follows:

1. Commitment to promote the values of integrity, transparency and good governance
2. Strengthening of internal control that supports the prevention of corruption
3. Compliance with laws, policies and procedures involving corruption
4. Fight against any form of corruption
5. Supports all anti-corruption initiatives undertaken by the MACC

CIP developed by the Corporate Integrity System Malaysia (CISM) may help an organization to take the first step to detect corruption and to encourage organizations to implement integrity programs. CIP also may strengthen organization's internal control systems in preventing corruption.

Integrity pact

The implementation of Integrity Pact in government procurement is one of the initiatives under the National Key Result Area - Corruption and in accordance to the Treasury Instruction Letter (SAP) dated 1 April 2010. Integrity Pact is a concept originally introduced by Transparency International (TI) to assist the government, business and public institutions in order to curb corruption in public procurement.

Integrity Pact is a process of the declaration by the bidder/public to not offer or give bribes in obtaining contracts, or as a reward for getting a contract and to expedite government procurement process. Next, the bidder/public and government officials will sign a 'pact' or agreement for not committing an act of corruption in the execution of a contract and outlines actions that can be taken in case of breach of 'pact' or contract. In addition, the implementation of Integrity Pact helps to increase awareness of corruption among public officials and those who deal with government procurement, which in turn could eliminate corruption offenses which are common in government procurement.

Certified Integrity Officer (CeIO)

The establishment of Certified Integrity Officer (CeIO) is based on the Prime Minister's Directive No. 1 of 2009 - Series 1 No.1, 2011 that requires all heads of government departments and agencies to establish the program. As an accredited officer, Certified Integrity Officer (CeIO) plays a primary role to instil integrity and ethical values within the organization. Specifically, the role of the CeIO is to plan, implement and monitor the effectiveness of integrity programs in ministries, departments and agencies, respectively. A qualified CeIO would have a good understanding of integrity management, the required legal framework, compliance and monitoring system as well as the ability to develop integrity action plan. A

Certified Integrity Officer (CeIO) Programme is offered at the Corporate Integrity Development Centre (CIDC) of the Malaysia Anti-Corruption Academy (MACA).

Integrity unit

The latest initiative taken by the government to strengthen integrity in the public sector is the establishment of Integrity Unit in all federal and State government agencies through the issuance of the Government Service Circular No. 6 of 2013. The initiative for setting up an integrity unit in all government agencies is to ensure that the public service delivery system is disciplined, efficient, and uphold the principles of noble values, ethics and integrity. The Integrity Unit served as a focal point for managing issues related to integrity in all public agencies. The establishment of the Integrity Unit act as an internal control efforts by the agency to manage the integrity of the organization. The role of CeIO, as explained previously, is prominently featured in this policy when the Circular place them as a Head of the Integrity Unit. The Integrity Unit is a dedicated unit embed in the organizational structure of an agency and have “ownership” to all matters regarding integrity. The strategic roles of the Integrity Unit are to manage and implement effective initiatives to institutionalize integrity, managing complaints, prevention, compliance, detection and disciplinary actions in government agencies.

Integrity and Governance Committee (JITU)

A year later on June 3rd, 2014, an effort was made to further enhance integrity in the public sector through the establishment of the Integrity and Governance Committee (JITU) to replace the Committee on Integrity Governance (CIG) in every government ministries and agencies. This policy is issued through the Prime Minister's Directive No. 1 of 2014. The aim of the establishment of Integrity and Governance Committee (JITU) is to facilitate the integrity enhancement efforts of government administrative system to be elevated in all Ministries/States Government/Departments/Agencies. The role of JITU is to plan and implement prevention and remedial measures to overcome weaknesses in the areas of governance and integrity. JITU is only formed at the Ministry level whereas at department/agency level under Ministry, it is subjected to the Chief Secretary's consideration. In the meantime Ministers at the respective Ministry can direct the Chief Secretary to establish JITU in departments/agencies, particularly those in high-risk category.

Disclosure in the Annual Report

Previous literature indicates that there are various reasons why information is disclosed in the organizations' annual report or financial statement. Among the reasons are: (1) complying with the disclosure requirements which is the minimum requirements set by law or accounting standards; (2) in response to the market needs; (3) as an articulation of accountability and stewardship to the relevant parties; (4) as a social responsibility; and others. Researchers that focused on this aspects include Adam (2002), Azlan and Susela Devi (2007), Mohd Azlan (2006), Ryan et al. (2002), Blanco et al. (2011), Herawaty and Hoque (2007), Gray, Kouhy and Lavers (1995), Boyne and Law (1991) and Tai, et al. (1990).

Based on the literature, study on disclosure of information can be divided into three categories; aggregate disclosure, mandatory disclosure and voluntary disclosure (Azhar, 1998; Cooke,

1989). Aggregate disclosure covers all items required to be disclosed by the organization whether an item is classified as mandatory or voluntary information. Studies related to aggregate disclosure on corporate firm was done by Azhar (1998) and Cooke (1989). While studies related to the voluntary disclosure was done by researchers such as Aitken, Hooper and Pickering (1997), Deegan (2002), Entwistle (1999), Haniffa and Cooke (2002), Ho and Wong (2001), Leftwich, Watts and Zimmerman (1981), Patton and Zelenka (1997), and Prencipe (2004). Other researchers such as Ahmed and Nicholls (1994), Akhtaruddin (2005) and Hilwani, Hasnah, Akhtaruddin, and Hanem Hafizah (2006) studied on mandatory information disclosure. The literature also indicates that there are few studies associated with the disclosure of information on public sector organizations such as Copeland and Ingram (1983), Christiaens (1999), Collin, Keenan and Lapsley (1991), Coy, Tower and Dixon (1993), Daniels and Daniels (1991), Giroux (1989), Giroux and McLelland (2003), Laswad, et al. (2005), Robbins and Austin (1986) and Ryan et al. (2002a).

There are a number of previous studies in the public sector setting that focus only on specific aspects of reporting such as, financial (e.g. Banks and Nelson, 1994; Pendlebury et al., 1994), governance (e.g. Ryan and Ng, 2000), performance (e.g. Boyne and Law, 1991; Hyndman and Andersen, 1995; Hyndman and Anderson, 1998; Janet, 2006; Rutherford, 2000; Taylor, 2006), sustainability (e.g. Marcuccio and Steccolini, 2005) and intellectual capital (e.g. Schneider and Samkin, 2008). None of these studies has so far look into the integrity disclosures specifically.

A far as this study is concerned, there is no study has been done on integrity disclosures in the context of public sector organization in Malaysia. However, studies on corporate integrity disclosure in companies has been done by Arshad (2013a, 2013b). Using content analysis, Arshad (2013a) analyzed the nature and extent of corporate integrity disclosure in annual report of a multinational company based on recommended best practices on anti-corruption activities in Malaysia and other international practices. Findings of this study revealed that the company has disclosed a comprehensive level of information disclosure on the corporate integrity practices. In addition, it is also highlighted that the company is proactive in implementing and disclosing anti-corruption information that reflects the company's commitment in providing adequate financial and non-financial information to the various stakeholders. Meanwhile, another study by Arshad (2013b) on corporate integrity disclosure practice in a public listed company in Malaysia revealed that it has only disclosed a moderate level of information regarding their corporate integrity practices and need further guidance in realizing more comprehensive corporate integrity practices. Thus, this paper is an attempt at addressing the corporate integrity disclosure focusing on the Malaysian public sector experience.

RESEARCH METHOD

Unit of analysis for this study is the annual report of the Malaysian federal statutory body. The sample was selected from a list of federal statutory bodies issued in the Auditor General Report for 2015. A total of 60 federal statutory bodies' annual reports were selected randomly, based on their availability on the internet. Federal statutory bodies are chosen due to the availability of the annual report as it is a mandatory requirement to prepare and publish their annual reports every year. Using only annual reports in this study is also consistent with previous studies done by Coy and Dixon (2004), Schneider and Samkin (2008), Gordon et al. (2002), and Ryan et al. (2002b).

In this study, data is analysed through content analysis of annual report. Except for the financial information section, the whole annual reports were analyzed according to the predetermined disclosure items. The predetermined disclosure items were developed by identifying key features of the elements of integrity in the annual report. Elements of integrity are identified based on government initiatives towards integrity and other related document. These are shown in Table 1. A 'Yes' rating is given if the element of integrity is disclosed. All the integrity disclosure practices are then recorded in a disclosure score sheet developed prior to data analysis. In public sector accounting, a number of researchers have been using content analysis in their study, such as Yongvanich and Guthrie, (2005); Ho and Ni (2005); Lye and Fisher (2004); Gibson and Guthrie (1995).

Table 1: Source for elements of integrity

Element of integrity	Source
Integrity Unit	Government Service Circular No. 6 of 2013
Certified Integrity Officer (CeIO)	Prime Minister's Directive No. 1 of 2009 - Series 1 No.1, 2011
Integrity Committee	Prime Minister's Directive No. 1 of 2014
Integrity as Organization Shared/Core Values	
Code of Ethics	
Organization's Integrity Plan	National Integrity Plan (NIP), 2004
Channel for Reporting	
Whistle Blowing Policy	
Integrity Pledge	Corporate Integrity Pledge (CIP)
Integrity Pact	Treasury Instruction Letter (SAP), 1 April 2010
Separate Section on Integrity	Annual Reports
Other Integrity disclosure	Annual Reports

RESULTS

This section presents the results of the content analysis for integrity disclosures in the annual reports of 60 federal statutory bodies in Malaysia. From the analysis, out of 60 federal statutory bodies, 45 of them (75%) disclosed some elements of integrity in their annual report, while information on integrity is not available in the annual reports of the remaining 15 federal statutory bodies. Table 2 provides descriptive statistics for the integrity items disclosed.

Table 2: Number of integrity items disclosed

Element of integrity	Frequency (n=45)	Percentage
Integrity Unit	30	66.7
Certified Integrity Officer (CeIO)	1	2.2
Integrity Committee	11	24.4
Integrity as Organization Shared/Core Values	10	22.2
Code of Ethics	3	6.7
Organization's Integrity Plan	4	8.9
Channel for Reporting	3	6.7
Whistle Blowing Policy	6	13.3
Corporate Integrity Pledge	6	13.3
Integrity Pact	2	4.4
Separate Section on Integrity	4	8.9
Other Integrity disclosure	26	57.8

With regards to the elements of integrity, Table 2 shows that majority of the federal statutory bodies have established their integrity unit (66.7%) and provide other information on integrity (57.8%) in their annual report. Other integrity disclosure includes integrity enculturation programs such as integrity talk, integrity day and integrity month, workshops on integrity and reinforcing human capital capability and capacity with integrity.

It can be seen that the statutory bodies adhered to the government initiatives by establishing the integrity unit and providing information and programs related to integrity. This result proves that majority of the federal statutory bodies have practice the culture of integrity in promoting good governance in their organizations.

However, the disclosure of other elements of integrity such as Certified Integrity Officer, Integrity Committee, Integrity as Organization Shared/Core Values, Code of Ethics, Channel for Reporting, Whistle Blowing Policy, Corporate Integrity Pledge and Integrity Pact is less than 25% of the federal statutory bodies disclosed these items. However, disclosure on integrity committee is the third highest with 24.4% disclosure. The non-existence of specific disclosure requirement related to integrity to be published in the annual report may have contributed to such a low disclosure result.

Table 3 shows that the disclosure of detail information regarding the integrity unit amongst most of these sample entities has been adequately made (more than 30%). Although more than 60% of the federal statutory bodies have established their integrity unit, not all of them have a separate integrity unit. Out of the 30 statutory bodies that have established integrity unit, 14 of them established their integrity unit in combination with other unit such as internal audit department, legal unit, corporate governance unit and management division. This might be due to small number of staff assigned for integrity purposes.

Table 3: Items disclosed on integrity unit

Item Disclosed	Frequency (n=45)	Percentage
Integrity Unit	30	66.7
Integrity Unit separately	16	35.6
Integrity Unit combine with other unit	14	31.1
Integrity Unit in Organization Chart	27	60.0
Name of Chief Integrity Unit	17	37.8
Photo of Chief Integrity Unit	9	20.0
Function of Integrity Unit	4	8.9

Table 4 shows further analysis on the information regarding the integrity committee. As shown in Table 4, the disclosure on Integrity and Governance Committee is fairly low would suggest that most of the federal statutory bodies still did not established the committee. With the assumption that disclosure of integrity portray their practices on culture of integrity, it is evident that this element of integrity may not have received sufficient attention amongst these statutory bodies.

Table 4: Items disclosed on integrity committee

Item disclosed	Frequency (n=45)	Percentage
Integrity Committee		
Integrity and Governance Committee (JITU)	10	22.2
No of JITU Meeting = 3 times	5	11.1
No of JITU Meeting = 2 times	4	8.9
Others (Management Integrity Committee)	1	2.2

Overall findings show that federal statutory bodies followed the government's instruction to establish an integrity unit. However, the integrity culture is seems quite low and still lacking of the function and roles of the integrity unit. To some extent, the establishment of the integrity unit is basically made due the instruction by the government. Hence their effectiveness in creating the high integrity organization is questionable. In addition, it highlights that federal statutory bodies need some guidance in implementing a comprehensive integrity culture and ethics in their organizations.

The low level of disclosure on these items might suggest that majority of the federal statutory bodies may not implement the corporate integrity to their fullest commitment. Therefore, higher commitment is needed for the federal statutory bodies to discharge their accountability through information disclosure in the annual report. Perhaps the government should encourage federal statutory bodies to disclose integrity information in the annual report on voluntary basis so that the public at large are made known of the achievements of the government initiatives.

CONCLUSION

This paper seeks to discover the availability of integrity disclosures in the annual reports of Malaysian federal statutory bodies by focusing on the non-financial section of the reports. The objective is to undertake a content analysis of the non-financial section for the existence of integrity being disclosed in supporting the government initiatives. Based on the initiatives taken by the government on the implementation of integrity culture in public sector organizations, this study reveals that most of the statutory bodies disclosed elements of integrity in their annual report although no specific requirement for such disclosure to be made. Given the published annual report can influence the perception and image of federal statutory bodies to the public at large, it is necessary to provide better understanding on the practice in relation to the integrity disclosure in the Malaysian public sector annual reports.

Though this paper provides some useful insights into 'integrity' disclosures among public sector organizations, it is limited to the federal statutory bodies and the non-financial information in the annual reports only. Further study should look into the other government organizations including the government link companies. Furthermore, analysis should cover both financial and non-financial information in order to explore a more comprehensive disclosure of integrity in the annual report. Interviews may be conducted in providing a better understanding of the integrity practices in the public sector.

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Concurrent Session IIB
Education Governance

LEADERSHIP AND INTEGRITY IN EDUCATION: GOOD GOVERNANCE IN THE MIDST OF CHANGE

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ABSTRACT

The role of a school administrator is critical to the success – or otherwise – of a learning institution. Good governance, as well as transparency and accountability in exercising administrative authority in the educational institution, therefore is expected from the leader. In the Philippines, a school administrator faces challenges especially during the transition period when routine shuffling of principals occur between primary schools. This makes it challenging for school principals in general to finish improvement plans before the end of tenure at a specific primary school because of dynamics of change in the institution. This study aimed to describe the implementation of change processes by a principal in a public school setting. It sought to understand the context and the norms that permit the exercise of change management in a setting where leadership tenure is short-lived. An ethnographic approach was used in the study with the aim of coming up with common themes based on observations and interview with key informants. The themes were from a series of thematic analyses collected during the course of the study. The key informants were native to the educational institution—educators and staffs— including the school administrator.. The study results showcased the common themes of: 1) functionality in the school organization; 2) competitive spirit in the organization; 3) orderliness, discipline and control; 4) effective use of various forms of capital; and 5) dependency to the Local Government Units (LGUs) and other sectors. Good working relationship between colleagues was also highlighted as a precursor to creating a good working environment for the stakeholders of the institution. This study showed that successful change management in the public elementary school required the leader to develop a plan that fits the organizational culture. Establishing good working relationship became an instigating factor for the leader to smoothly introduce change.

Keywords: Dependency, Ethnography, Good governance, Leadership

INTRODUCTION

The educational system in the Philippines, since its establishment during the American occupation, has required students to undergo six years of elementary education, and has been that way ever since. The country has two types of primary education providers—public and private—and the distinction depends on whether the institution is funded by the government or not. These six years provided the fundamental frame on which secondary and tertiary levels banked on, thus proving that elementary school is inherently important as foundational base for future knowledge development of students in the Philippines.

Of the two types of elementary schools, public schools are government-controlled and managed, where budgets, systems, and structures are dictated upon by the Department of Education (DepEd). This “establishment and maintenance of free public education in the elementary and high school levels and the implementation of compulsory elementary education for all children of school age” (DECS Memorandum No. 176 1988) are the main purpose of DepEd, as aligned to the 1987 Philippine Constitution. To comply with this mandate, the Philippine government granted to the department the largest share of the Philippine budget, with an even significant 31.5% increase for 2017 as compared to the previous year (Philippine Government Official Gazette, January 2, 2011).

Given such important role in the formative years of young students in the Philippines, DepEd utilizes school administrators for each of the public schools, each aligned to the mandate of the department. Referred to in the public-school system as ‘principals,’ these individuals lead each public elementary school unit, acting as administrators and leaders of the school. They have the authority and act as representatives of the government in continuing the task of providing quality education. According to *Batas Pambansa* [Philippine laws, statutes and codes] No.232 of 1982, or also known as the “Education Act of 1982,” the following were the roles of school administrators or principals:

1. Perform his duties to the school by discharging his responsibilities in accordance with the philosophy, goals and objectives of the school;
2. Be accountable for the efficient and effective administration and management of the school;
3. Develop and maintain a healthy school atmosphere conducive to the promotion and preservation of academic freedom and effective teaching and learning, and to harmonious and progressive school-personnel relationship;
4. Assume and maintain professional behavior in his work and in dealing with students, teachers, academic non-teaching personnel, administrative staff, and parents or guardians;
5. Render adequate reports to teachers, academic non-teaching personnel and non-academic staff on their actual performance in relation to their expected performance and counsel them on ways of improving the same;
6. Observe due process, fairness, promptness, privacy, constructiveness and consistency in disciplining his teachers and other personnel;
7. Maintain adequate records and submit required reports to [DepEd].

Despite this string of responsibilities and tasks, most principals do not finish their tenure in the schools they are assigned to. More often than not, principals were rotated within units handled by regional district offices. Thus, they assumed leadership roles within a limited amount of time— an average of four years. Certain strategic plans and projects they devised at the start were unaccomplished. These principals knew that their tenure is at the discretion of DepEd, their performance or length of service in the office, and the subsequent recommendation of the local government units.

In light of this, change strategies developed and planned by the principals or school administrators in accordance to their mandates were left unfinished. The shifting of posts led to shoving aside of the unactualized plans by the prior principal, or consequently, the new school administrator will draw new plans again. However, such schemes rested upon the temporariness of the position. This study therefore aimed to describe the dynamics of implementing change efforts in a public school system, focusing mainly on the exercises of leadership in an academic context.

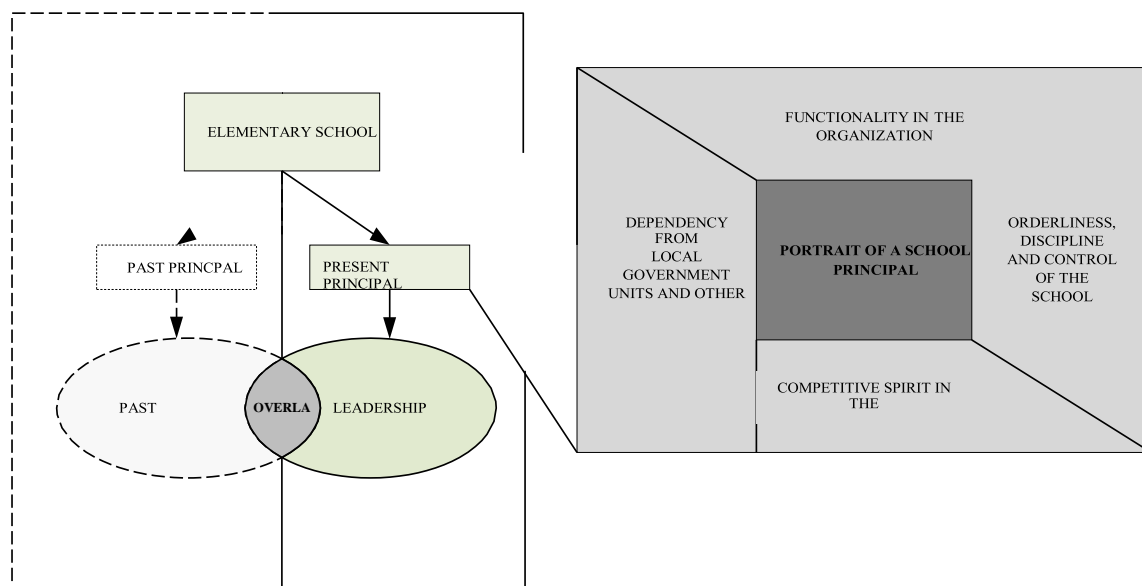


Figure 1: Changing leadership in an elementary school

Figure 1 shows the dynamics of the organization with concurrent administrator changes on an elementary educational institution at the principal level. While there are fundamental differences between the desired plans of past and present school administrator or ‘principal’, there are overlaps between these projects that may or may not be pursued. However, more than the projects, the elementary school principal has other representative functions in the school as it interacts with the society and the government.

STRUCTURAL FUNCTIONALISM AS FRAMEWORK

Using the changing approaches in the notions of leadership as background, cultural overviews were considered for review in the following concepts: 1) leadership in the pre-modern world:

the non-state; 2) leadership within the pre-modern world: the monarchical state; 3) leadership within the modern world: the nation-state and the business corporations; and 4) leadership within the post-modern world: preamble state, global organizations and networks. Since the school is government-controlled and managed (i.e., budgets, systems, and structures are dictated by the department of education in the Philippines) the study focused on the notions of leadership that specifically centers on governance in republic organizations. In this case, the study resorted to the third approach in changing motions of leadership (i.e., leadership within the modern world: the nation-state and the business corporations.) It is important to note that this notion of leadership focuses on the emergence of human sciences (e.g., history, economics, sociology, psychology, anthropology, and management studies) thus, analytical and pragmatic application in the fields of sociology and anthropology were considered for this study. The concept of structural functionalism served as the backbone of the ethnographic study. Focusing on this theory that perceives society as a complex system with components and parts working together to promote stability, structural functionalism addresses society as a whole in terms of the function of its constituent elements (e.g., norms, standards, customs, and traditions) in the institution. This framework allowed the study to be presented in macro-sociological evaluation comprehensively focusing in social structures that forms the elementary school as society and as a whole.

METHODS

Qualitative research specifically the use of ethnographic approach was used to synthesize data gathered from participatory observation and open ended interviews with the subject and key informants. Common themes were highlighted to bring a deeper understanding of organizational practices concerning administration in the school, and to gain appreciation of the essential and critical role of leadership in the organization. The data is collected through a series of conversations conducted by the researcher. The key informants were identified since the veracity of the ethnographic study is dependent upon the reliability of the key informants. The researchers triangulated every observation made by the key informants with that of others to assess accuracy and prevent bias. Data collection was conducted using a semi-structured interview as the qualitative method of inquiry to allow for a free exchange of ideas between researcher and key informants. During these series of interview, a set common theme had presented themselves from the data collected.

The Participant and Key Informants

The school principals, as well as the key informants were interviewed by the researchers on separate occasions. The teachers, who were the key informants, were selected through the criteria of tenure, and richness of qualitative information that these members may contribute to the study. These key informants also have first-hand knowledge of the current conditions in the elementary school. They were selected from a narrowed down list of potential key informants. The key informants were interviewed while the researchers were conducting their observations of the school community; as such, this led to answers that are more spontaneous.

Research Questions

This research aimed to describe the implementation of change processes by a principal in a public school setting. It sought to understand the context and the norms that permit the exercise of change management in a setting where leadership tenure is short-lived. This paper specifically asked the following questions:

1. What are the strategies and processes used by the school principal of a public school to instill change in the institution?
2. How do the employees of the organization adapt to the changes implemented?
3. How do the leader and followers adjust to the transitionary role of the principal in the public school?

These questions were answered through the qualitative research, specifically the ethnographic method, since it showed the answers to these questions in their “natural surroundings” (Arce 2001).

Research Setting

What determines the selection of place and people in an ethnographic study is the nature of the research question asked (Fetterman 1998). Given the questions addressed, the study focused on a public elementary school, one of the oldest elementary schools in the National Capital Region (NCR) of the Philippines located in the City of Marikina.

The Elementary School

The elementary school is located at one of the oldest barangays in Marikina City. As of September 2016, the school has a student population of 2,000. Its teaching force is composed of 50 full-time employees, while administrative support is composed of 10 volunteers mostly from LGU’s. The school vicinity bordered a local police station, an activity area, a church, a grocery store, a shopping center, and the “barangay” [town] Hall that houses the health center. Other communities that surround the school are the following: 1) a private Higher Education Institution (HEI); 2) a national high school; 3) a private grade school, 4) a pastoral institute; 5) school of theology; and 6) a catholic integrated school.

The School Principal as a Leader

The current principal of the elementary school started to head the school on 03 May 2011, initially designated as Officer-In-Charge (OIC). It was in 15 June 2012 when the formal duty as principal of the school was assumed. As a school head, the school principal was viewed to be very effective by the colleagues and by the entire community (i.e., parents, students, nearby LGUs surrounding the school.) The principal was described by most the members of the school community to be very transparent (i.e., use of budget, and school resources), industrious, a role- model, and well-loved by parents and students. The principal is also a person known by the community as someone who does not talk a lot about personal achievements, but rather talk about plans, visions and dreams for the school community. More often than not the principal

would phase-in the members of the community to changes by talking about the various possibilities of improving bits and pieces in the school (e.g., cleanliness, orderliness, discipline, honesty, etc.) According to some of colleagues, the principal would talk about success stories of the school to parents, teachers, students, and most especially to visitors of the school. This is perceived to be the way of the principal to motivate the community, and the way of expressing gratitude to the people who had been directly and indirectly involved in the realization of the projects. In general, the school principal is perceived to have a very good working relationship with subordinates, has established a positive relationship to the parents of children studying in the school through school activities that fosters camaraderie, and friendship, and has won the hearts of the students because of the cordial, and affectionate way of dealing with them.

Procedure of Data Gathering

The data collection strategies used interviews with the principal, with the key informants, and direct observations of the school environment. The initial step was for the researchers to select possible key informants narrowed down from a list of potential persons with relevant knowledge and experience pertinent to the identification of key points in the study.

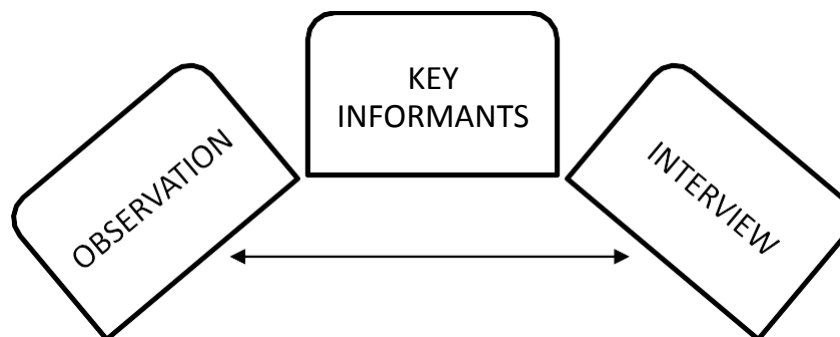


Figure 2: Interplay between observations and interviews vis-a-vis the key informants

A face to face interview was conducted, because one-on-one interviews are more likely to generate a free-flow of ideas being exchanged and it leads to more detailed responses as opposed to the more detached telephone interview.

The interviews were separately conducted among the principal of the elementary school, and two teachers under the leadership and authority of the principal. The interview with the principal happened inside his own office on a pre-scheduled date. The key informants were teachers of the school selected through the criteria of tenure, and richness of qualitative information that these members may contribute to the study. The principal and the key informants were interviewed while the researchers were conducting their observations of the school community; as such, this led to answers that are more spontaneous.

The interviews are "qualitative, in-depth interviews of people selected for their first-hand knowledge about a topic of interest. The interviews are loosely structured, relying on a list of issues to be discussed. Key informant interviews resemble a conversation among acquaintances,

allowing a free flow of ideas and information. Interviewers frame questions spontaneously, probe for information and take notes, which are elaborated on later" (USAID 1996).

Observation

The researchers took several days to observe and go around the elementary school grounds, taking note of visible and observable information that will allow the researchers to make initial inferences about the work environment. It gave information on the behavior of other people, with objects, events or processes and other data sources (Arce 2001). Added to this, observing allowed the verification of information given by all those interviewed to see if the changes mentioned were all implemented. The researchers took notes and pictures to support such claims.

Data Analysis

Thematic analysis was used in examining the data. This meant listening, reading and re-reading the interview transcriptions and highlighting important responses to the questions. This was matched with the observable behaviors manifested by the students, teachers and community. According to Braun and Clarke (2006), 'A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data.'

A thematic analysis was used because it is essentially a method for identifying recurring patterns and analyzing these identified patterns in qualitative data. This analysis method is useful especially in data involving people's experiences or understandings of their immediate surroundings. In the course of the analysis, themes were identified. These themes are coherent and meaningful patterns in the data that are relevant to the research question. Upon these, the researches had to reflect on whether the identified themes tell a convincing story about the gathered qualitative data.

RESULTS

This research sought to understand the change management practices and implementation done by a public school principal to his own academic institution. The results focused on the directly observed information and on the analysis of the themes based on the thematic responses of all those interviewed the in light of the theoretical framework.

Functionality in the Organization

The school's organizational chart seen outside the principal's office serve as a functional tools that depict the staffing order of the community. Illustrated in a hierarchical format (i.e., from principal down to the administrative staff), the organizational charts help those who are visiting the school to identify "who does what in an organization". It also shows the number workforce in the school, and the chain of command in the institution. However, the school may not be conscious of the ineffectiveness brought by the "notions of functionality" that leads to a very bureaucratic way of running the organization. On the lighter side, it has been

observed that the school system has already established rules and procedures that really permit monitoring on its own simple way (i.e., attendance of employees, quality assurance in teacher’s delivery of instruction, local accreditation etc.) As expected, bureaucracy creates “rules” referring to a plethora of restrictions that leads to rigidity (e.g., decision making). This makes the school community respond “too bureaucratic” to the demands of its constituents for quality education and excellent service delivery.

Dependency from the Local Government Units (LGUs) and from other Sectors

The school’s dependence to the local government units (LGUs) is very visible (i.e., office of the city mayor, congressman, barangay captain, etc.) Acknowledgments of donations were observed within the campus, as well as names and insignias of the politician or the government official who contributed or spearheaded a particular project for the benefit of the school were observable in the school vicinity. The provision of basic services (e.g., health care, social welfare and among others) was all sourced out by the school to LGUs. The office of the congressman provides and maintain infrastructure facilities intended primarily to serve the needs of the school residents (e.g., additional classrooms, chairs and tables, etc.) Additionally, the school community also benefited a lot from the support given by the government to the *barangay* [town]. The services and facilities related to general hygiene, sanitation and solid waste collection, multi-purpose halls and pavements, and water supply systems are all coming from the funds of the city mayor’s office and other sectors of local government. It has been observed that the capabilities of the school in terms of providing better services to its stakeholders were enhanced by the support provided by the local government units, especially from the help extended by the municipalities and barangays.

Competitive Spirit in the Organization

The commendations received by the school in various award giving bodies, as well as the recognitions received by its students, teachers, and staff were all placed in an area that can easily be noticed when you enter the principal’s office. This reflects the drive, and the motivation of the school officials to continuously improve its performance every year. The competitive spirit in the school community is evident in a very positive way. Much attention is directed by the school head to better service delivery and academic excellence that can be achieved through utilizing the available talents in the community. The commitment of the school head; the motivation and aspirations of the teachers; the core capabilities of the management team (i.e., LGUs); the aspiration of the school’s stakeholders; and the ability of the community to build and maintain alliances are all identified to be a contributing factor to the success experienced by the school as a community today.

Good Working Relationship

It has been observed that relationships of teachers with their colleagues gave a huge impact in creating a good working environment. The teachers who have been in the school for more than 20 years are considered to be an epitome of good working relationship with the past and present school heads, along with the past and present heads of the LGUs surrounding the school. It is important to note that teachers are significant the academic, moral, and personal lives of the children, and that teachers play pivotal role for child education. Outside of child’s parents, the teachers are the adults that may give the most impact on the children.

This is why good working relationships with teachers are important, for the child and the parent. During the interview, it was observed that the good attitude of the teachers on daily activities makes their day to day work more fun and satisfying. This created a positive outlook that increases their productivity. The principal also encourages this type of relationships within and without the institution

Orderliness, Discipline and Control within the School Community

The institution’s governance arrangements demonstrate probity, strategic vision, accountability, awareness and management of risk, and effective monitoring of performance. Additionally, the school is also guided by the philosophy of cleanliness as a way of life; this create a wholesome attitude, clean surroundings that facilitates effective real teaching, learning, and working to take place. The orderliness, discipline and control within the school community created a positive impact on the clarity of rules and the tidiness of the learning environment. This is very evident in the classrooms, offices, comfort rooms, and the school grounds.

Success of School in Complex Locality and Its Effective Use of Various Forms of Capital

Reflecting on Bourdieu’s insights into the fundamental guises of capital coming from the leadership perspective, the researchers considered that the ability of the leader to recognize capital in its various semblances enables the leader to easily promote creativity and innovation in the organization. The economic capital which may be institutionalized in the form of money and property rights according to Bourdieu (1997) can easily be channeled to organizational efforts of providing training to people, building infrastructure, and buying sophisticated equipment to increase efficiency because of readily available financial resource. In the case of the elementary school in focus, it capitalized on the following: 1) linkage to LGUs; 2) goal orienteers and the culture of positive competitiveness; 3) good working relationships; 4) orderliness, discipline, and control; and lastly 5) the school’s structural functionality. Similarly, the cultural capital which may be institutionalized in the form of education and training in running an organization (Bourdieu, 1997) can be used by the leader as an advantage over other organizations without proper schooling in product development or service enhancement for instance (e.g., the leader’s experience in high school administration). Additionally, social capital, which Bourdieu (1997) termed as “connections,” can be used by the leader to strengthen its linkages, and social support system (e.g., LGUs). Among the three fundamental guises of capital, we believe that social capital has the most significant effect to generative (i.e. a type of leadership allied to creativity and innovation) and transformational leadership (i.e. type of leadership allied to transcendence). More often than not, it is true that when we have a meaningful relationship with another person we work more effectively together. It is also important to note that when people in the organization have common goals and consistent purposes, it is easy to channel organizational efforts toward the same common outcome. As pointed out by Mathew (2009) effective leaders recognize the importance of building solid relationships in the organization.

CONCLUSION

Successful change management required the school administrator and leader to develop a plan that fits the organizational culture. Establishing good working relationship became an instigating factor for the leader to smoothly introduce change. Transparency was used by the leader as an input to strengthen the present organizational structure. The leader’s approach of making the people in the organization appreciate the reasonable use of limited resources increased the trust of the various stakeholders that the school is depending on (e.g., LGUs, other donors). As an output, the organization experiences orderliness in the campus, discipline that is imbibed by the community. Similarly, the members of the community were triggered to continuously improve their present performance by controlling the factors that may hinder progress. Thus, a competitive spirit was developed within the community.

The organization adapt to the changes implemented by: 1) willingness to compromise. When people are not informed about pending change, or when change occurs without the leader communicating what is going on, problems occur. Leaders and followers need to maintain open lines of communication with everyone in the organization and release as much information about pending changes as possible; 2) stepping back. This refers to having time to analyze situations thoroughly and view actions and circumstances from different angles and perspectives to gain an accurate understanding of what has happened; and 3) through positivism.

Managing change is also managing your feelings concerning the change. Rather than noticing negative aspects of the change occurring, search for the positive. Try to view the change as a way of improvement and maintain a positive attitude. The leader and the followers adjust to the transitional role of the school head with a positive outlook. “visualizing a great day ahead” where there is a readiness to meet new challenges head-on, it creates a positive attitude that breeds confidence in individual abilities (e.g., getting used to be visited for accreditation, etc.) and having an outlook to developing a rewarding and enjoyable career such as retirement.

DIRECTIONS FOR FUTURE RESEARCH

Directions for future research may involve use of other research methodologies to further understand good governance in the academe (e.g., quantitative evaluation) to gather feedback on the ethical or unethical practices, if any, in the academe. The subject of accountability and transparency in the academic institution could be explored further on future studies. School-based financial management can also be a specific focus for possible studies since budget scrutiny at school level especially in public institutions are rarely done. And on a similar capacity, utilize the same ethnographic approach but with longer time spent in the study – longer observation periods, more key informants interviewed, more time spent in looking at the infrastructure, systems, and organizational practices for better inference. Future researches may also include a wider scope including more than one school and this time includes high school level and tertiary level institutions both private and public.

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DYNAMICS AFFECTING THE DEVELOPMENT OF A SUSTAINABLE PRINCIPLED WORKPLACE CULTURE

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ABSTRACT

Unethical practices in a wide variety of organizational architecture not limited to government, private industries, education, and non-government agencies call for leaders to practice ethical leadership and better corporate governance to lessen wrongdoings in the workplace that are often associated to undesirable outcomes. In this study, the sustainability of a developed principled workplace culture was identified to be an excellent input in making an organization robust. Qualitative research specifically thematic analysis was used to synthesize data gathered from ten organizational unit heads in the Philippines through in-depth interviews. Participants involved in the study were composed of organizational leaders from the academe, religious congregations, private corporations, and government agencies. Results of the study revealed that although there were existing ethics programs within organizations, structural problems may lead to unfair policies and systematic corruption in the company. The study revealed that politics in the organization provide emphasis on conformity and social acceptance to live up to social expectations, influencing the level of relationships among employees. Also, the study revealed that the role of the leader in building an ethical culture in the organization is a constant endeavour, no matter how small or large, local or global, the organization is. The study made it known that cultivating and sustaining a principled workplace culture is not a one-time achievement benchmark. Rather, people, leaders, organizational systems, and culture need to be regularly alerted for ethical vigilance.

Keywords: Workplace culture, Organizational architecture, Corporate governance, Systematic corruption, Ethical vigilance

INTRODUCTION

It has been long established by many published researches in both advanced and developing nations that unethical behavior has a negative effect in the workplace. The works of Bennett and Robinson (2000); and Robinson and Bennett (1995) are few of the researches that supports this premise. However, there is also a significant body of research suggesting that

unethical behavior remains to be a one of the top concerns in the workplace nowadays (Appelbaum, Shapiro, and Molson, 2006; Kaptein, 2011). This is true across all nations according to Schein (1985). Hence, the incessant call for research to identify the real status, whether there had been increasing or decreasing unethical practices within organizations. The work of Turner, Barling, Epitropaki, Butcher, and Milner (2002) is one of the recent studies that braced this line of thought. The study posits that a principled workplace culture is an organizational climate propelled by ethical behavior of both the leaders and the employees in the organization. The study identified principled workplace culture as a collective behavior that compels high performance and success in business. Rest (1986); Rest, Narvaez, Bebeau and Thoma, (1999) referred to this as ethical behavior. In some researches this was referred as productive behavior (Jex, 2002).

It is important to note however that a principled workplace culture is formed by an individualist act that created a ripple effect promulgating an ethical system in the organization developed in an instinctive way. Contrary to a non-principled workplace culture, is an environment that violates generally accepted moral norms (Kaptein, 2011). These behaviors directly and indirectly increase wrongdoings in the company leading to loss of customers, financial loses, reputational damage, and in some severe cases, bankruptcy. Jex (2002) referred to this as unethical behavior or counterproductive behavior (Marcus and Schuler, 2004). The study suggests that in earlier researches both ethical and productive behaviors were defined as positive work practices but on no occasion as fitting behavior that is intuitively developed. The study is coming from a premise that through ethical vigilance a principled workplace culture can be achieved. Therefore, within this study, the objective is to bring in understanding on how an ethical workplace culture can be developed and sustained which in turn becomes an organizational benchmark of a principled workplace culture.

Background of the study

The study suggested an explanation on how an ethical workplace culture can be cultivated and sustained in the organization. The study highlighted important concepts and findings from the in-depth interviews of various organizational leaders in the Philippines (see Figure 1). Common themes gathered from the sector representatives of education, religious, government, and the private sector were culled through a systematic analysis to bring a deeper understanding of ethics in the workplace.

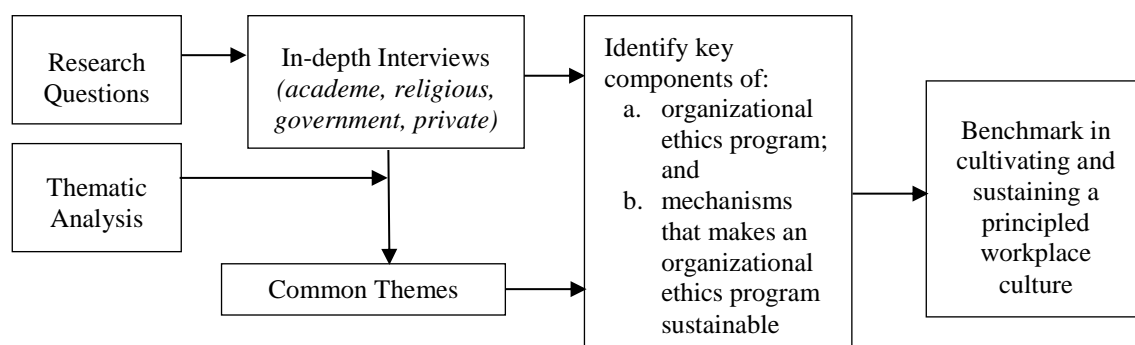


Figure 1: Research model

Literature suggests that ethical actions are not dictated by strict procedures or guidelines to follow. In most cases, ethical actions change and progress in line with present social norms (Cascio and Aguinis, 2011). Having identified that ethical actions are rather progressive with respect to present organizational norms, in-depth interview was used as a primary method to gather data in the study. Participants in the study were given opportunity to tell their own story and to speak openly and in detail about their past and present experiences in managing unethical practices within organizations. Flick (1994) mentioned that in-depth interview is a long-established data collection method for social scientists. Additionally, Flick (1994) also mentioned that an interview as compared to non-face-to-face questionnaire is more effective because the interviewee's viewpoints are communicated. The study is grounded on that idea that since it is vital to understand how organizational cultures suppress or encourage ethical practices within the organization (Bisel, Kelley, Ploeger, & Messersmith, 2011) a richer and a more appropriate option to collect would be in a qualitative way. In this study, the interview is considered to be a research data technique used to gather information through a carefully planned series of questions.

METHODS

Qualitative research specifically the use of thematic analysis was used to synthesize data gathered from ten organizational unit heads in the Philippines through in-depth interviews. Common themes were highlighted to bring a deeper understanding of organizational practices concerning ethics in the workplace, and to gain appreciation of the essential and critical role of leadership in the organization. Finally, key points of strategies for leaders were listed and summarized to bring awareness of how paramount the need was to build ethical culture in organizations and promote a continuous ethical climate to sustain the moral purpose of empowered mission of individuals and organizations.

Participants

Ten organizational leaders from the Philippines were interviewed. Participants involved in the study were composed of organizational leaders from the academe (30%), religious congregation (30%), private corporations (30%), and government agencies (10%) all having extensive experience in the administration and human resource practice. Of the ten participants 60% were male and 40% were female. The average age is 47.60 (SD=10.36, range is 33 to 60 years of age). In terms of civil status 60% were single and 40% were married.

Research Questions

The goal of this study was to highlight key concepts and important findings from different reflections made by the proponents in the workplace on ethical culture. Some points were observed occurrence while others were first-hand experience. The study explored the inter-relationships of people with the organization's structure, tradition and culture as backdrop. This paper specifically asked the following questions:

1. What are the most pressing problems in your current or past workplace?
2. Where are the problems coming from individual, organization or cultural sources?

3. What are your organization’s strengths and weaknesses that contribute to the problems and its existing ethics program?
4. What should be the key component of an organizational ethics program in your organization? Or in the Philippines as country?

The interviewees were allowed to talk as widely as possible about the questions posed regarding their beliefs, attitudes and understanding on how organizational ethical problems abound, their sources and the inherent strengths and weaknesses of their individual organization’s ethical structures.

Procedure of Data Gathering

The study focused in understanding the experiences of individuals that have been immersed in studying the ethical culture and ethical climate in the academe, business sector, government and religious life. Selected participants in the study brought to the fore the influence of complex structure of an organization, and the external and internal dynamics in the organization. Participants were asked in particular to reflect on behavior of employees in the organization. Also, the participants were encouraged to provide interpretative phenomenological analysis as to the origin of ethical culture and climate. Strengths and weaknesses of the organization as a whole, and the interplay of individuals and the relationship of the leader and follower were also explored.

Data analysis

Thematic analysis was used for a systematic review of answers from the participants which Chalmers (2003) and Oakley (2002) believe to be an important methodology for to bring research results even closer to actual practice and basis for decision-making. The works of Cooper and Hedges (1994), EPPI-Center (2006), Higgins and Green (2006), and Peticrew and Roberts (2006) also suggested that thematic analysis is a rigorous review and an explicit method that can be used to bring together results of primary research to give answers to specific research questions. In discussing the most common organizational problems in the workplace, five superordinate themes appeared: politics within the company, disciplinary problems, counterproductive behaviors which can be linked directly to the individual or in relation to others, unfair policies and systematic corruption. The major themes and the sub-themes along with direct quotations from the interviewees were prepared in a matrix showing how ethical culture in the organization can be shaped (see Appendix I).

RESULTS

Results of the thematic analysis showed that four important components are needed to develop a principled workplace culture. These are: 1) understanding the sources and the antecedents of unethical behavior within the organization; 2) the need for ethical individuality; 3) the need for ethical leadership; and 4) understanding the role of culture in building an ethical culture. All of these components were identified to be inputs in creating and sustaining principled ethics culture.

Antecedents of Unethical Behavior

The data showed that politics in the organization provide “emphasis on conformity” and social acceptance to “live up to social expectations,” influencing the level of relationships among workers. The research find disciplinary problems as well such as “lying, theft, immoral conduct” common practices within the workplace. There were two subthemes under counter-productive behaviors: 1) that of it being intrapersonal, and 2) interpersonal. Intrapersonal counterproductive behaviors were individualist acts that merit time away from work such as “engaging in social networking,” while interpersonal counterproductive behaviors allow people to collectively do acts that “create low morale, job satisfaction,” through “inappropriate use of one’s judgment.” Structural problems lead to unfair policies affecting “great number of students” showing that unfair policies have adverse effects on the stockholders of the organization. Systematic corruption has been embedded into the culture and organization such that suppliers have to negotiate with their clients enticing individual financial benefits such as “10% commissions.”

When the interviewees were asked about the sources of problems of the existing ethics programs, three superordinate themes arose: 1) that the sources are personal, 2) organizational, and 3 cultural. Personal causes can be internal developmental issues affecting the psyche of the individual, appearing in consequential results in the work. There could be “issues of mistrust” leading to a “high disregard on the concept of teamwork,” or a deficiency in conscience, or that these development issues can be rooted in familial causes. On the other hand, there could be dispositional issues on how a person relates to other team members in the work. For instance, the participants highlighted blindly following leaders, ethical violations due to family situations, and limitations in work systems. The participants explained that one’s attitude to a particular facet of work can cause ethical dilemmas to occur. Organizationally, issues of non-innovation and staying with antiquated processes may results in stagnation and unresponsiveness to global times. Changing behaviors, ethical or otherwise, will not be addressed by remaining stagnant. Added to this, policies and leadership philosophies must be laid out clear to improve systems.

Development of Individual Ethicality

Individually, there is a strong need for personal clarity in the members of the organization. The intense “familiarity and a great regard for harmony” instinctive in the psyche can cause people to act in assimilation to social acceptance and avoidance of conflict. Also, there were also mismatches on what is spoken or preached. Therefore, clarifying who one is becomes essential in building ethical environments. The necessity for organizational and structural innovation and change is axiomatic in improving workplace ethics. The group mentions various processes which will instill systems to curb unethical acts such as a “one-stop-shop facility” and developing “the proper mindset of leaders.” Some innovative changes though may occur out of the limits and control of the group.

Ethical Leadership within the Organization

The study indicated that leaders must be the first to exemplify these ethical behaviors so they can be imbued and mimicked by the subordinates. “Transparency, professionalism” are virtues needed to be instilled in the leaders so that the organization “lives, behaves and makes decisions ethically.” All of these actions must be aligned to systems and structures to that, following the McKinsey principles, support is created to sustain the momentum of organizational change. Changes must be aligned with the vision and mission statements, and with ethical goals that the organization prescribed to itself. The organization must “manage itself towards the attainment and materialization of its dreams... in keeping with its vision and mission,” and activities and actions must be directed to ethical measures to allow the proliferation of morally correct actions in the institution.

The Role of Cultural Ethics Building

The participants explained that culture “affects how much each person reacts” to the environment. As such, Filipino values such as “kanya-kanya” [selfish or being excessively individualistic] and “hiya” [being shy] and even the “subculture of silence” are detrimental to the development of ethical workplaces. As such these actions that tend to “sweep things under the rug” create a feign atmosphere of acceptance to unethical undertakings in the organization, and thwarting them tend to be difficult.

Creating and Sustaining an Ethical System within the Organization

Institutions have processes that promote and promulgate ethical systems. In terms of the organizational strength in its existing ethics programs, three superordinate themes appeared: 1) existing foundational ethics and formation processes; 2) trait attributes of members, and 3) the institutionalized high ethical standards. The research acknowledged that there were existing ethics programs within the organizations. The presence of existing foundational ethics and formation processes were inculcated into the structures of the organization; there were “courses dealing with ethics” including “value formation” and “spiritual programs. “Also, the members themselves have attributes that promote ethics within the organization, demonstrating that individuals were aware of the presence of ethical systems in the workplace and were promoting it. People “listen to feedback,” were given the opportunity to “express themselves openly” and “go beyond what they are expected to do” just to show work ethic.

The research acknowledged that high ethical standards were institutionalized within the workplace itself, either by mandate of position “as government servants, we are guided by government standards” or rootedness of the principles (e.g., “Ignatian spirituality as anchor”). These serve as firm nadirs of where and how the organization can proffer ethical means. On the flip side, there are ascertained organizational weaknesses inherent in the existing ethics program of the organizations dealt with. These superordinate themes include: 1) lack of development and formation programs, 2) lack of personal clarity and an internal need for organizational, and 3) structural innovation and change. Though in some of the group’s organizations there were structures fostering ethics, in some other organizations there were needs “to see beyond its organizational needs and focus on” people development. These

maybe considered especially in regards to alignment of "one's values and priorities" with that of the organization's. The interviewees cited three superordinate themes that may be considered as key components an organizational ethics program should have. These are: 1) value or conscience formation of organizational members; 2) leaders acting as model of ethical behavior, and 3) the alignment of systems and structures. Conscience formation includes not only developing the "Christian conscience" but more in-depth, a "sensitivity to uphold what is right." This may include virtues of "justice and love" and a preferential option for the poor. Also, a level of "accountability, responsibility and honor" is vital to eliminate "vices that destroy an organization." By allowing formation to occur within the organization, core ethical principles will be set in place, or be further improved.

CONCLUSION

In conclusion, the review provided an overview of the importance of understanding the dynamics affecting the development of a sustainable principled workplace culture. The use of qualitative research, specifically thematic analysis described four important components that were viewed to be central by organizational leaders from the academe, religious congregation, public and private sectors. These were: 1) understanding the antecedents of unethical behavior within the organization; 2) the need for ethical individuality; 3) the need for ethical leadership; and 4) understanding the role of culture in building an ethical culture. Understanding the precursors of unethical practices within the organization is imperative because it impede the company's ability to achieve strategic goals. The development of principled workplace culture begins with the identification of common disciplinary problems that exists within the company, and infraction incidents in the organization's existing ethics program. Tantamount to the identification of the antecedents of unethical behavior within the organization is moral development and the need for ethical leadership. The need to develop one's ethical philosophy is the process of building one's ethical individuality while the non-stop call for the virtues of transparency and professionalism in the workplace connotes the need for ethical leadership. Culture was found to be affecting how much each person within the organization reacts to environment. Hence, the norms established by the organizational leaders within the company dictates the success of any ethical program deployed for strict compliance and guidance of the employees. A principled workplace culture was identified to be directly and indirectly contributing to the drive and performance of the company which in turn affects organizational performance as a whole. Ethical vigilance was identified to be the key to the sustainability of a principled workplace culture. This requires collective efforts from the people within the organization in policing and not tolerating unethical practices recognized within the organization.

DIRECTIONS FOR FUTURE RESEARCH

Directions for future research may include testing the cogency of the qualitative model developed through thematic analysis using quantitative techniques and testing the effect of adding participants from other sectors such as military, medicine, arts, agriculture, and food and drugs. It will be interesting to identify best practices of establishing an ethical culture in these industries. In the quantitative study, among the variables that may be taken into

consideration can be culture, religion, and generational cohorts. On the firsthand, although culture was identified to be a factor that predict a sustainable principled workplace, it is important to note that respondents of the study were coming from one country of origin. Although some of the participants’ experiences may include managing some multi-national organizations, the themes collected from the thematic analysis can be highly influenced by the Southeast Asian culture. The western context may bring a different understanding on how a principled workplace culture can be developed and sustained. On the secondhand, although the research included representatives from religious congregation the study failed to consider opinion from other religious groups. Lastly, in terms of generational cohorts, the participants involved in study may not be the true representation of the existing workforce that we have right now. It will be interesting to identify the themes that may be collected from millennials which is the largest working group to date.

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APPENDIX I

Thematic Analysis: Building an Ethical Culture in Organizations

Major themes	Sub-themes	Sample quotes
1. Ethical Problems in the Workplace	1.1 Organizational Politics	"This game of playing nice to the boss focuses on social expectations and acceptance (Zimbardo and Weber, 1997)."
	1.2 Disciplinary Problems	"...lying, theft, immoral conduct."
	1.3 Counter-productive Behaviors a) Intrapersonal	"...they use their 'free' time in the office either going online to engage in social networking or doing things that are not related to their work. This is a problem because there are papers and reports to accomplish and submit."
	b) Interpersonal	"...practices which creates low morale, job dissatisfaction brought about by the leader's favoritism, patronage style of leading the organization." "...inappropriate use of one's judgment such as premarital pregnancies, leakage of evaluation materials, maligning the name of a colleague, inappropriate dealings with parents."
	1.4 Unfair Policy	"...engagement into open-admission and selective retention policy. The institution offers large discounts for entering freshmen that easily attracts...great number of these students drops out of school during the second semester because majority was not able to meet the overrated

	<p>1.5 Systematic Corruption</p>	<p>qualifications to sustain the scholarship. Scholarship discounts are only provided to engineering students.”</p> <p>“I immediately noticed that there was only one (1) named supplier and the list of equipment had no corresponding breakdown and total cost. I recalled that a public bidding was required by law especially for amounts in excess of half a million pesos (GAAM, 1992, pp. 253-258). He smiled and whispered “Sir, <i>mayroon ka dito.</i>” [you have a part in this]</p> <p>“Sir, instead of bidding, why don’t we just have a negotiated purchase since a Rizal bust would only cost less than Php500,000 each and just have several repeat purchases?”</p> <p>“Sir, you will receive a 10% commission in cash for each Rizal bust that you will order.”</p>
<p>2. Organizational Strengths of the Existing Ethics Program</p>	<p>2.1 Existing Foundational Ethics and Formation Processes</p>	<p>“...is strong in its goal-setting processes and is very much task-oriented.”</p> <p>“There are courses dealing with ethics.”</p> <p>“...long history of engagement in value formation.”</p> <p>“...has a specific office to handle and focus on the ethics/spiritual program.”</p> <p>“...deliberated and systematic infusion of ethical culture in the</p>

		<p>“There are Filipino values like <i>hiya</i> [being shy]. Christian values are not inherent. Behavior is tolerated as long as it is not caught. Also, the subculture of silence. No one likes to be a snitch or the one to squeal undesired behavior.”</p> <p>“Filipinos do not want to rock the boat. Filipinos tend to sweep things under the rug. Filipinos are afraid to directly address problems in the hope of saving the face of the person concerned to the detriment of the group or the improvement/betterment of the group.”</p>
<p>5. Key Components Organizational Ethics Program Should Have</p>	<p>5.1 Value/Conscience Formation of Organizational Members</p>	<p>“There are stages: human conscience, Christian conscience, priestly conscience. It is not only the knowledge of what is right and wrong but a greater sensitivity to uphold what is right, most especially in upholding the rights of the defenseless.”</p> <p>“Development of the Gospel values in the person: Justice, Peace, Love with a preference for the poor and done in the spirit of joy.”</p> <p>“There is a prophetic role: when there is injustice, when the poor need a voice to defend them, the priest should not be a coward but should open his mouth, be brave and say courageously what needs to be said for goodness’ sake, for god’s sake, in God’s name.</p> <p>“We should continuously educate people of values that</p>

HIGHER EDUCATION OF YEMEN: HISTORY, DEVELOPMENT AND CURRENT STATUS

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ABSTRACT

Higher education is new in Yemen compared to advanced countries, where began the establishment of Sana'a University in 1970 and Aden University in 1975. On this paper, researcher embarked on a review study related to the history and development of Higher Education in Yemen. This paper heavily depends on the literature exploration as a secondary source of data collection, while the primary data collection was relying on the information gained throughout the interview with the top management of the higher education of Yemen. The findings show the current status of Yemen Higher Education and the current roles of its institutions that have been evaluated based on the experts' opinions.

Keywords: Higher education, Yemen, History, Development, Current status

INTRODUCTION

At present, knowledge has become a basic component of economic and social development (Salmi, 2015). Therefore, many governments' leaders and associations are talking about this secret wealth. According to Norwegian Prime Minister, "Knowledge is the key to a future after the oil age" (Erna Solberge, 2014), and according to the National Governance Association (2001), "the driving force behind the 21st century economy is knowledge, and developing human capital is the best way to ensure prosperity". As a result, and for a sustainable economic growth and enhanced living standards, the ability of a society to create, choose, adapt, commercialize, and use knowledge is critically required (World Bank, 2002).

In this context, higher education is an important form of investment in human capital development and in fact it is rightly regarded as the “engine of development in the new world economy” (Ceyda ÖZSOY,2008). Higher education could be the corner stone in development where the workforce is trained to lead the social, economic, political and culture changes (Abedalhakeem T.E Issa & Ahmed Gumaa, 2012). Higher education institutions (HEIs) are places where young people are trained, gaining knowledge and skills. Thus, it is essential to investigate the current status of Higher education of Yemen to get clear view of its situation. Hence the aim of this work is to study the higher education in term of its history and development as well as the current status. In addition, the roles of the institutions of Yemen higher education are evaluated based on the experts’ opinions.

Beside this introduction, this paper is structured to five sections: literature review, methodology, findings along with discussion, and conclusion. In Section 2, literature review is presented by highlighting the related work to Yemen higher education. The methodology that is used to conduct this study is explained in section3. Whereas, the outcome of this study is presented precisely in section 4 (finding and discussion). Lastly, the conclusion of this work is given in the section 5.

LITERATURE REVIEW

Glance of Yemen

Yemen is one of the developing countries which is located in the Southern part of the Arabian Peninsula. It is bordered by Saudi Arabia to the north and by the Red Sea to the west and Oman to the east. The total area of the Republic of Yemen is about 555,000 square kilometers, with a population of 22 million people of whom over 40% live in poverty. Average gross domestic product (GDP) per capita is about USD 930 and Yemen was ranked 153 out of 177 countries in the 2007 Human Development Index and is by a considerable margin the poorest country in the Middle East and North Africa region (Elsa Duret,2010). The official language of the country is Arabic and Islam is the official religion of the country.

Higher Education in Yemen

Higher education is new in Yemen compared to advanced countries, which began with the establishment of Sana'a University in 1970 and Aden University in 1975 (Jamil Ahmed, 2007). In 1990, Ministry of Higher Education and Scientific Research (MoHESR) was crafted and the universities were under its responsibilities until was eliminated in 1994 and then re-established in 2001 (National Strategy ,2005).

Community colleges were under the MoHESR until 2004 but then their responsibilities were transferred to Ministry of Technical and Vocational Education (MTVE). Ministry of Finance is controlling the budget over the MoHESR and it is the unit which decides on the amount to be paid to individual universities (National Strategy ,2005). Moreover, MoHESR is a supreme council of

universities led by the Prime Minister and consist of 8 other ministers, such as (MoHESR, Finance, planning, Civil Service, Education, MTVE, Social Affairs).

In terms of autonomy, Yemeni universities are considered wholly independent by article 3 of the university law which clearly states "Public universities are administratively, financially and academically independent" (National Strategy ,2005). But somehow, the Ministry of Finance is heavily constrained and appoints employees in each university finance department to ensure that they have prior permission from Ministry of Finance (Elsa Duret, 2010). As a result, if the university have not spent the budget by the year-end, they cannot carry it forward to the next year, and this can be considered as a serious issue. In 2002, the World Bank made a study survey and discovered that of YR 258 million allocated for acquisition of new books in 1998, not more than 40 per cent was used and the rest was returned to Ministry of Finance (World Bank, 2002).

In terms of structure, today, there are nine public universities and eighteen private universities, for a total of 27 universities including 179 colleges. (Yemen information center,2010). In light of this, the number of students enrolled with the governmental and private universities increased from 35,000 students in 1990 to 266,096 students in 2010. The percentage of females in higher education increased from 16% in 1990 to 30% in 2010. In private universities, the contribution of enrolling students increased from 0% approximately in 1993 to 23.5% from the total enrolled with tertiary education in 2009/2010. At the same time, the number of students enrolled in public tertiary education for the same year reached 203497 students and in the private universities about 62599 students (Indicator and data of education, 2008).

On the other hand, outcomes or the graduates are an important process where the total number of graduates from public universities in 2009/2010 reached 22,454 students, while the graduates students from private universities numbered about 5877 (Indicator and data of education, 2008). The following Table 1 shows the number of students graduates from public and private universities from 2004 to 2010.

Table 1: Number of graduate students of tertiary education 2004-2010

Number of graduate students	Year						
	2004	2005	2006	2007	2008	2009	2010
Public universities	23329	25087	23357	22794	20383	23318	22454
Private universities	1783	2034	—	3710	5373	5685	5877

Source: Indicator and Data of Education, Yemen Information Center (2008)

As shown in the above paragraphs, the numbers of enrolment and numbers of graduate students are growing from year to year. As a result, government gives special attention and spends funding on higher education.

The expenditure on education grew from 5.1 % of GDP in 1996 to 6.8 % in 2004 and this is considered high compared to most Arab and lower-income countries (National Strategy, 2005). Table 2 shows the percentage growth of spending from 1991 to 2006. Table 2 above shows that the GDP share for spending on education rose from a combined total of 5.5 % of GDP in 1991 to

7.7 % by 2006, with their share in total government expenditure showing a minor increase from 18.7 percent in 1991 to 19.8 % by 2006.

On the human resource side, Yemeni universities employed nearly 6630 teaching staff in the public universities in 2010, including 620 international staff. A total of 271 are holding postdoctoral degree, 720 as Associate Professors, 2,306 assistant professors and 784 teachers. The number of teaching staff in the private universities in 2008-2009 reached 1881 teachers, including 1734 Yemeni teachers, and the number of female teaching staff reached 193 Members, or 10.26% of the total teaching staff (Yemen National Information center, 2015).

Table 2: Main government spending items, 1991-2006 (Percent of Spending and of GDP)

	Year					
	1991	1994	1997	2000	2003	2006
Defense	23.3	39.0	18.2	16.8	18.2	14.1
Health	3.7	4.1	3.3	4.1	4.0	4.3
Education	15.0	21.6	15.2	18.0	17.0	15.5
Subsides	6.4	10.1	29.3	28.7	14.6	26.8
As share of GDP						
Health	1.1	1.2	1.2	1.4	1.4	1.7
Education	4.4	6.1	5.3	5.9	6.1	6.1

Source: United Nations Department for Social and Economic Affairs (2011)

In term of quality, until 2008 Yemen universities did not have a national quality assurance process (National Strategy, 2005). The absence of quality assurance resulted in giving the freedom to the private universities without evaluation. Mahyub, (2009), argued in his paper that, there are no formal mechanisms for quality assurance and accreditation processes have been fully developed within higher education institutions in Yemen.

Therefore, the Yemen government began to establish the quality assurance and accreditation unit in higher education and in Sept 2009, a Presidential Decree (Decree Number 210 for the year 2009) was issued to create Council named "The Council for Quality Assurance and Accreditation in Higher Education." (Abdullateef Hussain Hiadar, 2009).

The research culture within the universities is relatively weak or not well activated and still underdeveloped, with an absence of facilities such as laboratories, libraries, journal and technical staff (National Strategy, 2005). A look at the annual ranking of the Global Innovation Index (GII) shows that the Yemen ranking is 0. The following Figure 1 shows the ranking of Yemen in terms of Research and Development (R&D) (The Global Innovation Index, 2015).

As a particular issue related to this, the postgraduate students is very small where the number of postgraduate students was about 1500 in year 2005 in whole country and 2665 in the year 2008 (Indicator and data of education, 2008).

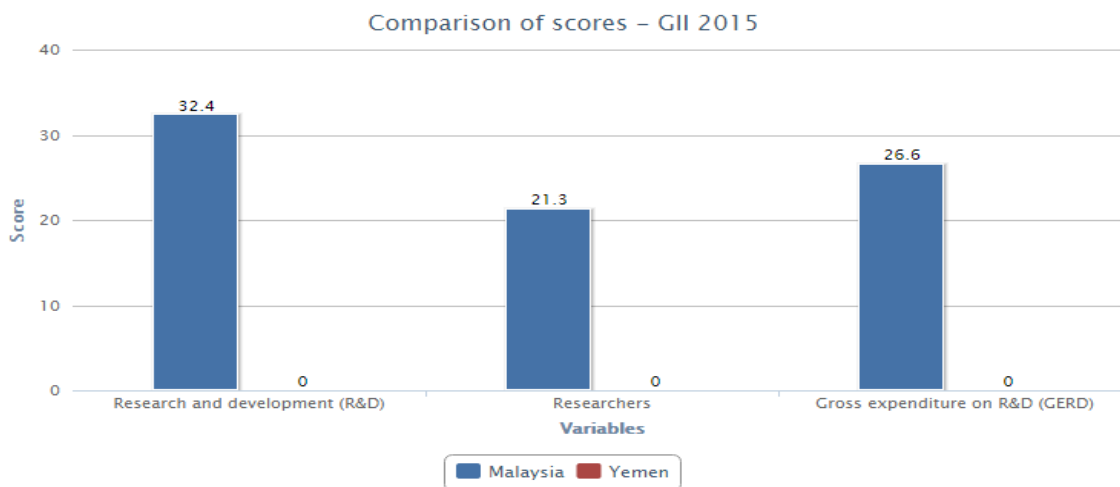


Figure 1: Yemen score in GII in terms of R&D

RESEARCH METHODOLOGY

The data collection method used for this paper is qualitative method. The qualitative method was presented by the structured interview where the data were gathered throughout it. Those who have been formally interviewed are from top management of higher education and expert people in education and higher education in Yemen. Table 3 presents the participated experts in the interview, their positions, years of experience, and the way they were interviewed. There were four expert people from the top management of education and higher education of Yemen. We have been contacted usually via face to face and phones. To guide the interview discussion, we used a set of open- ended questions, related to higher education of Yemen. Therefore, open-ended questions method allows the respondents to discuss more issues that are important related to the research.

Table 3: Demography of interviewed people

Position level	Years' of experience	Interview method
Minister of Higher Education 2006-2011	35 Years	Face to face
Minister Higher Education 2014-2016	40 Years	Face to face
Deputy Minister Higher Education 2001-2015		
Minister of education 2003-2007	20 Years	Phone
Dean of Postgraduate Studies –university RHODE Island and consultant to Deputy Minister Higher education Yemen	20 Years	Phone

RESULT AND DISCUSSION

Based on the conducted literature review exploration and the interview with experts, there are two major findings of this review. The current image of the higher education in Yemen is identified and the evaluation of HIEs' role is obtained with percentage for each role. The identified current image of the higher education in Yemen is presented as follows:

1. The current situation and as a result of the earlier stages can be represented by the total number of male and female enrolled in the public and private universities. The increase of the enrolment students did not cope with teaching staff development where the ratio of the staff: students were 1:20 in 1990 and the ratio now is 1:50.
2. The development that happened in the students' enrollment was not associated with a quality development in a number and type of teaching staff as well as limited expanding in buildings, study halls, laboratories, libraries, requirements of Information Technology and the electronic library.
3. The majority of student's enrolment is in humanities and social sciences that represented by 86%, and only 14% study in the science and technology.
4. Enrolment of female students represents only 26% which raises the issue of equity.
5. The percentage of postgraduate students does not exceed 2% from the total number of students in the higher education institutions.
6. Weak governance in the higher education institutions and lack of leadership which have a future vision in how HEIs should be in the future.
7. Shortage in financial resources and bad usage for the available resources. The funds from the government and the tuition fees as well are consumed as operating expenses under many weak excuses.

In addition, a percentage for the four well-known roles of HEIs is given to Yemen HIEs by the experts. Table 4 shows the role evaluation of the HIEs in Yemen and its percentage.

Table 4: Percentage for the roles of Yemen universities

No	Universities Roles	Yemen universities	Percentage
1	Teaching and learning	Perform good	90%
2	Scientific research	Still limited	40%
3	Serving the society	Still limited	20%
4	Predict the future	Very absent	0%

CONCLUSION AND RECOMMENDATIONS

This paper aimed to study the Yemen higher education in term of highlighting the history and development and identifying the current status with role of its institutes. Literature exploration and interview methods are used as research instruments and method for data collection purpose. The related work to higher education were collected by conducting the literature exploration, while the interview with four experts have been performed to qualify the findings that have extracted from

literature exploration. The current status of Yemen Higher Education and its institutes are the findings of this work. The current status has indicated several issues such as student enrolments, teaching staff, ratio of teaching staff to students, weak governance of HIEs, shortage of financial resources, percentage of postgraduate students and the percentage of the role of HIEs as well as the number of public and private institutes.

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CONSIDERING UNVIERSITY GOVERNANCE: A PRELIMINARY INVESTIGATION OF EMPLOYEE ENGAGEMENT IN HIGHER EDUCATIONNAL INSTITUTIONS IN MALAYSIA

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ABSTRACT

Effective university governance provides a good framework of organizational practices to engage academic staff. The critical resource for building global competitiveness of university. This study, considering the university governance, is aimed to evaluate the levels of employee engagement in universities. A preliminary investigation was carried out using questionnaire survey. 160 randomly selected academic staff from one public university and one private university participated the survey. Statistics results show that levels of employee engagement from both universities are high. Moreover, the academic staff from the private university are more engaged comparing with the public university. Hence, it proposes a worthy question for further exploration: is the governance of private university better than that of public university?

Keywords: Employee engagement, Malaysia, Higher educational institutions, University governance

INTRODUCTION

Higher education plays important roles in enhancing national development and developing knowledgeable individuals. Due to a range of external forces (i.e. markets, virtualization, competition), it is undergoing transformations giving rise to new ways of understanding the functions and governance of university. University governance refers to the structure and process of authoritative decision making across issues that are significant for external as well as internal stakeholders within a university (Gayle, Tewarie, & White, 2011). There is no doubt that academicians are the critical resources involved.

According to Nkogbu and Offia (2015), effective system of governance provides the framework for organizational practices which to a great extent contributes to the level of employee engagement. Employee engagement is the positive attitude held by employees towards their organization, their colleagues and their work conditions. Thus, for employee

engagement to occur, academicians should be engaged effectively through the provision of good governance by university. And having engaged employees brings real benefits to the performance of organizations (Saks, 2006; Simpson, 2009; Gruman & Saks, 2011). According to Gallup study which studied engagement at more than 125 organizations, organizations that invest in engaging employees can stand to grow their earning 2.6 times faster than those who do not (Fleming, 2009). Inversely, those with low employee engagement levels experienced more than 32 percent decrease in operating income and 11 percent decline in earnings per share growth (Maniam & Samuel, 2015).

Hence, this study considering the governance of university, aims to access the levels of employee engagement among academic staff in higher educational institutions in Malaysia and the preliminary investigation was carried out in one private university and one public university. Section 2 further elaborates the definition of employee engagement. Details of survey investigation are provided in Section 3 with respondent's profile presented. Section 4 analyses the statistics results with conclusions drawn upon in Section 5.

EMPLOYEE ENGAGEMENT

Organizations that struggle to survive these difficult time must seek to understand how to effectively engage their most valuable asset, employees, to ensure lasting business continuity (Naicker, 2013). Kahn (1990) introduced employee engagement that is “ the harnessing of organization members’ selves to their work roles where employees express themselves physically, cognitively and emotionally during role performances”. Baumruk (2004) defined employee engagement as employees’ emotionally and intellectual commitment to the organization or the discretionary effort employees provide above and beyond what is required by employees in their job. Gatenby, Rees, Soane and Truss (2008) argued that engagement as the ability of creating opportunities for employees to contact with their colleagues, managers and wider organization; and also about creating an environment where employees are motivated to connect with their work and really care about doing a good job since it makes employees feel they are a part of the organization.

In short, employee engagement consists of two different but interrelated elements (Heintzman & Marson, 2005). They are employee commitment and employee job satisfaction. Employee commitment is the pride people who feel for their organization; and the degree that they intend to stay with the organization and they desire to perform at high levels, as well as they strive to improve the organizations’ performance (Peters, 2007). Employee job satisfaction is the level of contentment an employee assigns to attributes of their jobs. Naicker (2013) further stratified employee engagement into three intertwined dimensions which are emotional, behavioral and cognitive. The emotional aspect relates to how employees feel about their organization; behavioral dimension refers to actual energies employed by individuals during their role performance; cognitive element deals with how is the employees belief about their organization, for example, do employees’ believe and follow their organization’s goals? The survey investigation of the study is following the three dimensions as stated above.

SURVEY INVESTIGATION

A questionnaire survey was designed consisting of two sections. Section A includes demographic information and section B covers questions on employee engagement. Each question uses five-point Likert Scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The survey questionnaire was randomly distributed to academic staff in one public university (A) and one private university (B) in Malaysia. In total, 160 respondents participated in the survey among which 80 were from the public university A and 80 were from the private university B.

The demographics of respondents are provided from Table 1 to Table 4 in terms of gender, age, faculty, designation, level of education and years of academic experience as well as years of working in the current university. It indicates that, in both universities, majority of respondents are aged between 25 to 44, and most of them are senior lecturer and at PhD level, as well as almost all of participated academic staff have more than 10 years academic experiences and they have worker more than 2 years in their current university.

Table 1 shows that the respondents in the public university A are almost equal in male (53.8%) and female (46.3%) respondents, while in the private university B male respondents (70.0 %) are greater than female respondents (30.0 %). Moreover, the majority of respondents from both universities are between the age 25 to 44.

Table 1 : Gender and age of respondents

Gender	Public university A		Private university B	
	Frequency	Percent	Frequency	Percent
Male	43	53.8	56	70.0
Female	37	46.3	24	30.0
Total	80	100.0	80	100.0
Age				
25-34years	30	37.5	20	25.0
35-44years	37	46.3	28	35.0
45-54years	8	10.0	16	20.0
55-64years	5	6.3	16	20.0
Total	80	100.0	80	100.0

Table 2 demonstrates that the respondents are selected from 10 faculties of the public university A and 9 faculties of the private university B. Furthermore, the generalization is not applicable for non-academic staff in universities.

Table 2: Faculty of respondents

Public university A			Private university B		
Faculty	Frequency	Percent	Faculty	Frequency	Percent
fkksa	11	13.8	ChE	12	15.0
fkasa	6	7.5	CiE	8	10.0
fskkp	9	11.3	ME	11	13.8
fkee	8	10.0	E&EE	9	11.3
fist	11	13.8	PE	10	12.5
fkp	6	7.5	GE	6	7.5
fkm	9	11.3	F&AS	6	7.5
ftek	6	7.5	M&H	8	10.0
fim	5	6.3	C&IS	10	12.5
cmlhs	9	11.3			
Total	80	100.0	Total	80	100.0

Table 3 presents that, in both the public university A and the private university B, the most of the respondents are at PhD level and are senior lecturer.

Table 3: Respondents' education and designation level

Level of education	Public university A		Private university B	
	Frequency	Percent	Frequency	Percent
Bachelor Degree	0	0.0	6	7.5
Master's Degree	30	37.5	15	18.8
PhD	50	62.5	59	73.8
Total	80	100.0	80	100.0
Designation				
Tutor	1	1.3	0	0.0
Lecturer	30	37.5	13	16.3
Senior Lecturer	45	56.3	34	42.5
Associate Professor	2	2.5	27	33.8
Others	2	2.5	6	7.5
Total	80	100.0	80	100.0

Table 4 shows that most of the respondents in the public university A have less than 5 years of academic experience, while the majority of respondents in the private university B have more than 10 years of academic experience. Furthermore, the most of respondents in both universities have worked more than 2 years in their current university.

Table 4: Years of academic experience and working years in current university

Years of Academic Experience	Public university A		Private university B	
	Frequency	Percent	Frequency	Percent
1 - < 5 years	30	37.5	17	21.3
5 - < 10 years	22	27.5	29	36.3
≥ 10 years	28	35.0	34	42.5
Total	80	100.0	80	100.0
Years of working in the current university				
< 2 year	15	18.8	6	7.5
2 - < 5 years	19	23.8	26	32.5
5 - < 10 years	24	30.0	23	28.8
≥ 10 years	22	27.5	25	31.3
Total	80	100.0	80	100.0

RESULTS ANALYSIS

Data Reliability & Validity

Reliability test was conducted to estimate the internal consistency of research instrument. As shown in Table 5, Cronbach's alpha of 0.904 indicates that the measuring items of employee engagement provide a reliable measure of internal consistency, as the reliability measures exceed the minimum value of 0.6 (Sekaran & Bougie, 2010).

Table 5 : Reliability statistics

Cronbach's Alpha	Cronbach's alpha based on Standardized Items	N of Items
.904	.904	12

Confirmatory factor analysis was performed with a principle component analysis as the extraction method conducting Varimax with Kaiser Normalization Rotation method to explain the items' variance. In addition, varimax rotation is used to see how groupings of items measure the same concept. The following criteria were used for extracting factors: factors with an eigenvalue greater than one (Nunnally, 1978); each factor retained will explain at least 10% of the variance (Suhr & Shay, 2009); the items with Varimax value less than 0.4 should be dropped for analysis (Hair, Anderson, Tatham & Black, 1998). Table 6 indicates that the appropriateness of factor analysis was supported by both Bartlett's test of sphericity, Chi-square = 1036.456, p-value < 0.000, and the measure of sampling adequacy by Kaiser-Meyer-Olkin (KMO) of 0.855, which is exceed the recommended value of 0.6 (Kaiser, 1974).

Table 6: KMO and bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	1036.456
	df	66
	Sig.	.000

There are three different components extracted, where component 1 gets 5.866, component 2 gets 1.243 and component 3 gets 1.110. And the total variance explained by the 3 components is 68.489. As shown in Table 7, item 1, 2, 3, 4 fall under component 1, which is called affective dimension. Item 4, 5, 6, 7 fall under component 2, which is named behavioural dimension. And item 8, 9, 10, 11, 12 fall under component 3, which is defined as cognitive dimension.

Table 7 : Rotated component matrix^a

	Component		
	1	2	3
1. I feel confident that I can meet my goals.	.782		
2. I am excited about how my work matters to my team.	.732		
3. I am excited about how my work matters to my organization.	.805		
4. I am happy to take on new responsibilities as the need arises.	.631		
5. I look for ways to improve the way I work.		.702	
6. I work to ensure that I assist in meeting my organization's objectives.		.674	
7. I look for ways to reduce costs.		.645	
8. I work to maintain my focus on being more efficient.		.617	
9. I recognize the link between what I do and organizational objectives.			.732
10. I understand how my efforts are contributing to meeting the organization's objectives.			.765
11. I have a good idea of what the organization is trying to accomplish.			.704
12. I understand how my work impacts service delivery of my organization.			.786

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Therefore, it further confirmed that employee engagement has three dimensions which are affective dimension (including item 1, 2, 3, and 4), behavioural dimension (including item 5, 6, 7, and 8) and cognitive dimension (including item 9, 10, 11, and 12).

Levels of Employee Engagement

One sample t-test is used to compare the sample mean with a known mean value of 4, which is the 'agree' level. Table 8 shows that mean values of employee engagement in both the public university A and the private university B are significantly greater than 4, which means the levels of employee engagement of both universities are towards 'strongly agree' level. Furthermore, the mean value (4.24) of employee engagement of private university B higher than the mean value (4.12) of employee engagement of public university A. It seems the

academic staff from the private university B are more engaged compared with the academic staff from the public university A.

Table 8 : One sample statistics of employee engagement (test value=4)

Variable	N		Mean		Test Value		Sig. (2-tailed)		Std. Deviation		Std. Error Mean	
	A	B	A	B	A	B	A	B	A	B	A	B
EE	80	80	4.12	4.24	4	4	.020	.000	.466	.460	.052	.051

To confirm which university has higher employee engagement, the mean value of employee engagement for the public university A respondents is set as the test value to run one-sample test in SPSS. As shown in Table 9, the mean value of employee engagement (Sig. = 0.026) between the public university A and the private university B are significantly different at the level of 0.05 (2-tailed). Hence, it further proves that the academic staff from the private university B are more engaged compared with the academic staff from the public university A.

Table 9 : Comparison of levels of employee engagement between the public university a and the private university B

Variable	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Test value
					Lower	Upper	
EE	2.265	79	.026	.116	.01	.22	4.12

Table 10 shows the levels of employee engagement in three dimensions: affective, behavioural and cognitive among academic staff. It indicates that the public university A have higher level of the behavioural engagement, and followed by the cognitive engagement and then affective engagement. Additionally, the private university B have higher level of behavioural engagement, and followed by the affective engagement and cognitive engagement.

Table 10 : One-sample statistics of employee engagement in three dimensions (test value=4)

	N		Mean		Test Value		Sig. (2-tailed)		Std. Deviation		Std. Error Mean	
	A	B	A	B	A	B	A	B	A	B	A	B
Affective	80	80	4.0344	4.2406	4	4	.591	.001	.56918	.61036	.06364	.06824
Behavioural	80	80	4.2094	4.2750	4	4	.000	.000	.46634	.44580	.05214	.04984
Cognitive	80	80	4.1281	4.1938	4	4	.055	.002	.58730	.55401	.06566	.06194

To compare level of behavioural engagement in both universities, table 11 indicates the academic staff in both universities have similar level of behavioural engagement.

Table 11 : Comparison of levels of behavioural engagement between the public university A and the private university B

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		Test Value
					Lower	Upper	
Behavioural	1.316	79	.192	.06560	-.0336	.1648	4.2094

CONCLUSION

To conclude, the academic staff in the participated private university B are more engaged comparing with the public university A. Why? The potential reasons could be related to the determinants of employee engagement, such as supportive work environment, organization's leadership, recognition, compensation, etc. And all these are actually under the coverage of university's governance system as the governance system works as kind of organizational policies within an organization which is critical determinant of employee engagement. Hence, it indicates another interesting question to further explore: is the governance of private university better than that of public university? As the study is limited to only two universities, future research is recommended to enlarge the scope of study by including more universities in Malaysia.

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FORMING TRANSFORMATIONAL LEADERSHIP STYLE AND AFFECTIVE COMMITMENT TO SERVICE QUALITY AT MALAYSIAN PRIVATE UNIVERSITIES: THE MEDIATING ROLE OF LEADERSHIP COMMUNICATION

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ABSTRACT

The rapid growths of private higher education institutions (HEI) in the country and increased competition among these institutions have changed the landscape of the industry. These institutions are paying more attention to the issues of providing excellent quality service in order to attract qualified students and achieve a high academic profile which is the benchmark for competitive advantage among them. However, the issue of affective commitment towards service quality among frontlines staff at the private universities in Malaysia gives less attention, especially in terms of student assessment towards the service they received from the staff. The sequence to that, few universities in Malaysia have lost students due to the level of the service quality that did not reach their expectations. Therefore, several factors need to be examined for a relationship that can be

associated with affective commitment among administrative staff at the private universities such as transformational leadership and leadership communication. Thus, this study investigated the relationships between Transformational leadership styles and affective commitment towards service quality among private universities in Malaysia. The study also aimed to determine if leadership communication mediates the relationships between transformational leadership styles and affective commitment towards service quality. The quantitative survey method using a structured questionnaire was used to collect data, and the administrative staff of private universities in the Klang Valley was selected as samples for the study. A total of 1,825 questionnaires was distributed and 310 were returned, giving a response rate of 17 percent. The findings indicated that significant relationships exist between transformational leadership style and affective commitment towards service quality. Leadership communication was also found to partially mediate the relationships between transformational leadership style and affective commitment towards service quality. The study concluded with a discussion of the theoretical and managerial implications as well as suggestions for future research.

Keywords: Private higher education institutions, Affective commitment to service quality, Leadership communication, Transformational leadership style

INTRODUCTION

In facing the global economic phenomena that will increase competition among providers as well as the rapid growth of Higher Education Institutes (HEIs) in Malaysia will give great impact to all HEIs providers. Therefore, HEIs should explore ways and methods continued to be existed and survived in an environment of sustainable economic turmoil to achieve a competitive advantage compared with their competitors. In conjunction with the 21st century, which will be known as 'the quality' (Juran, 1992) that will be encountered all learning providers across the world, so it is a must to ensure HEIs staff to give affective commitment to service quality for the future of their institutions. As stated by Hudson, Hudson and Miller (2004), the only way to maintain the existence in this environment is to provide excellent quality of service. They said that the outstanding performance of service quality is one of the key factors in building a niche market and competitiveness that separates one from its competitors.

These findings are also supported by Sahney, Banwet and Karunes (2004), Green (2014), and Ahmed and Masud (2014) when they said that the increasing competition among HEIs, forced them to pay more attention to the issues of service quality. Therefore, it is very important for universities worldwide to give affective commitment to service quality by encouraging their staff to be committed to providing quality service to customers, which would be a key strategy to improve competitiveness in educational institutions.

There are 656 of HEIs in Malaysia, which consists of 513 private universities and 143 public institutions (Kementerian Pendidikan Tinggi, 2014). These institutions not only compete with each other in order to attract local students and international opportunities to study at their universities, but they are also competing in the international arena with neighboring countries such as Singapore, Australia, Thailand, Indonesia and India. Therefore, the HEIs in Malaysia

should be aware that global competition is increasing among HEIs in the country and so as from abroad, have forced them to pay more attention to these issues to provide the best quality service to their customers. This statement was also supported by Green and Ramropp (2014), where competition among universities to attract qualified students to achieve high academic profiles have forced them to pay more attention to the issues of providing service quality.

Unfortunately, not much attention has been given to the issue of affective commitment towards service quality among university staff. In fact, there are those who think that a large number of students' assessment of service quality in universities in Malaysia is influenced by how they are treated by frontier staff (Hassan, Rahman & Rahman, 2008; Ismail & Abiddin, 2009). Meanwhile, previous studies also showed that the number of universities in Malaysia has lost students because of their standard of quality did not achieve students' expectation (Ahmed & Masud, 2014; Shekarchizadeh, Amran & Huam, 2011; Slethaug & Manjula, 2012; Koni, Zainal & Ibrahim, 2013). Meanwhile, the results of a study reported by Ismail and Abiddin, (2009), Jalali, Islam and Ariffin (2011), Martin and Dastane (2014), and Choon Teck and Hoi (2010) found that the level of service quality in HEIs in Malaysia is at a moderate level as seen from the perception of students in universities in Malaysia. In such circumstances, to some extent, lead to other problems that can affect the chances of attracting students either local students and foreign students to universities in Malaysia (Isahak, 2007). This will give a negative impact on the Malaysian government to attract 200,000 international students by the year 2020.

Many questions about what really drives affective commitment to service quality among administrative staff of private universities remain unanswered. However, previous studies have suggested that the mechanism of leadership is the driving factor that plays an important role in shaking the awareness of staff towards the goals and mission to be accomplished by providing an environment and resources that will encourage them to give a continuing affective commitment to the service quality (Hashim & Mahmood, 2012; Long & Thean, 2011).

There is still a less number of studies conducted to investigate the leadership style that supports the implementation of the affective commitment of staff to service quality which still requires further investigation. According to Hashim and Mahmood (2012) the role of leadership is to create an environment that can change the attitude of workers toward affective commitment to service quality. Similarly, Wallace, de Chernatony and Buil (2013) stated that the style of leadership can encourage employees to affective commitment. Therefore, it is important to examine the role of leadership to the workers who are the affective commitment factors to quality service.

Based on the above discussion, it is no doubt, the environmental landscape of global phenomenon recently requires a leader who can bring themselves, the faculty and the university developed in accordance with the change, promote innovation, encourage trust and learning, and finally bring the organization to a successful future (Bolden, Petrov & Gosling, 2008; Brown, 2001; King, 2008; ACRULET, 2007). However, less study on the specific type of leadership style that will bring an administrative staff commitment to service quality. Transformational leadership style in the context of other services has been reported as a trigger of changing staff behavior affective commitment to service quality (Clark, Hartline &

Jones, 2008). Therefore, the question of how the transformational leadership style will bring a commitment to service quality among administrative staff is beneficial to study.

Previous researchers described that leadership style is a communication procedure which leaders trying to influence his followers to achieve a common goal (Yukl 2006 & Northouse, 2010). Whereas in recent years, researchers have realized the importance of an effective leadership communication linkage with transformational leadership style in forming the committed organization. Leadership communication is the foundation of leadership and leadership behavior probably the most important (Baldoni, 2003). Therefore, without the correct and inadequate leadership communication, it will be difficult or impossible to implement the plan or mandate of the organization (Raineri, 2011). A link between leadership communication and transformational leadership style is necessary to provide important information and encourage employees to do something better. Communication will also promote a sense of belonging among employees to foster commitment and solidarity among workers (Raineri, 2011; De Varies, Bakker-Peiper, Siberg, Van Gamen & Vlug, 2009). However, there is still fuzzy support that shows a direct relationship between these variables. The question of whether the transformational leadership style and leadership communication will be directly or indirectly strengthen the administrative staff's commitment to service quality remain unanswered.

Results of previous studies have also noted that the nature of the relationship between leadership communication and affective commitment to service quality is still inconsistent (Clark et al, 2008). The views were contended by Prottas (2013), Neufeld, Wan and Fang, (2010) and West and Turner (2009) may be acceptable where they said that before a commitment can take place, workers need to understand what they should have to do and the information can only be obtained through communication (description or direction) of the leader to them and this relationship will persuade employees to act to a direction (Prottas, 2013).

Based on the above discussion, the aim of this study is to investigate the relationship between transformational leadership style and affective commitment to service quality among administrative staff at Malaysian private universities and leadership communication as a mediator. Empirical studies have concurred that perceived leadership style, leadership communication, and affective commitment to service quality directly and indirectly define the relationship between the constructs. However, from the knowledge of researchers, there is still few studies that have examined all of the constructs in a single model that combines the relationship between transformational leadership, leadership communication, and affective commitment to service quality among administrative staff, particularly in the context of private universities in Malaysia and therefore the study is worthwhile to study.

LITERATURE REVIEW

Affective Commitment to Service Quality

In the education sector, most of the literature focuses on service quality as an antecedent factor in which the result is to meet and exceed the needs of customers (Sahney et al., 2004; Douglas, Douglas & Barnes, 2006; Yeo, 2008; Kumar, Kee & Manshor, 2009). A process

and a result from delivery of quality service provided by the staff of educational institutions will affect student satisfaction. This process involved when any student, as a main service customers served by the staff of educational institutions during the interaction, and the result is that the actual results experienced by customers (Cuthbert, 1996).

Service quality in the higher education sector has attracted many researchers to develop scales and measurement tools which generally corresponds to the level of analysis and context in higher education (Koni, et al., 2013; Sultan & Wong, 2012; Jain, Sinha, & Sahney, 2011; Lee, 2010; Hassan et al., 2008; Pereda, Airey & Bennet, 2007; Peng & Samah, 2006; Petruzzellis, D'Ungento & Romanazze, 2006). Green (2014) studied the "gap" in the existing SERVQUAL instrument which led to the failure of service delivery at the University of Technology, South Africa. The findings from this study will be used to benchmark the higher education institutions in identifying effective ways to reduce operating costs and so as to reduce the service quality gap.

Mang'unyi & Govender (2014) said that the quality of services in an education sector has a significant relationship to customer satisfaction. Service quality and customer satisfaction in a private university is something that should be taken seriously in the study of management and strategic planning process. In the same way, Sahney, Banwet & Karunes (2008) also supports the above findings by claiming that the importance of internal customer commitment to deliver the quality of service because it is a key prerequisite for customer satisfaction.

However, still less research has been conducted to reveal the importance of affective commitment to service quality of administrative staff specifically in relation to private universities in Malaysia. In the same way, still a less study that tried to link the administrative staff perceptions of leadership style of their leaders and their affective commitment to the service quality at the level of individual analysis. Therefore, this study hopes to reduce the gap above shortcomings.

Leadership Communication

Leadership communication is important for leaders to engage and align employees to improve work performance and grow affective commitment to the quality of services in the education sector. According to Takala (1997), communication is a process of sharing information, ideas, or attitudes that lead to understanding between sender and receiver. Communications involving the messages conveyed by someone and accepted by others, and to communicate effectively, both of them need to be involved together (Guttman, 2008).

Effective communication is an important reason for the success of the organization, and if there is no effective communication, will cause the organization to fail (Takala, 1997). Leaders need to communicate consistently and regularly so that workers receive and understand the message and leaders who failed to communicate effectively will fail to meet the goals of the organization (Baldoni, 2003).

Leadership communication in the context of this study refers to all forms of communication from leaders to their administrative staff. It happens when leaders want to explain what they mean. This description should show the real explanation, as stated vision, faith, and their instructions and explanations that implied through their attitude and expression, in order to

confirm the effect on employees and align with employee commitment to organizational goals (Shahid & Azhar, 2013). Effective leadership communication with employees were built when the both sides have set up the responsibility of the employee to the satisfaction of their leaders and workers with a high level of satisfaction through the communication of their leaders (Shahid & Azhar, 2013).

Transformational Leadership Style

According to Burns (1978) who was the founder of transformational leadership, stressed that the leadership of this emphasizes the need of leaders to support subordinates to commit more responsibility than expected. Because of this transformation leader must be able to define, informed, and articulate the vision of the organization so that subordinates can receive and recognize the credibility of its leaders. He also noted that transformational leadership is a process in which leaders and followers working together to improve and develop the moral and motivation of each others.

A transformational leadership style is known as a charismatic leader who motivate followers and lead them to their ideals and moral values to create and represent the vision of the future inspires (Bass & Avolio, 1997; Yukl, 2006). This form of leadership involves the creation of emotional attachment between leaders and their subordinates. Transformational leaders took a real interest in the welfare of their employees. Jin (2010) suggested that transformational leadership to integrate elements of "empathy, compassion, sensitivity, relationship building, and innovation". It is developing a climate of trust, to foster employee confidence and promote the development of their individual (Men & Stacks, 2012).

A transformational leadership is seen as a key factor in the success of the organization as it concerned for team unity, organizational commitment, and high job satisfaction (Avolio & Bass, 1995). Thus, a transformation leadership is said to have a supreme, motivated, accurate value, great vision, and creatively innovate in various situations and challenges (Burns, 1978), and they also combine creative vision, tenacity, energy, intuition, and sensitivity to the needs of others (Bass & Avolio, 1993). Transformational leaders bring about changes and development in organizations. In addition, the excellent leaders often use the power and authority to motivate and inspire their followers to believe (Bratton, Dodd & Brown, 2011).

Basically, according to Bass and Avolio (2000), transformational leaders motivate followers to act in accordance with the overall needs, not because of personal interest, but through four (4) components. The four main components of transformational leadership styles proposed by Bass are; idealized influence, Inspirational motivation, Intellectual stimulation, and Individualized consideration. Table 1 presents a summary of transformational leadership style:

Table 1: Transformational leadership style model

Transformational leadership	Component
Idealized Influence	Leaders establish and demonstrate ethical, high and consistent moral and to develop and maintain a sense of trust between leaders and followers.
Inspirational motivation	Leaders create inspiration that raises motivation such as a spirit in carrying out followers' assignments.
Intellectual stimulation	Leaders create intellectual stimulation with the aim to encourage followers to be more innovative and creative, solve old problems in a new way.
Individualized consideration	Leaders give individual consideration to realize that each follower has a different and unique characteristics which impact on the difference behaviour when guidance as each individual need self-esteem and personal desires fulfillment.

Source: Bass & Avolio (2000)

Transformational Leadership Style and Affective Commitment to Service Quality

Transformational leaders are known to generate a strong spirit of affective commitment among their employees. This increases productivity and performance in the organization (Eunyoung, 2007). The vision of a transformational leader has a strong influence on their followers to change the commitments, as individually, they are allowed to participate in decision-making (Geijsel, Slegers, Leithwood & Jantzi, 2003).

Studies by Erkutlu (2008) based on a boutique hotel in Turkey, there is a strong relationship between transformational leadership style and employee commitment. Bass (1990); Christie (2002); Jabnoun and Rasasi (2005); Rowold and Heinitz (2007) and Jansen, Vera and Crossan (2009) are leadership scholars who study leadership in various organizations. They also have confirmed that there were positive effects of transformational leadership style where they found it has a profound positive effect on business and job satisfaction, which in turn create a staff commitment to the organization. This finding was also supported by Thamrin (2012), where there was a significant relationship between transformational leadership and job satisfaction and commitment among staff which has produced quality work for their organization.

Raemah (2010) study was in-lined with Thamrin (2012) findings that transformational leadership has a highly significant relationship to the commitment quality services among academic staff in universities in Malaysia. Whereas, in the different sectors, a study by Syarifah and Normala (2012) on the relationship between leadership style and effectiveness of leadership in SBK under the federal government revealed that the transformational leadership style leads to an effective leadership that is more effort, satisfaction and effectiveness of an organization.

However, the hypothesis testing made by Aslamiah (2014) showed that there is no significant relationship between teacher transformational leadership with teacher commitment to the schools in Kalimantan, Banjarmasin. These findings also indicated that there is no

consistency with leadership theory which suggested that transformational leaders capable of making subordinates more committed to perform for the organizations (Bass, 1985).

There is also evidence from previous literature that transformational leadership has a significant and positive relationship with the organization outcome, such as quality of service (Jabnoun & Rasasi, 2005), building long-term relationships with clients (Liao & Chuang, 2007), the impact of the involvement of students such as participation and identification with the school (Leithwood, Jantzi & 1990), and the commitment and the efforts of teachers in reform school (Geijsel et al., 2003). The study of Raemah (2010) in Malaysia HEIs certifies that transformational leaders have successfully increased academic staff commitment in providing the best quality service to their students. This finding is supported by Sadiq and Mahmood (2014) and Bakar and Mahmood (2014) that transformational leadership has a significant relationship with the excellence of the HEIs in Nigeria and the performance of HEIs in Malaysia.

However, in another study by Yu and Jantzi, (2002) found that a commitment to change amongst teachers is different and contradictory with the fact that transformational leadership can be modeled as a leader who is very concerned about the career development of teachers. Even so, the level of commitment among teachers from the study of Yu and Jantzi, (2002) found that the feedback from students and parents is more important compared to the feedback from the leaders. The findings of the review cases like this can be concluded that teachers in the school environment can continue to give commitments although they see their leaders become otherwise. This difference may be due to their sincerity and enthusiasm. Therefore, it is something interesting to know what would happen in an environment of higher education, especially in universities in developing countries such as Malaysia.

In the light of the previous arguments, and other supporting arguments on the transformational leadership style and affective commitment to service quality, the following hypothesis is proposed:

H1: Transformational leadership style has a significant relationship with an affective commitment to service quality

Transformational Leadership Style, Leadership Communication and Affective Commitment on Service Quality

A study by De Vries Bakker and Oostenveld (2010) found that leadership style mediate the relationship between style of communication and leadership. The findings of De Vries et al. (2010) agreed by Dion (2012) which sets out the role of leaders is to persuade workers. The trust established between workers and leaders has also been seen as a component of successful communication (Zeffane, Tipu, & Ryan, 2011). Some research shows communication plays an important role in developing and maintaining trust. In the 1970s, researchers revealed that interpersonal trust has a positive effect on job satisfaction (Driscoll, 1978; Muchinsky, 1977). Trust and communication, such as employee participation and performance, has been shown to increase the revenue of the Organization (Hassan & Semercioz, 2010; Mahajan, Bishop, Scott, 2012; Zeffane et al., 2011). The increase in organization's revenue directly associated with a merger or the success of acquisition resulting from an effective communication (Marks & Mirvis, 2011).

Nickels, McHugh and McHugh (2012), acknowledges that most high performance organizations have similarities in practice open communication as well as the frequency of communication between workers with leaders. They thought that the motivation to employees will not be effective if there is no communication. Therefore, leaders need to communicate clearly and consistently because workers who receive a message that is mixed-in may cause frustration (Phillips, 1992). Uncertainty can lead to anxiety and negative impacts on the spirit (Mintzberg, Lampel, Quinn & Ghoshal, 2003). Leaders need to consistently communicate with employees to ensure employees aware of expectations, changes, or condition, which may affect the performance of the employee. Employees are required to implement and follow the instructions of the supervisor. Higgs and Rowland (2011) and Bevan (2011) agreed that leadership communication is essential during the occurrence of the change process. Leaders must promote communication and participation of employees in the change process. Leaders must understand how to communicate with employees in order to obtain a commitment from the employee in achieving organizational goals (De Vries et al., 2010).

The function of a leader can be influenced by the relationship between leaders and employees, the relationship can be determined by personality, style of communication, and work patterns (Harvey Martinko & Douglas, 2006). According to Schuttler and Burdick (2010) there are two laws of communications that need to be addressed, namely if leaders fail to communicate effectively, the performance of the employees will be affected, and if the communication in the organization ineffective will also affect the organization. Therefore, leaders have a responsibility to communicate effectively and clearly with employees (Schuttler & Burdick, 2010). The practice of effective communication encourage openness among administrative staff with the leaders and thus it helps the process of the delivery of the vision and goals of the organization in providing affective commitment to the quality of service to customers. In the light of the previous arguments, and other supporting arguments between leadership communication, transformational leadership style and affective commitment on service quality, the following hypothesis is proposed:

H2: Leadership communication mediates the relationship between perceived transformational leadership style and affective commitment on service quality. Figure 1 depicts the research framework.

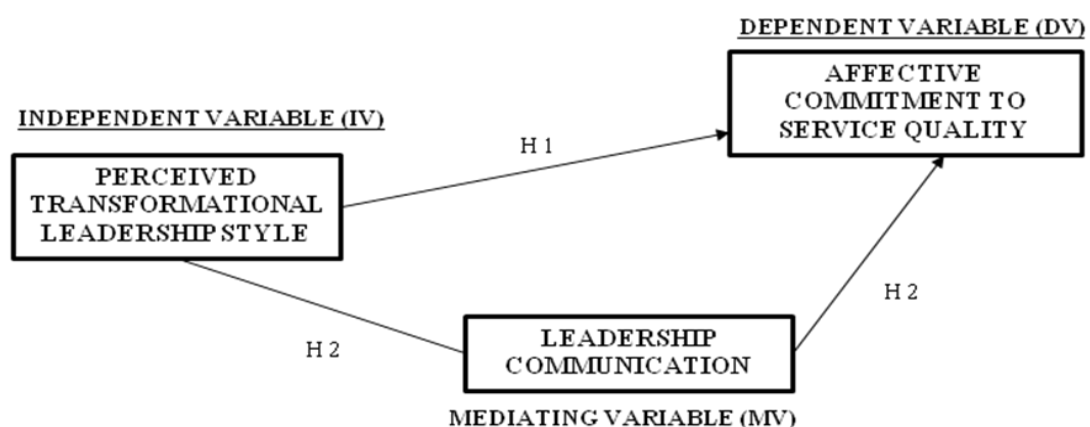


Figure 1: Research framework

The research framework underpinned by theories adapted from psychological theory and social science theory, namely Cognitive Dissonance Theory introduced by Festinger (1957) and communication theory, namely Adaptive Structure Theory introduced by West & Turner (2009).

A conflict happens when administrative staff met leaders who may not wish to acknowledge their efforts, too demanding or conscious class similarities and have employees that negative attitudes toward their leaders. Therefore, in the event of any conflict, the leaders should give the perfect justification to convince that some type of contingency rewards, guidance, communication or instruction will be given to staff. This will reduce the conflict and attitude change of administrative staff where they will be more likely to adopt a positive attitude to the affective commitment to service quality.

While Adaptive Structure Theory has been integrated and have acted as a catalyst in encouraging the commitment of administrative staff on service quality. It also helps leaders in understanding requirements to get the affective commitment of administrative staff on the service quality by increasing aspects of extrinsic and intrinsic content of their duties (Steers & Mowday, 1977). This theory proposes that each organization has the organizational structure created and re-created to produce social structure. Social structure often dictates the rules of communication in the organization, whether formally or informally, the frequency of communication and the communication style is part of the structure of this theory. Leader as a trigger in an individual relationship amongst members, and thus, this relationship will persuade an employee to act to a direction (Protas, 2013). Employee satisfaction on the frequency of communication with their leaders, is the catalyst for an affective commitment of administrative staff on the service quality among administrative staff in private universities of Malaysia.

RESEARCH METHODS

Population and Sampling

The study of population was subject to be studied or a group of people, events, or interesting things which researchers want to make conclusions based on statistical samples (Sekaran & Bougie, 2014). According to the statistics from the Ministry of higher education Malaysia (KPT) under the Private Higher Education Department (Kementerian Pendidikan Malaysia, 2015), there are 41 private higher education institutions in Malaysia. But, the population of this study or data was collected from 32 private universities, main campus in Klang Valley only involving a total of 7,299 administrative staff.

This study is limited to private universities located in Klang Valley due to factors of geography, convenient for facilities access to target respondents. Previous studies in the context of education, for example: Raemah (2010), Noordin and Jusoff (2009), Arokiasamy, Ismail, Ahmad and Othman (2007) and Santhapparaj and Alam (2005) also take samples mainly from urban areas and as such, this method has been supported in terms of comprehensive external validity on research findings (Ariffin, 2006; Sekaran, 2005). Therefore, the selection of the 32 private universities, main campus in Klang Valley is able to represent 41 universities in Malaysia.

Sampling

According to Sekaran and Bougie (2014) sampling is a process where a small number of the total population is selected and reviewed to enable us to make a generalization about the population. In short, sampling involves research on the samples to represent the whole population in the study. This method has been adopted by previous researchers either from pure science or social science (Sent, 2010).

Disproportionate stratified random sampling used for this study, because several layers or strata is small-sized compared to other populations of the target strata which have a larger number of administrative staff. Disproportionate stratified random sampling has the advantage, because it's easier to manage, simple and low cost to collect data from one or more from other strata (Sekaran, 2005; Babbie, 2005).

Based on the total population of administrative staff in private universities, in Malaysia amounting to 7,299, the appropriate sample size is 365 people. This amount is selected based on the size of the sample developed by Krejcie and Morgan (1970) where 365 numbers of respondents involved are based on the minimum sample size to be used. This statement is also agreed by Roscoe (1975) that supports sample size of more than 30 and less than 500 is suitable for most studies.

Ramayah, Yan and Sulaiman (2005) said that the response rate was around 10 to 20 per cent, while Ainin, Kamarulzaman, Farinda and Azmi (2010) in their study found only 15 percent. Based on these statements, researcher assumed that only 20 percent of the overall distribution of survey questions. Hence, the researchers distributed a total of 1,825 survey questions to the respondents. 310 survey questions have been accepted with a response rate of 17 per cent.

Measurement of the Constructs

This research seeks to understand the relationship between transformational leadership style and affective commitment to service quality and leadership communication as the mediator. Table 2 below depicts the three research measurements to be used in this study.

Table 2: Research measurement

Variables	No. of items	Likert scale	Source
Transformational Leadership Style	20	5	Bass and Avolio (2004)
Leadership Communication	22	5	Down & Hasen (1977)
Affective Commitment to Service Quality	9	5	Clark et al. (2008)

RESULTS

Multiple and hierarchical regression analysis were conducted to examine the relationship between the study variables and to test the research hypotheses. The adequacy of the model was confirmed by checking the regression assumptions, such as linearity, normality, homoscedasticity, and error independence. In addition, the data revealed that the data had no issue of the multicollinearity and there were no outlier observations. The mean, standard

deviation and the correlations among the variables of the study are illustrated in Table 3 providing initial support of the model framework.

Table 3: Descriptive statistics and correlations

	Mean	Standard Deviation	TLS	LC	ACSQ
Transformational Leadership Style (TLS)	3.74	0.616	1		
Leadership Communication (LC)	3.54	0.561	.769**	1	
Affective Commitment to Service Quality (ACSQ)	3.87	0.559	.565**	.597**	1

***Correlation is significant at the 0.01 level*

Table 4 below, demonstrated that all the tolerance values were higher than 0.1 and the VIF values were lower than 10 indicating that the issue of multicollinearity was not a serious issue (Hair, Black, Page & Samouel, 2010). In conclusion, these results showed that affective commitment to service quality, transformational leadership style and leadership communication even highly correlated yet distinct in measuring their own concepts.

Table 4: Collinearity analysis

Variables	Collinearity statistic	
	Tolerance	VIF
Transformational Leadership Style	0.240	4.158
Leadership Communication	0.407	2.454

Hypotheses Testing

Hypotheses testing has been done to answer the research objectives. For hypotheses 1, researchers using multiple regression analysis whilst for hypothesis 2, hierarchical regression analysis are used. Prior to the hypotheses tested, the overall test result is shown in table 5 below:

Table 5: Model Summary^b

R	R square	Adjusted R squared	Standard error of estimate	Durbin watson
0.620 ^a	0.384	0.380	0.441	1.837

a. Predictors: Transformational Leadership Style, Leadership Communication

b. Dependent Variable: Affective commitment to Service Quality

From model summary as depicted in table 5 above, the independent variable of transformational leadership style and the mediator variable of leadership communication shows that, collectively the model affects 38 per cent of the variation (R square/(R²). This shows that the affective commitment to service quality variable, leadership communication and transformational leadership style predicted 38 percent affective commitment to service quality model as a set of predictor and the balance of 62 per cent may be contributed by other factors that not included in this study. The overall model, affective commitment to service quality verifies that the leadership communication variable and transformational leadership style variable affect 38 per cent of affective commitment to service quality.

The result of multiple regression for hyptheses 1 is as follows:

Table 6: Multiple regression analysis between tranformational leadership style and affective commitment to service quality

Variable	Beta coefficient	T	Sig
Transformational Leadership Style	0.565	12.021	0.000

Independent Variable: Affective Commitment to Service Quality

The multiple regression analysis result as depicted in Table 6 above, shows that the transformational leadership style has a significant relationship with an affective commitment to service quality, the significance value is $p = 0.000$. The beta coefficient for this relationship is $\beta = 0.565$ and t value = 12.021. Therefore, the H1 is accepted. Hence, the transformational leadership style is a variable that influence the affective commitment to service quality.

Mediating Effect of Variable

From the literature Baron and Kenny (1986), 4 steps analysis was used. The first step involved regressing the independent variable on the mediator or regressing transformational leadership style on leadership communication. The second step for mediation is to regress the independent variable on the dependent variables, where we regress transformational leadership style on Affective Commitment to Service Quality. The analysis had come out with results as below to show that leadership communication as mediating effect on the transformational leadership style towards affective commitment to service quality.

Table 7: Result of leadership communication as mediator to the relationship between transformational leadership style and affective commitment to service quality

Significant Relationship between Variables	Beta coefficient in regression (DV on IV)	Beta coefficient in regression (DV on IV and MV)	Result
Transformational Leadership Style	0.565 (p=0.000)	0.259 (p=0.000)	Partial Mediator
Leadership Communication	0.597 (p=0.000)	0.399 (p=0.000)	

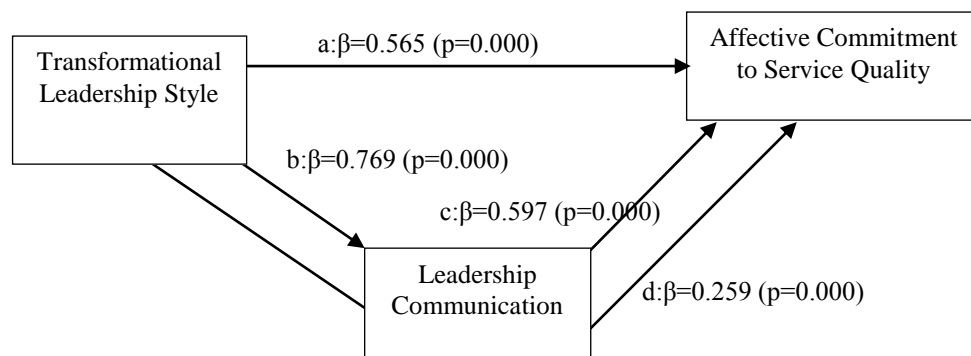


Figure 2: Mediating effect of leadership communication on the relationship between transformational leadership style and affective commitment to service quality

As illustrated by Figure 2 above, in the presence of leadership communication, there is partial mediation between transformational leadership style and affective commitment to service quality. It means that, the practice of transformational leadership style together with leadership communication will promote the affective commitment to service quality.

The results of this study show that, affective commitment administrative staff of Malaysian private universities to service quality is strengthened by factors of transformational leadership style and leadership communication. Thus, this study supports the research framework proposed in the context of education sectors in Malaysian private universities.

DISCUSSION AND CONCLUSION

The findings of this study are consistent with that of the previous studies (Bass, 1990; Christie, 2002; Jabnoun & Rasasi, 2005; Rowold & Heinitz, 2007; Jansen et al, 2009; Raemah, 2010; Thamrin, 2012; Sadiq & Mahmood; 2014; Bakar & Mahmood, 2014) but not consistent with a study by Yu and Jantzi (2002) and Aslamiah (2014).

The role of administrative staff in providing affective commitment to service quality at their university may give satisfaction to customers, especially for students, parents, lectures and also to the public who deals with the university. Therefore, the service quality of a university is not only in the quality of learning by academicians, but also the commitment of administrative staff. The findings also found that transformational leadership style is a partial mediator when the leadership communication variable as a mediator which indicate that this leadership style requires leadership communication as a catalyst for delivering messages and objectives to their administrative staff. Therefore, in the assessment to appoint future leaders in a university, the management may consider leaders who have the characteristics of a transformational leadership as well as practicing a good and effective leadership communication in ensuring the management of the university achieve its objectives.

From the objective and hypothesis discussed above, the transformational leadership style as an independent variable tested to determine its relationship to the dependent variable, namely an affective commitment to service quality by administrative staff at Malaysian private universities. The researchers found that, there is a significant relationship between transformational leadership style with an affective commitment to service quality by administrative staff at Malaysia private universities. The researchers have successfully demonstrated that the role of the leaders is very significant and important in ensuring the affective commitment of service quality by administrative staff in private universities in Malaysia. Researchers believe that practicing this leadership style is able to lead and bring their organization towards service quality and to meet the needs and satisfaction of their customers.

Therefore, researchers suggest that providers and leaders of top management of private universities need to make strategic restructuring and reinventing their institutions towards to become more committed to the service quality either in the attitude, behavior, and characteristics of their academic management. No doubt, this new environment requires someone to lead, who can bring themselves, faculty and university growing, according to the

changes, encourage innovation, promote trust and learning, and finally led the organization into the successful future (Brown, 2001; ACRULeT, 2007; Bolden et al., 2008; King, 2008). The recommendations from the previous literature also suggested that leadership mechanisms imply the goal, thus providing the climate towards a continuous commitment to service quality (Hashim & Mahmood, 2012; Hartline et al., 2000; Natalisa & Subroto, 2003; Clark et al., 2008).

Theory and Management Implications

Leadership concept model from a variety of relationships by Yukl (2002), Yukl (2006) and Yukl (2010) states that theory of leadership should have a mediating variable that can relate the behavioral situation with variables resulting from this study. Therefore, the results of this study support the model proposed by the Yukl. It shows that when the leadership communications is controlled, transformational leadership is an important factor in affective commitment to service quality. It is clear that affective commitment to service quality that relates to the combination of leadership communication and transformational leadership style. This study is also consistent with the underpinning theories of this study, namely Cognitive Dissonance Theory and Adaptive Structure Theory in which affective commitment to service quality through leadership communication is fully applied successfully in private universities in Malaysia.

From the management perspective, this study can provide valuable input to the leaders and academic management as well as policy makers in universities to build their market niches or competitive advantages over other competitors either nationally or globally through affective commitment to service quality (Hudson et al., 2004).

LIMITATION AND CONCLUSION

The contribution of any study should be considered in the light of the study limitations. First, there is a limit in the sampling frame which assume certain groups' colleges in Klang Valley area only and therefore the results cannot be generalized in the entire education industry or private universities in Malaysia. Second, although the study achieved a response rate of 17 per cent, the non response bias should also be taken into consideration (Paxson, 1992). Statically, this study did not show the existence of non-response bias; However, the real non-response bias will not be discarded completely unless all respondents answered the questionnaires. Third, this study also did not see the other styles of leadership. Although the transformational leadership style has proved to overcome other leadership styles to elaborate MLQ constructs, other styles of leadership are also necessary, especially in certain circumstances, such as the ever-changing environment that require flexible leaders in addressing the crisis. Fourth, leadership communication is taken into account in this study as the only mediating variable, although other variables may also have influenced other style of leadership and affective commitment towards service quality. Fifth, since all respondents are from the administrative staff of private universities in the Klang Valley area, the findings might not be applied or generalized in other fields or sectors.

Future Research Directions

It is suggested that future research should study the differences of the response variables under study between different groups, different positions and different hierarchy and also from different clusters. This study can also be done by using other variables such as other leadership styles that may give different results. Statistical analysis in this study may use other methods such as Partial Least Squares-SEM (PLS-SEM), Structure Equation Modeling-Amos (SEM-Amos) and many others. The findings of the study are likely to be more accurate in describing the findings. Finally, future studies may consider alternative methods such as experiments, data from the archive, observation or interviews to better understand cause and effect on different phases of times (Sekaran, 2003).

CONCLUSION

This study contributes to theory and practice in the area of affective commitment to service quality, transformational leadership style and leadership communication and also to the understanding of the factors that explain affective commitment of administrative staff to service quality in Malaysian private universities. Specifically, the findings of this study will provide additional insight into how transformational leadership style affects affective commitment to service quality and mediated by leadership communication.

In general, there is still a mixed relationship between affective commitment to service quality with leadership styles and leadership communication. It is suggested that other leadership styles and other mediators or moderators can be proposed to prove the significance of the other variables.

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Concurrent Session III A
Ethics & Sustainability

BEYOND NUMBERS AND FINANCIALS: ACCOUNTING AND CORPORATE SUSTAINABILITY

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ABSTRACT

With the evolution of industrialization and the expansion of corporations, there has been much concern about the protection of “others” interest when taking business decisions. Others include the environment, different stakeholders, future generations and the corporation itself as an abstract entity. Consequently, the powerful impact of this evolution has made the Corporate Sustainability (CS) an issue that should be considered either instrumentally to achieve the objectives of owners or normatively as a part of the organization’s goals. In this paper, we summarize the key aspects of sustainability that are embedded in the accounting research and practice. We firstly look at the Corporate Social Responsibility (CSR), including Environmental Accounting (EA), as a vital starting point for the CS research in Accounting. Then, we illustrate the contribution of Accounting to CS through the enhancement of governance systems, the encouragement of a long-term outlook, ensuring the reliability of financial reports and promoting the ethical and professional behavior aspects of accounting practitioners. We conclude the paper with some recommendations for future research and accounting education which may emphasize the understanding of accounting in the context of CS.

Keywords: Accounting, Corporate sustainability, Corporate Governance, Short-termism, CSR

INTRODUCTION

Accounting, as a science and a profession, has dramatically changed in the last decades from a mere bookkeeping process to a holistic approach of decision making and fulfilling communities’ welfare and sustainability. Historically speaking, accounting had emerged from the so called “double-entry system” which had been adopted firstly by Italian merchants hundreds of years ago (Bryer, 1993), and, since then, the accounting has been growing

significantly to include new fields, other than Financial Accounting, such as Management Accounting, Environmental Accounting and Forensic Accounting (See Burchell et al., 1980; Kaplan, 1984; Ramaswamy, 2007; Huber, 2012). In our today’s world, recent developments in Accounting research and practice have either improved or indicated, in many ways, to the contribution of accounting into the sustainability of corporations and societies as well.

First, different accounting techniques have been developed to effectively organize and manage organizations, such as management control tools (Ahrans and Chapman, 2007). In addition, the internal auditing practices have been developed beyond the financial transactions assurance to become one of the Corporate Governance (CG) tools for the best practice, particularly after the severe accounting scandals in the early decade of 2000, like Enron and Parmalat (Ramamoorti, 2003; Carcello et al., 2005; Laker, 2006). Second, International Accounting Standards (IASs) have been developed to the best use and benefit of corporations, including more comprehensive areas of firms’ operations. Third, the external auditing practice has significantly changed into more advanced system which operates as an instrument to enhance CG (Fan & Wong, 2005). Fourth, after the development of the stakeholders-based view of business entities, CSR has become an integral part of organizations performance (Carroll, 1999; Hoffman and Fieseler, 2011). Fifth, accounting research and practice have been consistently attempting to address the use of creative accounting, which are aimed to manipulate accounting numbers and facts, providing the potential reasons behind these practices and the ways of detection and mitigation (e.g., Dechow et al., 1995; Burgstehler and Dichev, 1997; Becker et al., 1998; Xie et al., 2001; Abdul Rahman and Ali, 2006; Hashim and Devi, 2008). Sixth, managerial short-term orientation has been recognized in both of professional practices and accounting researches as a critical problem which needs to be dealt with (e.g, Wahal and McConnell, 2000; Ladika and Sautner, 2014). On the other hand, accounting is now based on professionalism and ethics as necessary characteristics for accountants (Smith, 2003; Bean and Bernadi, 2005).

Overall, the “beyond numbers” development of Accounting has given much concern, whether directly or indirectly, to the long-term orientation of organizations and the different aspects of sustainability. In this paper, we shed some light on the contribution of Accounting into the sustainability by summarizing the potential considerations that have transmitted the Accounting profession from mere financial practices to a broad science and profession, which made it a mechanism to enhance the sustainability of corporations. The rest of this paper is organized as follows. Section 2 presents an overview of Corporate Sustainability from the accounting perspective. Then, some aspects of sustainability accounting and some implications are explained in Section 3 and 4, respectively. Finally, the paper is summarized in the last section.

OVERVIEW OF CORPORATE SUSTAINABILITY

Sustainability or sustainable development is defined as “meeting fundamental human needs while preserving the live-support systems of planet earth” (Kates et al., 2001, p. 641). As can be clearly seen from this definition, sustainability has to do with the avoidance of damaging the environment and other components of the earth so that the interests of future generations are protected. However, the term is used much broadly than the ecological scope and includes social and economic aspects (Shrivastava, 1995; Dyllick and Hockerts, 2002; Marrewijk, 2003; Sikdar, 2003; Kuhlman and Farrington, 2010). Thus, there are three principles on which the

sustainable development concept is based (Bansal, 2005). First, since most of the natural resources are not regenerative, the environmental principle of sustainability suggests the ways of mitigating human activities that may erode these resources. Second, the economic sustainability aims at improving the productive capability of corporations and individuals in society. Third, the social concept ensures that different members of society, whether the existing ones or future generations, have equal opportunity to resources. Accounting, in its modern concept, encompasses these different principles and contributes to the sustainability of corporations and societies, as we shall discuss below.

In business terms, CS can be defined as the process of fulfilling the interest of the organizations' current stakeholders without disadvantaging future stakeholders (Dyllick and Hockerts, 2002; Projasek, 2007). Bansal (2005, p.200) provides a "resource-based view" and an "intuitional explanation" of CS. The first concept considers the CS as a source of generating corporate resources based on various reasons, including that adopting sustainable approaches of business is likely to associate with higher performance as empirically supported by Hart and Ahuja (1996) and Hull and Rothenberg (2008). The other explanatory view of CS ascertains the importance of the social environment with which organizations deal and operate (Bansal, 2005). Based on this view, organizations adopt CS to comply with different systems and avoid actions that put them into disrepute. Therefore, "failure to conform to critical, institutionalized norms of acceptability can threaten the firms' legitimacy, resources and, ultimately, its survival" (Bansal, 2005, p.202).

The accounting contributes to the CS in different ways, which themselves overlap. From an environmental perspective, Accounting academic studies and policy committees have emphasized the environmental measurement and disclosure as a vital part of Accounting (Wiseman, 1982; Neu et al., 1998; Ferrero et al., 2013). In addition, business value, governance systems, investment horizons, social responsibility and professionalism aspects are believed to have a significant association with CS (Bushee, 1998; Lo and Sheu, 2007; Aras and Crowther, 2008; Bansal and Desjerdine, 2014).

ACCOUNTING AND CORPORATE SUSTAINABILITY

The major development that Accounting has witnessed in the recent decades made it a fertile field for research, particularly for the critical issue of "sustainability". Although the accounting research has contributed significantly to the concept of making corporations sustainable, the debate has not explicitly used the word "sustainability" in most of the literature, which may make it ambiguous to be linked to CS. Therefore, in this section we demonstrate some different overlapping aspects of accounting either in the professional field or in the academia that have the most influence on CS.

As a major issue with which the sustainability science had started with, we firstly examine the CSR, including environmental accounting, as an important field of accounting research and practice, which largely emphasizes the significance of corporations being environmentally friendly. Then, the economic concept of CS is demonstrated by how the CG and managerial short-termism can be reduced using different techniques proposed by Accounting. Furthermore, we explore the ethics and professionalism as a major significant contribution to the CS, which emanate from the accounting practice.

Corporate Social Responsibility

The concept of CSR includes social, environmental, economic, stakeholder and voluntariness dimensions (Dahlsrud, 2008). In essence, CSR recognizes that the materialistic view of the company's objective is no longer valid with the growing powerful influence on other parties in society. The question here is how this concept relates to CS? The answer to this question needs to be considered from different perspectives, including the following. First, CSR was empirically found to be associated with higher performance levels, *ceteris paribus* (e.g., Cochran and Wood, 1984; McGuire, 1988; McWilliams and Siegel, 2000; Mishra and Suar, 2010). Second, apart from the financial performance, CSR was found to be linked to the self-performance of employees (Korschun et al., 2013) and, thereby, enabling the firm to maintain contented staff which may reduce the employee turnover and, hence, the firm's risk of failure. Third, the CSR quality may ease the firm's access to finance (Cheng et al., 2014) and may reduce the cost of equity (Elgoul et al., 2011). Fourth, in marketing terms, CSR may even promote the firm's reputation and image (Yoon et al., 2006). Fifth, and more importantly, it was argued that the balanced scorecard, which is performance measurement technique in management accounting, should incorporate CSR aspects more comprehensively (Figge et al., 2002; Thanaraksakul and Phruksaphanrat, 2009)

The point behind these benefits is that accounting research recommends different techniques to achieve the stakeholders' interests. Thus, the CSR can be utilized to enhance the various aspects of the organization, as the aforementioned empirical studies have shown. Therefore, when taking financial decisions, not only numbers are looked at from an accounting perspective but also the qualitative consequences and advantages of these non-financial decisions, a matter that contributes to the CS and the firm's long-term outlook.

Environmental Accounting

The Environmental Accounting (EA) has been a hot topic of CSR research synchronized with the industrial development of the world corporations and the increasing use of polluting instruments and factories which severely damage the environment. The American Accounting Association (AAA) committee on social costs' accounting had reported in 1974 that EA is concerned about "measurement, recording, and communication of information related to social efforts and impact of an organization on society" (AAA, 1974). Since then, the EA research and policy have been taking more practical route. After the theoretical invalidation of the pristine stockholder theory, it has been recognized that organizations have become more socially powerful so that the unrestricted use of resources will certainly damage other constituents of the environment in which they operate. For example, air pollution affects inevitably other parts that are not in a business relationship with the corporation (Mobus, 2005). Thus, ignoring such repercussions means that businesses are carried out in an isolated environment, which is unrealistic. Therefore, the main concern of the EA is the disclosure of any damages caused by the companies' operation to the public and attempting to reduce these externalities to the minimum possible level. Consequently, the EA has become more practical area which is now subject to different regulations. For instance, the UK companies' act 2006 requires listed companies to disclose "greenhouse gas emissions" which lie under their responsibility, and a regulation issued in 2013 requires companies to report environmental impact on a section called "strategic report" (DEFRA, 2013). Similarly, there are other mandatory regulations that have been imposed in other countries, such as the Environmental

Quality Regulation of 2014 in Malaysia and New Zealand Environmental Reporting Act of 2015.

In the context of the academic research, many studies have looked at the EA from different perspectives, mostly concentrated on the issue of environmental reporting (e.g., Gray et al., 1995; Neu et al. 1998; Friedman and Miles, 2001; Clarkson et al., 2008; Sulaiman et al., 2014). Apparently, the very existence of a relationship between environmental concerns' recognition and the CS seems not to have been explicitly expressed. However, the organization's incurrance of environmental costs, including mandatory ones, can be looked at as a long-term oriented strategy. For example, taking the air pollution and other environmental considerations into account may prevent the company to be held negligent and, thus, the possibility of large fines and penalties that may threaten its existence. Therefore, accounting helps organizations to measure, record and report environmental costs on their annual reports, which are part of the requirements of accounting standards as well as industry regulations. Empirically, environmental reporting was found to have a positive impact on the firm's performance and prospects for survival (Al-tuwaijiri et al., 2003; Connelly and Limpaphayom, 2004; Montabon et al., 2007; Moon, 2007) and, hence, the firm's opportunities for success and sustainability.

Corporate Governance

The issue of CG has been critically scrutinized in terms of theory and policy after the financial collapse of some business giants, among which was Enron's scandal, and the subsequent allegations that have put the accounting profession into disrepute. CG is generally defined as "the system by which companies are directed and controlled" (Cadbury, 2000 p.8). In practice, not all companies are administered by their owners in today's world business since that there are skills required for corporations' management, a matter that necessitates a manager (an agent) to be delegated for this purpose on behalf of the owner (the principal). As a consequence, principals suffer from "information asymmetry", where they have a limited access to their funds' operation comparing with managers. Therefore, in order to enhance the integrity between these transacted parties, including other stakeholders, this gap should be filled up with strong CG.

With regard to the contribution of CG to CS, there are many implications, as referred by previous empirical findings, for having a strong CG on the entire business. For instance, the strength of CG is likely to be associated with higher performance (e.g., Core et al., 1999; Bauer et al., 2003; Bhagat and Bolton, 2008; Che haat et al., 2008), lower cost of capital (e.g., Aksu and Kosedag, 2006) and higher information disclosure (e.g., Haniffa and Cooke, 2002; Eng and Mak, 2003; Maingot and Zeighal, 2008; Kelton and Yang, 2008). More specifically, the CG structure may predict the firm's bankruptcy, as found by Daily and Dalton (1994), and may encourage the disclosure of sustainability information in particular (Michelon and Parbonetti, 2012). Collectively, the accounting academicians and policy makers have jointly developed the different CG mechanisms which are likely to lead to CS if properly maintained. Therefore, it is necessary to look at CG from the perspective of its significance for CS and not only from the previously mentioned "information asymmetry" perspective. Furthermore, another aspect that is tackled by CG mechanisms is the so called "managerial myopia", which includes the manipulation of earnings for short-term purposes and short-term investment orientation, as we shall see in the next section.

Managerial Myopia

The myopic behavior of managers has been a subject of debate in Accounting for the recent decades. “Managerial Myopia” refers to the risk that managers concentrate on short-term goals or investments at the expense of long-term objectives. If such myopic behavior exists, the businesses may be put into the risk of failure and bankruptcy. According to previous empirical findings, the managerial short-termism can be induced by many factors, including the form of executive remuneration (Coates et al., 1995; Bolton et al., 2006; Gao et al., 2014; Ladika and Sautner, 2014), a fear of takeover (Gao et al., 2014), the existence of short-term oriented institutional investors (Bushee, 1998; Gao et al., 2014), frequency of financial reporting (Bhojraj and Libby, 2005; Kraft et al., 2016), and so forth. The accounting research, although the debate is not decisive, recommends, for example, that institutional investors can reduce the myopic behavior of managers (Bushee, 1998; Wahal and McConnell, 2000).

On the other hand, another aspect of short-termism is the widely discussed topic of earnings management. It means the manipulation of earnings in order to fulfill a short-term aim. Previous studies in Accounting have thoroughly discussed the ways of detecting and managing this problem (e.g., Dechow et al., 1995; Burgstehler and Dichev, 1997; Becker et al., 1998; Xie et al., 2001; Abdul Rahman and Ali, 2006; Hashim and Devi, 2008), among which the CG system and structure stands on the top. Therefore, by preventing corporations from manipulating earnings, Accounting confronts such a risk to take place and, thereby, encouraging long-term orientation and sustainability of businesses.

External and Internal Auditing Contribution

Conventionally, auditing is considered as a solution to an agency cost. In other words, the reliability of the financial reports provided by the agents (managers) to owners (principals) is increased by auditing these reports. By doing so, auditors play a significant role in CG, as empirically reported by Fan and Wong (2005). The external audit process, which is mandatory for public companies in almost all jurisdictions, is no longer a “financial reports’ assurance”. Other assurance services, such as sustainability auditing and social auditing, are now on the rise. Sustainability auditing, for example, is used to assess environmental activities of corporations by comparing the outcome with a set of factors used as a reference (Nitkin and Brookes, 1998). Therefore, auditing practices may actually induce the adoption of sustainable development. In addition, although there are independence concerns about internal auditors, the practice of internal audit as a risk management technique may itself enhance CS by avoiding risks.

Ethics and Professionalism

The ethics and professional behavior have become two important components after the corporate scandals that have shaken investors and other interested parties in Accounting. Academically, accounting ethics course is implemented in most of the accounting programs, since it has been recognized as professional necessity (Bean and Bernadi, 2005). Furthermore, professional accountants are required by different regulatory bodies to undertake an intensive training on ethics and the importance of considering professional considerations when taking decisions. For example, the International Ethics Standards Board for Accountants (IESBA) code is required to be applied by professionals who belong to International Federation of

Accountants (IFAC). Among the most emphasized attributes by accounting experts are the importance of dealing with integrity and professional skepticism (Smith, 2003), which requires accountants to consider all aspects of a decision. Consequently, if an action can harm the sustainability aspects of the organization illegally, accountants have professional duties to act properly.

RECOMMENDATIONS

Although the CS-related topics are widely recognized currently in both research and practice, there are still some areas that need to be considered more comprehensively. First, most of the covered areas of CS in this paper, except the EA, are not explicitly expressed as CS aspect. Although strong CG is likely to encourage more sustainable corporate decisions, it seems that a little concern is given to the true association between CS and CG. Thus, accounting research may trigger the contribution of CG into the enhancement of CS. Second, the CS topic should be studied from many perspectives, including the ones that we discuss in this paper, in order to manifest the “beyond numbers” contribution of Accounting. In this regard, it is important to note that the accounting profession is believed to have lost some of its integrity after the huge corporate scandals like Enron (Suddaby et al., 2009), and, therefore, stressing these areas helps to retrieve the lost confidence and reputation of the profession. Third, it is important to look at the impact of corporations’ culture and director’s attitude, in the first place, on CS, in order to widen the understanding of CS. It is imperative to study how the managerial myopia affects the CS since the managers are likely to opt for short term benefits rather than long term benefits that can sustain a corporation in a long run. Fourth, in terms of accounting education systems, the development of a syllabus that covers all these aspects would be of utmost importance. For example, instead of the common course of ethics in many accounting educational systems (Christensen et al., 2007), the different constituents of CS can be delivered in a separate course to give students a comprehensive image about the contribution of Accounting to CS.

SUMMARY

In this paper, we summarize some accounting topics that are related to CS. At first, we present the role of accounting in CSR and environmental concerns. We referred to previous empirical findings that stressed the significance of these areas for the organization’s sustainability. In Addition, we refer to CG as an instrument that can be also used to incentivize decisions’ tendency to consider sustainability aspects through different CG mechanisms. Then, we explore how the restriction of managerial short-termism and earnings management can be looked at from an accounting perspective. Furthermore, the roles of both of external auditing and internal auditing in limiting risks and, hence, encouraging CS are briefly highlighted. Finally, we demonstrate that the requirements of ethics and professionalism can also represent behavioral tools to discourage actions that may harm CS.

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THE SERVICES QUALITY INFLUENCE THE SATISFACTION OF SMES AND FEES PAID ON NON- AUDIT SERVICES PROVIDED BY SMALL AND MEDIUM PRACTITIONERS (SMPs)

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ABSTRACT

It is an undeniable fact that Small Medium Enterprises (SMEs) play an essential role in the growth of the economy of Malaysia. Although SMEs form the majority of the total number of registered companies in Malaysia, its contribution to the country's gross domestic product (GDP) is still not significant as compared to SMEs in other countries. Generally, SMEs are facing many challenges and barriers such as lack of managerial capabilities, shortage in financing and human resource. This forced SMEs to find the expertise from an external party such as an accountant in term of non-audit services (NAS) to overcome their challenges. As an external accountant is the first choice for SMEs to seek the advices, it is essential to study the service quality of external accountant who providing the NAS to SMEs and the relationship with satisfaction and non-audit fees. A total 106 usable responses were used in the analysis and found that from the five dimensions of service quality only four dimensions (namely tangible, assurance, responsiveness and reliability) has a significant relationship with satisfaction. Meanwhile, only assurance, responsiveness and reliability significantly affect the level of non-audit fees paid. The finding helps external accountant to strategize their services in order to satisfying their customer and determined the level of fees would like to charge. Overall, this paper draws attention to the importance services quality of NAS in enhancing the survival of the SMEs.

Keywords: Small and medium enterprises, Non-audit services, Services quality, Satisfaction

INTRODUCTION

Due to the fact that Small Medium Enterprises (SMEs) play an important role towards the world economy as a potential contributor, there is a wide interest in its development as well as finding ways to reduce its failure. In most developing and transitioning countries, it is found that these small businesses have an advantage towards alleviating poverty (Morris, Woodworth, & Hiatt, 2006) apart from contributing its potential towards creating sustainable development (Tilley & Parrish, 2006). It is a globally known fact, that the SMEs play a significant role in contributing towards the development of a country's economics, creating job opportunities, and maintaining the overall health and welfare of the world's economy (Korsching & Allen, 2004).

Around the world, in most of the countries these SMEs strictly play an essential part towards the country's economic lifeline. As such, it is a major contributor towards ideas and employment which are the determining factors towards sustaining and stimulating the national economic growth. However, the optimum potentials of these SMEs remains undiscovered or manipulated even though these SMEs actually dominates the economy of a country as far as the employment and number of companies are concerned (Schlogl, 2004). A matter of consideration here is, though there is a wide understanding of the advantages and positive impacts of SMEs in the growth of economics, the economic importance of SMEs are yet to be tested in a wholesome manner. Having understood the importance of SMEs contributions towards the national economy, it is timely to study the ways and means to beneficially exploit the prospective of the SMEs. Through this research, a way that can be suggested is the evaluation of the role of professional accountants in enhancing the business advisory services / non-audit services (NAS) in order to help SMEs manage their business decisions in a more informed manner (PAIB Committee, 2005). This is important because the SMEs are facing shortage of skilled personnel, low expertise in technical and management knowledge and human resource constraints (Ting, 2004; NSDC 2012).

Further, past literature highlighted that SMEs will look for the external advisor to overcome their weaknesses and constraints in order to improve their business performance (Bennett & Robson, 1999; Berry, Sweeting, & Goto, 2006; Xiao & Fu, 2009). External advisor refers to solicitor, consultants, external accountants, chambers of commerce, bank, academia, government agencies and so on (Bennett & Robson, 1999; Berry et al., 2006; Ong, Azmi, Isa, Jusoh, & Kamarulzaman, 2008). Previous studies found that external accountants are the main advisors to SMEs (Bennett & Robson, 1999; Berry et al., 2006; Leung, Raar, & Tangey, 2008). This point is supported by a study conducted in New Zealand where the results show that accountants are the key source of advice to SMEs. They are frequently referred to, and their advice is rated as significant and useful (Lewis, Massey, Ashby, Coetzer, & Harris, 2007). The research conducted by Deakins, Logan, and Steele (2001) found that accountants assist in establishing networks, advice in business performance and ensure that learning happens in SMEs. The authors identified that SMEs who seek advice from accountants are usually in the beginning stage of the business cycle. Meanwhile, research done in Malaysia shows that there are six areas that SMEs will normally seek assistance from an external accountant and they are: (i) accounting services, (ii) taxation services, (iii) assurance services, (iv) corporate services, (v) corporate finance services and (vi) business consulting services. Among the services offered by external accountants, taxation service is rated as the top most service that is sought after by SMEs (Ong et al., 2008).

NAS also may destroy an accountant's professionalism and the client if Small and Medium Practitioners (SMPs) provide the services with lower quality. The quality of service performed depends on the level of fees being charged (Chia, Lapsley & Lee, 2007). According to Frankel, Johnson & Nelson (2002), audit firm used non-audit fees as their strategy to increase their income and the fees being charged to their clients were not based on the quality of work performed.

According to Carcello (2002), firms demanding higher quality audit will be willing to pay a higher fee. Meanwhile, Chia et al. (2007) stated that the amount of audit fees being charged depends on the quality of audit works performed. The higher the audit service quality is, the higher will be the amount of fees charged. Auditors might charge any level of fees, if they only provide non-audit services because there is no regulations to control it. (Craswell & Guest, 2000).

SMPs need to provide services with good quality to SMEs. With this assistance, SMEs will be able to overcome the challenges and barriers they are facing. Thus it will increase the contribution to the country's economic growth. Directly, SMPs are able to increase the firms' revenue by capturing the SMEs market by offering the service needed by them. In addition, they can determine the level of fees that can be charged without impairing their independence. Non-audit service is as important as audit service because the responsibility is almost the same as audit service and the effect to accountant of lower quality service with may destroy the client and as well as the auditor professionalism.

Therefore, this study would like to explore whether services provided in term of NAS by SMPs have quality, the satisfaction level of SMEs and the influence of service quality on the level of non-audit fees. It becomes an interesting gap to be investigated further because the level of fees depends on the service quality provided by a firm.

QUALITY THEORY

The quality theory model was introduced by DeAngelo (1981). The model is used wisely in auditing service to determine the service quality. According to the model, controlling factors on the audit firm are divided into two categories, which are audit firm factors and audit team factor. The first category refers to controlling on the firm factors such as control process, human resource and industry experience. The second factor refers to controlling in audit team factors such as planning and performance of the service, supervision, client's experience and professionalism.

In addition, it has been concluded by studies of DeAngelo (1981) and Palmrose (1988), which the extent of quality control system on the audit firms' influences the team in performing well while providing their services. This influences the detection of material misstatements which will increase the audit service quality. Simunic (1984) developed a model in which audit fees are cross-subsidised by non-audit work: competitive pressures in the audit market might then compel auditors to discount their audit fees, so that higher non-audit profits would be associated with lower audit fees. As summarized, Simunic (1984) suggests that auditors will be able to charge higher fees, as an outcome to high level of service quality. On the other hand, Asare, Cohen and Trompeter, (2005) stated that high service quality will increase firm reputation and

increase client valuation (satisfaction) on the firm. Thus, the basis of the theoretical framework in this research is DeAngelo's (1981) quality theory being applied on non-audit services while DeAngelo (1981) used this model in audit service.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Quality Service and Satisfaction

High service quality is believed as the driver for the success of the firm (Ismail et al. 2006). Theoretically, service quality leads to customer loyalty (Lewis, 1994), and also higher profitability (Gundersen et al., 1996). Service quality is also believed to induce the satisfaction of the customers (Ismail et al., 2006).

Service quality is an important factor of customer perception because it is an antecedent to customer satisfaction (Ismail et al., 2006). Pasuraman et al. (1998) address five dimensions in assessing the service quality which are: reliability, responsiveness, assurance, empathy, and tangibles. They conclude that these five dimensions can enhance the satisfaction of customers. The dimension is believed as the customer expectation in service quality.

Zeithaml and Bitner (2003) address that customer expectations are beliefs about service delivery that function as standard or reference point against which performance is judged. Furthermore, they explained that to satisfy the customers, it is essential to know what customer expects. Then, the expectation can be matched to the service quality dimensions. Bolton and Drew (1991), and Sohail (2003) stated that service quality has a significant relationship to customer satisfaction. Formell, Johnson, Anderson, Cha and Bryang (1996) states that the satisfaction of customer depended to the way of customer valued the quality delivery. Zeithaml and Bitner, (2000) defined that satisfied customer would remain loyal, required service more often, fewer price sensitive and shall talk favorable things about the company.

In other contexts, by using SERVQUAL model, Sewell (1997) found in medical line that patients emphasize greater importance on reliability dimension. Angelopoulou, Kangis and Babis (1998) found that quality perception in services has significant influence on customer satisfaction. It is confirmed by Manaf (2006) who concluded service quality perception has effect on customer satisfaction.

In auditing context, service quality provided by audit firms is a very important issue when signs of dissatisfaction with the service arises (Sutton, 1993; Behn, Carcello, and Hermanson, 1997). Bad service quality will raise dissatisfaction and in the end it will affect the audit firm's reputation (Fuerman, 2003). Behn et al. (1997) investigated the relationship between audit service quality and client satisfaction. They found that responsiveness, effectiveness, on-going interaction and the appropriate conduct of audit field influence the clients' satisfaction significantly. This confirmed by Gao (2003) who found that audit service quality has positive and significant relationship to clients' satisfaction.

According to Formell et al. (1996), customer satisfaction is comprehended as quality. It means that customer satisfaction depends on the way they value the quality delivery. This was later confirmed by Cronin, Brady and Hult, (2000). It was addressed that there is a significant

relationship between service quality and satisfaction. In Malaysia context, Ismail et al. (2006), as one of their findings, found there is partial relationship between service quality and satisfaction on 115 public listed companies. Therefore, this research hypothesizes that:

- H1: Service quality has a significant relationship with satisfaction.
- H1a: Tangibility has a significant relationship with satisfaction
- H1b: Assurance has a significant relationship with satisfaction
- H1c: Responsiveness has a significant relationship with satisfaction
- H1d: Reliability has a significant relationship with satisfaction
- H1e: Empathy has a significant relationship with satisfaction

Service Quality and Level of Non-audit Fees Paid

In common sense, people tend to pay higher as they perceive and receive good quality in service. Classic works of DeAngelo (1981) and Palmrose (1986) have stated that clients are willing to pay high amount of fees in order to receive a high quality of service. Moreover, when buyers cannot observe product quality prior to the purchase, the reputation of the seller provides a mechanism that signals superior quality (Riley, 2001). If this preposition is applied in auditing, company will pay different level of assurance and non-audit fee according to the audit firm reputation.

Technical capability of auditors is assumed to be the same (refer to ISQC). Therefore, the independence and quality of the service should be similar. Logically, by this condition, the level of fee should be also the same. However, as the inherence risk is included in the price making, the level of fee will differ from one audit firm to another audit firm (DeAngelo, 1981). Companies will pay different level of assurance services fee as the audit firm reputation signals the quality service (Riley, 2001). Carcello and Nagy (2002) found out that the firms demanding higher quality audit are willing to pay a higher fee. Meanwhile, Niemi (2004) found firms tend to pay higher to big audit firms as the firm perceived that big audit firms will give good quality in audit. In other words, different quality service will receive different level of fee. According to Haron and Ismail (2010), service quality given will determine the level of non-audit fees especially on taxation.

Dee, Lulseged & Nowlin (2002) found that level of non-audit service fee has significant effects on the quality service. They surmise that after engagement meeting, highly paid auditors will give better service quality than lowly paid auditors. This is in converse with the client expectation, whereas client will use the same auditor and pay higher for the next subsequent year if they receive good quality service. Lim and Tan (2007) also found that quality service has significant effects on level of fee. They address further that reputation, litigation exposure, and industry specialization are the factors in determining the level of fee.

This research used SERVQUAL dimensions' of Parasuraman et al. (1990). It will relate the dimensions on SERVQUAL (Tangible, Reliability, Responsiveness, Assurance, and Empathy) to the level of non-audit fees. According to Zeithaml and Bitner (2000), it is very obvious that only customers who are satisfied will remain loyal, requiring the service more often. DeAngelo (1981) and Palmrose (1986) stated that the satisfaction in higher service quality will bring clients to pay high fees. In US context, Defond, Raghunandan, and Subramanyam (2002) found that there is partial relationship between service quality and level of fees. It is confirmed by

Lim and Tan (2007) which found the relationship between service quality and level of fees in Singapore.

In Malaysia context, the relationship between service quality and non-audit fees is rarely investigated. Thus, there is research conducted by Che (2008) investigating the link between service quality and level of non-audit fees. She concluded that there is relationship between service quality and level of non-audit fees after examined 103 SMEs companies in Malaysia. Therefore, this research hypothesizes that:

- H2: The higher the service quality, the higher the level of non-audit fees paid
- H2a: The higher the tangible, the higher the level of non-audit fees paid
- H2b: The higher the assurance, the higher the level of non-audit fees paid
- H2c: The higher the responsiveness, the higher the level of non-audit fees paid
- H2d: The higher the reliability, the higher the level of non-audit fees paid
- H2e: The higher the empathy, the higher the level of non-audit fees paid

METHODOLOGY

Exploratory study seems to be the most appropriate research design to be used for this study. This is due to the absence of information and also very few previous researches on the service quality of non-audit service. More information or knowledge in the field of interest is expected to be gathered by using the exploratory studies. This indeed will be helpful in developing a theoretical framework and hypothesis. In general, the purpose of this study is to analyze and assess the quality of non-audit services. It will be based on the confirmation/ disconfirmation paradigm. Besides this, we also can determine whether the quality of non-audit has convincing and positive effect on the level of fees paid to comply with the clients' satisfaction.

The perception of SMEs on the quality of non-audit services by their service provider is the main concern of this study. As a result, SMEs is the unit of analysis in this study. Since it only focuses on SME organizations as the end users of the non-audit services, this study is cross-sectional in nature.

The population of this study consists of clients who have received NAS from service providers that are the audit firms and non-audit firms. NAS in this study includes secretarial practice, taxation, consultation and internal audit. The samples or respondents selected for the study are SMEs that received NAS from SMPs only excluding the Big 4 firms.

This research used primary data obtained from the questionnaires which were sent to SMEs and used the convenience sampling method in collecting data. A total of 450 questionnaires were distributed to the respondents.

Three types of variables used in this study comprises of independent variable referring to service quality of NAS, mediating is client satisfaction and dependent variable focus to level of fees. Firstly, independent variable measures the service quality through five dimensions which are tangible, assurance, responsiveness, reliability and empathy. The service quality variables in this research are similar to SERVQUAL model used in Ismail et al. (2006). Secondly, the satisfaction about the NAS provided by small and medium practitioners (SMPs).

The service quality and satisfaction are measured using the rate on a scale of 1 (strongly disagree) to 5 (strongly agree) their agreement with regards to statements on provided. On the other hand, the level of non-audit fees paid is measured by requested the SMEs to choose the average range amount of fees that have paid for the NAS over the past 3 years to SMP on the 5-items likert scale range, from 1 to 5. 1 for "less than RM1,000", 2 for "RM1,000-RM3,000", 3 for "RM3001-RM5000", 4 for "RM5001-RM10,000" and 5 is "More than RM10,000".

RESULTS

A total 106 questionnaires which had been collected and can be used for data analysis. The demographic profile showed that 41 or 38.6% respondents are in the Account Executive category. Meanwhile, 34% of the respondents are Managing Directors and 20.8% of the respondents are Account Managers and the remaining are Financial Controllers. Based on this profiling, we can summarize that most of the respondents are from middle and top management.

Regarding the age of respondents, 40 of the respondents are around the age of 36 to 45 years (37.7%) followed by 26 to 35 (33%) years old Only about 5 % was above 55 years. A crosstab of positions in SMEs and age showed that most of the respondents are in the middle-top management and in the range of 36-45 years old. It was also found that most of the respondents are having 4 to 10 years of experience (51.9%). Only 13 or 12.3% respondents are having more than 16 years of experiences. Meanwhile, the education background of the respondents is Bachelor Degree (40.6%) followed by Diploma (25.6%) and only 0.9% or 1 of the respondents is a PhD holder. Total of 8 respondents or 7.5% have professional qualification such as ACCA and MICPA. On the other hand, majority of the respondents (46%) are in the Service Industry, followed by trading companies (27.4%) and manufacturing industry (16%). Manufacturing-related industry (7.5%) and agriculture industry with 2.9%.

The factor analysis and reliability test were performed to examine validate and reliability of the constructs. All the variables in study fulfill the requirement of goodness of measurement. Table 1 provides the descriptive statistic for all variables. The mean values ranges from 3.29 for responsiveness to 4.05 for empathy. Thus, the relatively lowest standard deviation (0.39) was non-audit fees and Responsiveness as the highest one (0.83).

Table 1: Descriptive statistics

Variables	Mean	Std. deviation
Tangible	3.7075	.82770
Assurance	3.9472	.54462
Responsiveness	3.2948	.83295
Reliability	3.6981	.65509
Empathy	4.0528	.67742
Satisfaction	3.3703	.77015
Non Audit Fees	3.5360	.39490

The Relationship between Service Quality and Satisfaction

The section to test the Hypothesis 1, H1: Service quality has a significant relationship with satisfaction. Table 2 showed regression analysis between independent and dependent variable. The model is significant with R square 0.524, Adjusted R square 0.500, and F Value 22.032 ($p < 0.001$). This implies that in model, the coefficient of determination (R square) was found to be 52.4 percent of the level of client satisfaction is explained by quality of service. The result showed that the Service Quality dimension such as Tangible ($\beta = 0.322$; $p < 0.001$), Assurance ($\beta = 0.177$; $p < 0.05$), Responsiveness ($\beta = 0.318$; $p < 0.001$), and Reliability ($\beta = 0.232$; $p < 0.001$) were found have a positive influence on client satisfaction. However, empathy was found no relationship with client satisfaction ($\beta = -0.034$; $p > 0.05$). In summary, only H1a, H1b, H1c, and H1d were accepted while H1e was rejected

Table 2 has surmised that SMPs has to emphasize on the responsiveness and tangible of service quality to induce the satisfaction level of its clients. As depicted by the result, the clients will have higher satisfaction level, if the quality delivery has higher quality in tangibility and responsiveness.

Table 2: Relationship between service quality and satisfaction

	Standardized coefficients (β)
Tangible	.322***
Assurance	.177*
Responsiveness	.318***
Reliability	.232**
Empathy	-.034
R ²	.524
Adjusted R ²	.500
F	22.032

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The Relationship between Service Quality and Level of Non-audit Fees

Hypothesis 2 assesses the relationship of service quality and level of non-audit fee. Table 3 suggests that the model between quality of service and fees is significant ($F = 62.578$; $p < 0.001$). However, the model explained 75.8 per cent of the variation in fees paid. Assurance ($\beta = 0.383$; $p < 0.001$), responsibility ($\beta = 0.516$; $p < 0.001$) and reliability ($\beta = 0.139$; $p < 0.001$) are significantly related with level of fees paid. On other hand, tangible ($\beta = -0.010$; $p > 0.05$) and empathy ($\beta = 0.010$; $p > 0.05$), are not significantly related. Thus, only H2b, H2c and H2d were accepted while H2a and H2e were rejected.

It indicates that there are two constructs that have effect on the fee paid, which are: Assurance and Responsiveness in service quality. Therefore, this research concludes that SMEs give more attention on the service quality in Responsiveness and Assurance in term of level of Fee. They do not give attention on the tangible or Empathy.

Table 3: Relationship between Service Quality and Level of Non-Audit Fees

	Standardized coefficients (β)
Tangible	-.010
Assurance	.383***
Responsiveness	.516***
Reliability	.139*
Empathy	.010
R ²	.758
Adjusted R ²	.746
F	62.578

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DISCUSSION AND CONCLUSION

The Relationship between Service Quality and Satisfaction

There is a relationship between service quality and satisfaction but unfortunately only four from five dimensions is significant. Statistically, it showed that Tangible ($\beta=0.322$) and Responsiveness ($\beta=0.318$) have a significant relationship to satisfaction at 0.001 significant level. It also depicted that Assurance ($\beta=0.177$) of service quality has a significant effect on satisfaction at 0.05 significant level. Furthermore, it also shows that Reliability ($\beta=0.232$) has a significant relationship to satisfaction at 0.01 significant level. Parasuraman et al.'s (1991) addressed that Reliability was ranked as the most important service quality dimension followed by Assurance, with Tangible being the least important dimension in service firms. This differs from the research result. This research suggests that Tangible and Responsiveness are the most important factor in service quality, followed by Reliability and the least important dimension is Assurance. Empathy was not found to have any significant relationship with satisfaction.

The high significance of Tangible and Responsiveness dimensions suggest that SMEs are more concerned about tangibility which implies anything that the client see and hear will affect their perception includes physical facilities, equipment and appearance of firm members. Responsiveness reflects how SMPs quickly responds to the issues in SMEs. For SMEs, the responsiveness into the issue that can be tackled is more important compared to Reliability and Assurance. This finding enhances Ting's (2004) study which found that SMPs need to be quick to respond to new demands and needs of their customers in order to sustain the business. Furthermore, SMEs measure the "efficiency" of SMPs based on the responsiveness as evidenced in Fong's (1990) study.

The findings of this research contradict with Ismail et al.'s (2006) findings. They found that listed companies in Malaysia expect audit firms to perform the services accurately. In other words, big companies are more concerned about the Reliability and Assurance dimensions. Tangible dimension are not given concern by large companies. To large companies, the appearance of audit firm's physical infrastructure is not that important when delivering the audit task as they are already well equipped and using the latest technology (Ismail et al., 2006). Therefore, the Tangible dimension will not affect the satisfaction of a large company.

Meanwhile, we can see in the profile of SMEs, this research result is in line with the characteristic. The size of SMEs in term of employees is very small (only in the range of 5-19 employees) and most of it have an average turnover of less than RM1 million. It indicates that SMEs have issues relating to human resource and difficulties in accessing information. This explains why SMEs need responsiveness and good tangibility from SMPs.

However, in the end, the conclusion is still the same. The result still confirms the previous research such as Bolton and Drew (1991), and Boulding et al. (1993), Formell et al. (1996), and Sohail's (2003) whereby the service quality has significant relationship to satisfaction. Depending on the companies' sizes, whether big or small medium, they have different needs in service quality regards to satisfaction. In accounting context, the result is in line with Behn et al. (1997) where they found that responsiveness, effectiveness, on-going interaction and the appropriate conduct of audit field influences the clients' satisfaction significantly. This research also confirms Gao's (2003) who found that audit service quality has positive and significant relationship to clients' satisfaction.

The Relationship between Service Quality and Level of Non-audit Fees

Service quality has a significant relationship to the level of fee. However, not all the dimension of service quality has the significant result. It is only Assurance, Responsiveness, and Reliability that have significant relationship to the level of fee. Assurance and Responsiveness have significant effect on level of fee at 0.001 significant level. Meanwhile, Reliability of service quality has the significant effect on 0.05 significant level. Tangible and Empathy are the dimension on service quality that do not have significant relationship to level of fee. Furthermore, the big R square indicates that the model is acceptable; therefore the relationship is reliable to be explained.

In the context of service quality, customers are willing to pay a higher fee if they perceive and also have received a good quality service. DeAngelo's (1981) and Palmrose's (1986) addressed that clients are willing to pay high amount of fees in order to receive a high quality of service and this research result confirms this theory.

This research also found that the Assurance dimension on service quality has effect on the level of fee. The constructs in this dimension are about the skill and technical ability of the SMPs. It implies that SMEs will pay different level of fee if the SMPs are able to show good skills and technical ability, trustworthiness, politeness, adequate knowledge and good technique of. This is in line with Niemi's (2004). This result indicates the Assurance on service quality can induce the level of fee.

Indeed, International Standard of Quality Control (ISQC) addressed that the technical skill of auditors should be the same and the quality of the service should be similar. Logically, in this condition, the level of fee should be also the same as the SMEs will receive the same value of quality. However, as the inherence risk is included in the price making, the level of fee will differ from one audit firm to another audit firm (DeAngelo, 1981). Riley's (2001) addressed that companies will pay differently for the level of assurance services as the audit firms' reputation signals the quality service. It implies that level of fee will depend on the reputation as it signals the quality service.

Furthermore, Niemi's (2004) found that firms tend to pay higher to big audit firms as the firms perceived that big audit firms delivers good quality in audit. It implies that the level of fee will depend on the service quality that will be given by the audit firm (in this research, it will be non-audit firm). Again, as mentioned earlier, this research also found the same conclusion with prior research as Niemi (2004) where the assurance on service quality can induce the level of fee as SMEs will overview and evaluate the skill and knowledge of SMPs.

SMEs can evaluate and view the assurance of SMPs during the engagement meeting. Usually, in this meeting, SMEs will give a brief view about organizational issues and this will give SMPs a chance to exhibit their ability by answering to the issues. This will make the SMEs perceived of the SMPs ability. Thereby, SMEs will not take into much consideration to pay the SMPs a higher fee as they believe that the SMPs can solve the non-audit issue in the organization. This is in line with Dee et al. (2002) in which they found that the level of non-audit service fee has significant effects on the quality service. They surmise that after the engagement meeting, highly paid auditors tend to provide better service quality than lower paid auditors. This is conversed with the client expectation where if they receive good quality service, they will use the same auditor and pay a higher fee for the next subsequent year.

Lim and Tan's (2007) also found out that quality service has significant effects on level of fee. They addressed further that reputation, litigation exposure, and industry specialization are the factors in determining the level of fee. Fong's (1990) study addressed that SMPs can deliver products that meet the needs at prices which commensurate with SMEs' ability to pay. The result of the research confirms the previous research of Lim and Tan (2007) and Fong (1990). The Responsiveness dimension on service quality also has effects on level of fee. The constructs in this dimension are about timeline, prompt service, quick evaluation, and promptness in helping the client. It implies that the responsiveness of SMPs on their non-audit task will make SMEs willing to pay higher fee. This is in-line with Kotler and Keller's (2006) which stated that if clients are satisfied with the service, they would not mind paying at any price.

The SMPs will have their own level of responsiveness. It depends on three issues: their reputation concerns, litigation exposure, and knowledge spillovers. Most research has proved that the responsiveness in service quality depends on these three issues. Benston's (1975) showed the reputation concerns will determine responsiveness of quality. Shu's (2000) stated that the litigation exposure will push audit firm to optimize their service. Lastly, Simunic's (1984) addressed that the knowledge spillover will drive the audit firm to better quality service. These three drivers must be sufficient to induce the responsiveness in service quality. Defond et al. (2002) also use this argument to interpret the relationship between non-audit fee and audit quality. Furthermore, the responsiveness of service quality will also show the lucrative of NAS (Pany & Rekers, 1983; Che, 2008). Ziethaml, Parasuraman, and Berry's (1990) studies have defined responsiveness as willingness to help client and provide prompt service. Its stresses on service personnel's attitude to be attentive to customer requests questions and complaints. Meanwhile, they defined Tangible as the service dimension that focuses on the elements that represent the service physically. In regard of non-audit fee, the attitude of SMPs personnel in tackling clients' and complaint has been proven to be able to induce the non-audit fees. It means that SMPs have to emphasize on the tangible of quality delivery to achieve higher non-audit fees. Furthermore, it has been proven that direct contact between SMPs and their clients can induce the non-audit fees.

Therefore, this research can surmise that SMEs does not pay much interest to the procedures used by the SMPs and range of fees charged by the auditors. The result were opposite from DeAngelo’s (1981) where she indicated there is a control on services given, either before service process or during the process. Therefore, SMEs will perceive this responsiveness as the caring and involvement of SMPs in their organization. This perception drives SMEs to willingly pay a higher fee.

Additionally, reliability also has significant relationship on level of fee at a significant level of 5%. The construct of reliability dimensions is: “The firms (SMPs) delivers the services within certain time frame as promised”. In this context, reliability implies that SMPs are able to finish and fulfill the service as they promised in the engagement meeting. Even though the relationship is very small, SMEs still will consider their fee and whether the SMPs can be reliable on the given services. In other words, SMEs perceive trustworthiness and knowledgeable from reliability. If SMPs are able to offer reliability of service quality during the engagement, SMEs will be willing to pay a higher fee without much consideration. This is in line with Riley’s (2001) which stated that when buyers cannot observe product quality prior to the purchase, the reputation of the seller provides a mechanism that signals superior quality.

IMPLICATIONS OF RESEARCH

The levels of satisfaction and non-audit fees were determined from the service quality given. From the results it shows that SMPs can increase the satisfaction and level of fee by providing good service quality in certain dimension. In term of satisfaction, SMPs can enhance their service quality in Tangible and Responsiveness. They also can induce their Reliability and Assurance of service quality to satisfy SMEs as it has small significant level. SMPs might not waste their resource by emphasizing on Empathy of service quality as it does not have significant relationship to SMEs satisfaction. In other words, this research implies that SMPs can stress on Tangible and Responsiveness, Reliability and Assurance to satisfy the SMEs.

SMPs have to make sure the firm members are well dress, neat and are polite to the clients. Besides that, SMPs also have to educate the staff so that they are more knowledgeable and well equipped with the latest updates and are able to answer questions which arise from the clients. Most importantly, SMPs have to be assured that the firm members being perform their task with professionalism. Apart from that, SMPs also must provide prompt services, exhibit willingness to assists their clients, delivers the services within the time frame as promised and performing service dependably and accurately as promised.

In terms of level of fee, SMPs can emphasize on the Assurance and Responsiveness of service quality to achieve better fees. If SMPs have extra resources, they can also enhance their reliability of service quality as it has small significant level. SMPs do not have to waste time and resource on Tangible and Empathy of service quality as it has no significant relationship to level of fees. In other words, this research gives shed of light for SMPs regarding enhancing the non-audit fee services.

In the end, SMPs has to induce certain part of their service quality to enhance the satisfaction as it can induce the level of non-audit fees. SMPs might increase the level of non-audit fees, if

SMPs emphasize in certain dimension of service quality. This is in line with quality theory of DeAngelo's (1981).

LIMITATION OF STUDY AND SUGGESTION FOR RESEARCH

As in most studies, this study has its own limitations. Firstly, the small sample size of the study. If able to collect larger number of respondents with different industries, the level of accuracy will be higher for this study. Secondly, the profile of respondent is not varying proportionally. The study may not be reflecting to all the industries because most of the respondents are from services industry.

Future studies should have a better sample size where it consists of all types of industries as different industries have different needs. Furthermore, future research, it would be useful to investigate the relationship between quality control and service quality from auditors' perspective. The reason is because the auditor knows best about their control. As this research addresses that SMPs have to pay attention to their certain dimension of service quality, SMPs also have to identify how their quality control can induce this dimension of service quality. Furthermore, SMPs can also induce their quality control for better satisfaction of SMEs

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INVESTIGATION OF TECHNOLOGY MANAGEMENT PROCESS IMPLEMENTATION IN SMEs IN KLANG VALLEY

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ABSTRACT

SMEs uses various process and methods to manage its technology management process. This study demonstrate a survery of SMEs in Klang Valley that shows how companies identify, monitor and asses process and methods of its technology management process in the category of technology, economic, customer needs and competitors.

Keywords: Technology management, SME

INTRODUCTION

Small and Medium Enterprises (SMEs) are the backbone of the country, comprising 97.3% of total business establishment in Malaysia. In 2015, SMEs contributed 36.3% to GDP valued at RM385.6 billion from slightly below 30% in 2005, while contribution of SMEs to employment rose to 65.5% (2005: 56.8%) and SMEs export rose to 17.6% (2010: 16.4%). Innovation and technology adoption is closely linked to the performance of SMEs and the ability to innovate and adopt technological changes is a crucial factor determining the growth of the business. Technically, SMEs have the advantage to respond and adapt more quickly to the latest business mode and technological changes due to small scale of their operations. In many advanced countries, new innovations and ideas come from small businesses.

Technology is a resource that, like financial and human resources is pervasively important in organisations. Managing technology is a basic business function. Recognizing the critical role of SMEs in Malaysia, technological advancement can change the competitive standing of SME in short and long term. As a result, technology management is viewed as a drivers for business growth and effects on business operations. In order to enhance the quality of

products and services as well as cultivate a strong business reputation, SMEs must keep up-to-date with the latest technologies. No matter the size of SME, technology has both tangible and intangible benefits that will help company profitable and sustainable.

However, the well-known main factor constraining SMEs from innovating and adopting new technology is the high cost involved. This implies the need to develop a technology strategy, analogous to financial and human resource strategies. Technology strategy serves as the basis for fundamental business strategy decision to establish the necessary technological capabilities and maintain competitive advantage. It is a function of quantity and quality of technical capabilities and competences. Strategy making concerning technology can be conceptualized as an evolutionary organisational learning process. Experience obtained from enacting technology strategy feeds back to technical capabilities and technology strategy.

PROBLEM STATEMENT

As SMEs in Malaysia face increasing challenges and competition as the result of globalization, it is apparent that they need to upgrade their technological capabilities. Technology provides SMEs with the opportunity to increase their efficiency and productivity with tools to better manage their business. Successful SMEs are those who innovate by adopting technologies that give them a market competitive edge (Tidd and Bessant, 2010). SMEs that innovate show growth and sustainable performance compared to those whose not. Despite concerted efforts by the government to promote technology adoption among SMEs in Malaysia, there is no clear indicator of its success. For example, a study done in 2012 on exploring the common technology adoption enablers among Malaysian SMEs found low level of technology adoption. (Nor H. A., Eta W. & Alina S., 2012) Similarly, recent studies on specific technologies such as ICT, internet and ecommerce (Hashim, J., 2007) also showed low adoption. Furthermore, in terms of R&D activities, SMEs are still lagging behind.

Technology has been recognized as one of strategic resources for sustaining competitiveness among firms regardless of their sizes. Challenges in globalizations and strategic alliances are some of the issues underpinning technology management among SMEs. However, existing models (Davis, F. D., 1989) on technology development, innovation and aquisition have not provided sufficient insights on factors that could influence the successful technology management among SMEs in Malaysia. Varying levels of technology and high industrial diversity hinder comprehensive understanding on common factors affecting technology management. Furthermore, the uniqueness of SMEs characteristics especially in terms of pervasive influence of SMEs' owner-managers may hinder the success of technology management within the enterprise.

The issues and challenges of SMEs in Malaysia are poor technology adoption by SMEs; limited technical competencies of employees; problems in compliance to regulations; lack of needs-driven R&D; high dependence on foreign labour as well as imported products; low level of awareness of outreach programmes for technological innovation; and inadequate linkages and collaboration among public research institutions and universities in providing technological services to SMEs.

SURVEY ON THE PROCESS AND METHODS OF SME TECHNOLOGY MANAGEMENT PROCESS

SMEs implement various processes and methods to manage its technology management process. Typical technology management processes are foresight, planning, development and commercialization. Good companies manage their technology management process regularly by making sure all information are documented to prevent loss of important information and to enables tracking of the progress of company activities. SMEs can use various methods to support the different technology management process.

Methods are used for evaluation and assessment of technologies to support decision making in the technology management process. Typical methods include pre-selecting relevant technologies, initiating development of technologies in specific projects or company's technical department, portfolio or cost benefit analysis, etc. These methods are also used to identify, monitor and assess the trends, customer needs and competitors.

A survey from 15 SMEs in Klang Valley was conducted to investigate how these companies identify, monitor and assess process and methods of its technology management process in the category of technology, economic, customer needs and competitors. Three levels are being used; unstructured, structured and well-structured. Unstructured level denotes that the company identifies their technology management process and method in an informal way, in which no information is documented.

Structured level denotes that there are specific persons in charge in the company and all information are documented. Whereas, the well-structured level denotes that all information are documented, delegated to relevant personnel in the company and the processes are carried out regularly.

Figure 1 depicted the statistic results of how SMEs manage its technology management process and methods. Referring to Figure 1, there are only 3 to 4 companies from 15 companies of which are well structured in term of managing their technology management process for all categories.

In term of technology, 8 companies manage unstructurely. This is quite obvious in SMEs since most SMEs did not have their own R&D department. The most common management practices in SMEs tend to focus on the company owner's skills at the first place. The results also show that 8 companies tend to have their customers' needs in a structured way. This may result from the company's obligation to understand their customers' needs. In the economic and competitors categories, the result shows similar emphasis of the companis in managing its technology management process.

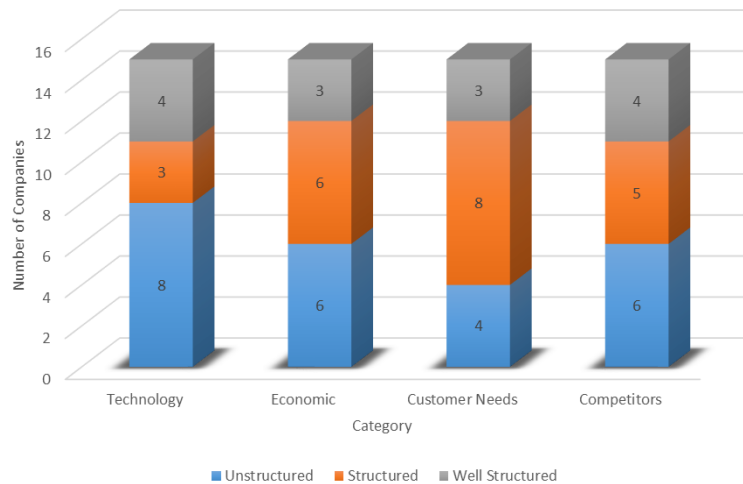


Figure 1: Category of how SMEs manage its technology management process and methods

CONCLUSION

To conclude how SMEs manage its technology management process differs from one another. Anyhow, in term of technology, SMEs need to improve. SMEs in developed country in contrast usually have strength in the area of technology and most SMEs in those country start their business from invention or innovation of technology. SMEs needs to have technology management process structurely in place. Technology management progress implemented in SMEs should be progressively monitored to ensure the effectiveness and impact of technology to the company's sustainability and growth.

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EVALUATING ZAKAT INSTITUTIONS PERFORMANCE IN MALAYSIA

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ABSTRACT

This paper aims to evaluate the performance of zakat institutions in Malaysia in order to identify our need to develop its management systems. The development of zakat management institutions in Malaysia should be in line with the development of other sectors in the country. Changes that occurred in the administration in different institutions requires the Department of Zakat and religious councils to be more aware to face this changes and achieve the goals it has taken upon itself, such as product high quality Services , gain a wider audience of Zakat payers and meet needs of a larger number of poor and needy, At a time when poverty became one of the biggest problems facing societies. When we guide zakat institutions to adopt alternative mechanisms or advanced in the administration, we in fact pay it to confront the inadequacies problems dogging the current administrations in the performance of work which impedes economic and social development in the community in Malaysia.

Keywords: Zakat institutions , Poverty , Zakat information system , Development

INTRODUCTION

Development has become a key of feature of in order to Horn basic requirements by human beings , to avoid the shortcomings of all existing, including saving time, effort and money . If we touched sophisticated and clear in most of the state institutions and all sectors in line with the modern systems, we must pause with zakat institutions in Malaysia in order to monitor the administrative developments over the past years have taken place where the tracking deficiencies in the current regulations in an effort to fill the gaps .Where and when we are talking about zakat, we are talking about the duty of the ordinances of God Almighty worship God Almighty stipulated in the verses of The Holy Quran and Hadith to ensure salvation in this world and the hereafter

Here we are talking about working with God Almighty, therefore it must consider it as a right business and put the best we have to improve , develop and organize it . God Almighty taught us how to perform this act and how to calculate it , How we do it correctly according to divine law . But the existence of legal provisions relating to zakat does not mean that zakat institutions

are scalable. It can create and improve management to be in line with the nature of every age and every society, such as the use of technology or modern management systems. Zakat Foundation is one of the organizations that carry out acts of public services, especially poor and needy, Zakat institutions is seeking to win the confidence of the public, exposed afterwards to evaluate from Muslim's community . So that zakat institutions management have to discover new initiatives to meet the challenges and ailments of society, to achieve the level of professionalism, as a comparable to the rest of nonprofit organizations and also to achieve transparency and accountability in all the daily affairs zakat institutions in Malaysia.

The Malaysian Constitution has listed zakat under the state authority. This provision is in line with the basic concept accepted by the Malaysian Constitution in which all religious affairs should be put under the various state authorities. The Malay rulers (Sultan) or Yang Dipertuan Agong as Head of Religion have religious authority in their respective states. Each state in Malaysia has formed its own Islamic Administrative law that is in line with the constitutional provision to execute its authority over religious matters. Normally provision related to zakat is part of the law.

Table 1: Islamic administrative law for Malaysia's state

States	MAIN and ZI
Kelantan	Majlis Agama Islam dan Adat Istiadat Melayu
Terengganu	Majlis Agama Islam dan Adat Istiadat Melayu Terengganu
Pahang	Majlis Ugama Islam dan Adat Resam Melayu Pahang Pusat Kutipan Zakat
Perlis	Majlis Agama Islam dan Adat Istiadat Melayu
Johor	Majlis Agama Islam Negeri Johor
Kedah	Majlis Agama Islam Negeri Kedah Jabatan Zakat Kedah
Selangor	Majlis Agama Islam Selangor Lembaga Zakat Selangor
Perak	Majlis Agama Islam dan Adat Istiadat Melayu
Negeri Sembilan	Majlis Agama Islam Negeri Sembilan Pusat Zakat Negeri Sembilan
Melaka	Majlis Agama Islam Melaka Pusat Zakat Melaka
Penang	Majlis Agama Islam Negeri Pulau Pinang Pusat Urus Zakat Pulau Pinang
Wilayah Persekutuan	Majlis Agama Islam Wilayah Persekutuan Pusat Pungutan Zakat
Sabah	Majlis Agama Islam Sabah Pusat Zakat Sabah
Sarawak	Jabatan Agama Islam Sarawak Tabung Baitulmal Sarawak

HISTORY OF ZAKAT ADMINISTRATION IN MALAYSIA

Zakat institutions in Malaysia particularly has been established for the past 70 years, Zakat management has to present its actual true potential until early 90's when steps were taken to improve and modernize zakat management and system.

All this while, Islamic Religious Councils has been concentrating on zakat fitr and zakat on agriculture (paddy). Thus, serious consideration on the true potential of zakat of property is not given proper emphasis. The notable cause for this is because the economy of Muslim / Malay community has yet to reach the level that could enable them to pay zakat. However, today, majority of Muslim community in Malaysia is qualified to pay various types of zakat.

Understanding of zakat among Muslims in Malaysia were still in low level, which can be divided into two categories: i) Those who are totally unaware / ignorant of their obligation and do not make any effort to know about their duties on zakat, this category of people would only pay when legal action is taken against them; ii) Those who know about their obligation but reluctant to pay zakat until they are informed and clarified.

Zakat institution in Malaysia previously was left behind in terms of its management and implementation. Collection and distribution system implemented by the authority concerned was still at the backward state that caused its true potential to be hidden for a long time. This is a big loss as the collection/return could have been invested in socio-economic development of Muslim community in Malaysia

MODERNIZATION IN MANAGEMENT OF ZAKAT IN MALAYSIA

Zakat management and administration in Malaysia took a giant innovative step when the Federal Territories Islamic Religious Council agreed to a proposal forwarded in 1990 by an ex-Menteri Besar of Pahang state, namely Dato' Haji Abdul Rahim Bakar, that the zakat collection in Federal Territories be made a model using corporate management principles

After a study was done by a consulting firm, the Religious Council agreed to the recommendation of a task force for the setting up of a new office to collect zakat on behalf of the Islamic Religious Council. The new approach includes the incorporation of a new management and administration of zakat collection system by setting up a company under the Islamic Religious Council to separate it from the rest of the administration of Islamic affairs which is very diverse. A new office was set up called "Pusat Pungutan Zakat" (PPZ) or Zakat Collection Centre. The company called "Hartasuci Sdn. Bhd." manages PPZ and handles all matters pertaining to the collection of zakat on behalf of the Religious Council.

PPZ is the zakat office of Federal Territories Islamic Religious Council which started operation on 1st January 1991. PPZ has been receiving payments from Muslims and corporations throughout the country because it is the most systematic and the pioneer of using corporate methods and style of management of zakat collection. All costs of collecting zakat were borne by the company and the Council pays the company management fees monthly as an *amil*. Zakat collection and the administration of PPZ was computerized which is believed to be the first in the world. On-line zakat counters were specifically opened to serve the zakat payers.

PROBLEMS FACING ZAKAT MANAGEMENT INSTITUTIONS

Given the importance of zakat to the economy and society, in country like Malaysia, zakat institutions have been set up to collect and distribute funds. They are under the control of Islamic Religious Councils (IRC) of each state. The IRC play an important role in the administration and management of zakat institutions. empirical evidence indicates that Malaysia's zakat collection has been increasing from year to year and the means of the distribution of zakat has become a model for other Muslim countries (Wahid & Kader, 2010) Collection and distribution of zakat nationwide in Malaysia is increasing from year to year, from 2009 until 2013. It collect through declarations by zakat institutions. Number of zakat collection and statistics on all states in Malaysia can be summarized in Table 2.

Table 2: Zakat collection and statistics on all states in Malaysia

No.	States	2013	2012	2011	2010	2009
1	Selangor	517,305,275 .00	451,325,027 .00	394,103,904 .00	336,934,522 .00	283,648,722 .00
2	Wilayah Persekutu an	484,632,029 .53	402,813,639 .88	341,330,169 .85	282,676,074 .00	243,803,789 .22
3	Johor	200,000,000 .00	171,900,000 .00	137,400,000 .00	122,336,032 .00	109,231,255 .00
4	Terengganu	121,098,064 .39	107,077,967 .25	88,274,932. 37	76,447,878. 00	73,524,193. 00
5	Kelantan	114,850.000 .00	113,000,000 .00	83,500,000. 00	70,373,329. 00	66,522,450. 31
6	Pahang	109,240,524 .24	102,875,834 .89	82,689,384. 43	74,574,869. 71	71,868,302. 65
7	Perak	109,825,143 .00	103,202,759 .00	87,419,398. 00	70,282,296. 00	67,189,291. 45
8	Kedah	123,098,353 .00	105,800,470 .00	102,000,000 .00	76,947,140. 00	67,578,342. 14
9	Pulau Pinang	80,773,499. 00	72,296,316. 00	58,215,179. 00	49,240,837. 00	47,952,153. 34
10	Negeri Sembilan	78,853,814. 12	66,258,925. 95	58,636,379. 89	51,634,018. 31	42,861,533. 52
11	Sarawak	60,000,000. 00	51,000,000. 00	44,100,000. 00	39,143,056. 00	36,915,094. 91
12	Melaka	53,000,000. 00	43,512,000. 00	37,928,000. 00	34,011,770. 00	30,721,955. 12
13	Sabah	55,000,000. 00	48,929,401. 12	33,891,152. 97	32,856,749. 96	25,388,088. 73
14	Perlis	43,191,710. 33	-	-	38,091,506. 00	25,253,015. 10

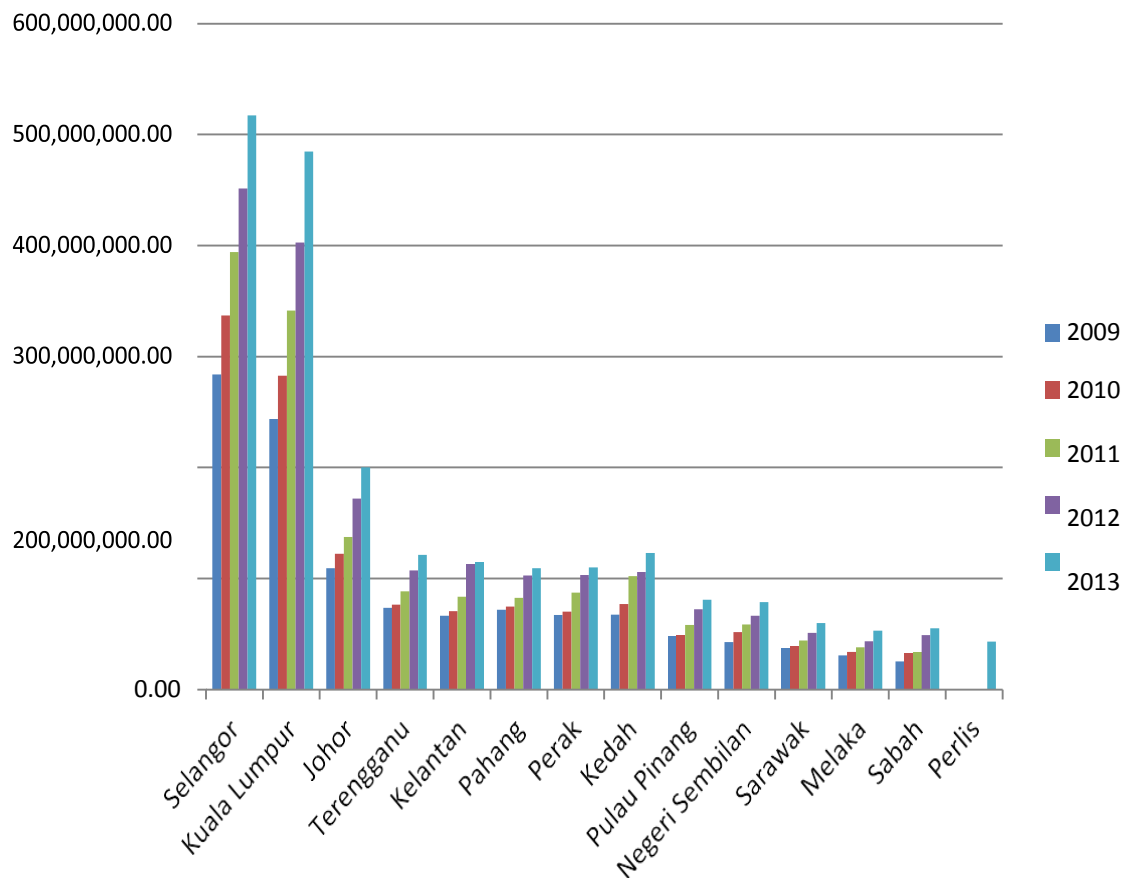


Figure 1: Statistics collection of zakat in 14 states in Malaysia from 2009 to 2013

Given the importance of zakat to the economy and society, in country like Malaysia, zakat institutions have been set up to collect and distribute funds. They are under the control of Islamic Religious Councils (IRC) of each state. Empirical evidence indicates that Malaysia's zakat collection has been increasing from year to year and the means of the distribution of zakat has become a model for other Muslim countries. Some recent studies, however, revealed many shortcomings of the zakat institutions. One of the issues pertaining to this is the surplus of millions of ringgits of zakat funds that are not distributed to the recipients. Reports on zakat collection and distribution in Malaysia showed the performance of zakat distribution is fairly low as compared to zakat collection. Table 3 summarizes the total collection and distribution of *zakat* based on states in Malaysia. On average, only 86% of *zakat* collected in 2010 were distributed in the same period. Penang and Negeri Sembilan show more than 100% distribution of *zakat*. This might occur as some amount of *zakat* collected the year before was not distributed. On the other hand, the distribution percentage of *zakat* in Sarawak, Kuala Lumpur, and Pahang was quite alarming at 61%, 71%, and 72% respectively. One of the main reasons of low percentage of *zakat* distribution is due to the practice of paying *zakat* at the end of the year. It was reported at certain states; about 50% of the *zakat* was collected in the final weeks of a year. Due to the time constraint and under staffing, these funds were not distributed in the same period. However, it is expected that these unallocated funds to be distributed to the eligible *asnafs* in the following year.

Table 3: Total collection and distribution of zakat based on states

States	Collection		Total	Distribution	%
	Zakat al-fitr	Zakat al-mal			
K. Lumpur	7,040,649	275,635,425	282,676,074	200,541,409	70.94%
Selangor	17,333,281	319,601,241	336,934,522	330,364,503	98.05%
Perlis	912,940	37,178,566	38,091,506	30,730,256	80.67%
Kedah	5,504,906	71,442,234	76,947,140	66,061,795	85.85%
Penang	3,998,526	49,240,607	53,239,133	54,352,513	102.09%
Perak	7,663,986	61,975,515	69,639,501	66,793,034	95.91%
Kelantan	7,592,424	62,780,905	70,373,329	63,909,067	90.81%
Terengganu	5,566,841	70,881,037	76,447,878	61,744,662	80.77%
Pahang	6,300,000	74,574,870	80,874,870	58,604,106	72.46%
N. Sembilan	3,771,307	46,429,815	50,201,121	51,740,273	103.07%
Johor	13,140,920	109,195,112	122,336,032	110,308,434	90.17%
Melaka	3,144,564	30,867,207	34,011,770	31,392,559	92.30%
Sabah	7,188,953	25,667,797	32,856,750	26,021,789	79.20%
Sarawak	3,272,479	35,870,576	39,143,056	23,922,812	61.12%

(Federal Territory *Zakat* Collection Centre, 2010)

Previous studies on the effectiveness of *zakat* in alleviating poverty in Malaysia have highlighted a few issues . for example, highlighted the issues of inefficiency of *zakat* distribution thus affecting the objective of combating poverty. They argued that studies found that there were bureaucracy problems in *Zakat* Institutions in Malaysia that would slow down the application process

Prior studies on *zakat* management have provided us with various useful insights about issues and challenges surrounding the management of *zakat* funds A number of recommendations including models or frameworks were proposed to improve particularly the distributions of *zakat*. Despite these suggestions, as stated earlier one of possible effects of the inefficiency of *zakat* management is the issue of surplus of *zakat* funds, which are not allocated to eligible recipients

While there are prior studies that suggest ways to overcome the inefficiency of *zakat* distribution . There is little studies, however, have been undertaken on this issue by examining the *zakat* institution's accountability system and practices. The in-depth understanding over the accountability system and practices of the *zakat* institutions may assist to identify the underlying factors that lead to inefficiency in *zakat* distribution. Through the identification, the *zakat* institutions may undertake necessary steps in improving, for example, the procedures and/or processes of *zakat* fund distribution itself.

SUGGESTIONS AND RECOMMENDATIONS

Zakat management has been argued as the most critical aspect in determining the direction of the zakat institutions as a systematic and efficient management would ensure optimization of the zakat. Generally, management of zakat has been understood to involve in two activities, which are collection and distribution of zakat funds. One main objective of zakat management is to achieve the best possible outcome in the timely collection and distribution of zakat as ordained in Islamic Shariah

Zakat management is important to help Muslims establish its primary function as a means to alleviate poverty. Moreover, the effectiveness of zakat management is important to enable zakat to be a catalyst in improving the lives of the poor and needy. A sufficient level of trust is crucial to be maintained between Muslims and zakat institutions. On the other hand, it has been argued that the zakat management should exhibit professionalism and trust to maintaining the interest of zakat recipients.

On the other hand, There are some suggestions to improve the performance of zakat institutions in Malaysia, for example, The governance of zakat institutions and the governance structure and mechanism have to offer financial and managerial accountability of zakat collection and distribution. In order to be accountable, to the public as well as to institutional stakeholders. Propose an integrated information system that could help to improve the zakat management. Inefficiency and capacity building in zakat institutions in Malaysia. The spirit to uphold Islam as a religion for all humanity spirit must be the foundation in operating the zakat institutions because it would enhance their well-being and quality of life, provides employees a sense of purpose, meaning at work, a sense of interconnectedness and community. A conceptual framework could be used to evaluate the efficiency and governance of the zakat institutions in Malaysia. such evaluations are crucial for the Islamic financial system to function effectively in order to achieve the noble objectives of socio-economic justice through proper distribution of wealth.

CONCLUSION

In summary, the Islamic accountability theoretical foundation underpins the relationship between human and one's Creator, Allah, and other mankind, The proposed Islamic accountability framework in zakat fund management and accountability relationships in the zakat fund management involve various parties such as the zakat institution (which manages the zakat fund), zakat payers and recipients

Focusing on the accountability of the zakat institution that has direct responsibility in managing zakat fund. To both zakat payers and recipients, the zakat institution in general is accountable to efficiently manage the zakat fund so that the objectives of zakat collection (from the zakat payers) and zakat distribution (to the recipients) can be achieved. Then, the accountability duty of the zakat institutions will be discharged mainly by providing explanations or accounts on how the zakat institutions are fulfilling its responsibility in managing zakat to relevant parties like the zakat payers and ultimately to Allah

ETHICAL CLIMATE, CHIEF INTEGRITY OFFICER AND LEVEL OF ETHICS AND INTEGRITY IN MALAYSIAN PUBLIC SECTOR

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ABSTRACT

This study provides an overview of the initiatives taken by the Malaysian government in mitigating a global issue of ethics and poor governance which has led to inefficiency and corruption in an organization. The government has stressed the importance of having good governance in the public sector as poor governance will lead to a loss of reputation of Malaysia and in the long run will discourage investors to the country. Studies have shown that ethical climate and existence of a Chief Integrity Officer are some of the factors that can help overcome the major challenges of achieving Vision 2020 i.e., Government Transformation Program which one of its agenda is to fight corruption. Ethical climate and Chief Integrity Officer is perceived to have a direct relationship with the level of ethics and integrity in the Malaysian public sector which consequently will increase the perception of public trust. Thus, this paper will provide some insights on the impact of these two factors on the level of ethics and integrity in the Malaysian Public Sector.

Keywords: Ethical climate, Chief integrity officer, Ethics; Integrity, Public sector

INTRODUCTION

Ethics and integrity have been demonstrated to play an important role to help propel the Malaysian's economy to a high income economy (Aziz, 1999). Many countries have reformed its public sector to meet the public demand of employee is more ethics and integrity in government. Therefore, Malaysian governments have been to implementing of various initiatives good

governance of ethics and integrity so that avoiding unethical cases and reduces bad scandal in Malaysia public sector. Ethics and integrity are two essential components of good corporate governance. Good governance refers not only to integrity, but also to efficient management of public resources and, for some commentators, to adequate public participation in decision-making. Ethics involved individual, organizations, and professional ethics. On the other hand, integrity involves individual, organizations and persons holding public office (Ismail, Haron, Ahmad, 2014). From an organizational point of view, integrity or ethical behavior refers not only to corruption or fraudulent behavior, but it lies in the quality or characteristic of an individual or how he behaves in his organization that represents the quality of acting in accordance to the moral values, standards and rules accepted by the organization's members and society (Kolthoff et al., 2010). It is also considered as a matter of coherence and consistency between organizational aims, personal values and beliefs, and individual behavior (Badaracco & Ellsworth, 1991). Therefore, it is assumed to have a direct influence on organizational actions and decisions or moral choices (Trevinyo-Rodríguez, 2007), and management has an important role in shaping the integrity of an organization (Kaptein, 2003).

There are a lot of cases of ethical scandal in Malaysia. The issue of ethics and integrity are still rampant and it is one of the important causes of organizational failure. Based on a survey conducted by KPMG Malaysia (2013), it was discovered that the highest number of fraud perpetrators came from employees, representing about 50% of fraud perpetrators which is much higher than in 2009, which was about 34%. These figures are alarming to the government and the management, as there was an increase of 16% in 2013. The second category of fraud perpetrators were customers, followed by management, each category represented about 18% respectively. Other fraud perpetrators identified were service providers (8%) and suppliers (6%). The report also highlighted that theft of outgoing funds was the highest reported category of fraud (67%) in 2013 as compared to 57% in the 2009 survey. Ranking second was theft of physical assets at 58%, followed by theft of incoming funds at 34%. On an individual basis, the most common types of fraud were theft of cash and cash receipts (26%), followed by false invoicing (16%) and theft of inventory (13%) (KPMG Malaysia, 2013). Governments and corporations as claimed by Ernst & Young (2014) agree that fraud, bribery and corruption are bad for business and society, and that decisive steps need to be taken to reduce them. Therefore, the Malaysian government has moved in a positive manner and achieved a significant economic and social progress. Sustained and rapid economic growth has transformed Malaysia from an agro-based economy into an industrialized nation. With this success story, the Malaysian government through its Economic Transformation Program (ETP) is positioning the nation to become a high-income nation by 2020 (CISM, Official Website). Thus combating corruption has been identified as one of the key challenges. Since the turn of the new millennium, The Malaysian Government has achieved some significant milestones in this long and challenging journey as shown in Table 1. To mitigate the issue of bribery, it is vital to elevate the confidence among investors by portraying a sustainable business competitive advantage yet still promote a healthy competition among businesses in Malaysia. Therefore, besides effective governance, in order to dent on corruption, corporate ethics and integrity systems should be institutionalized. Nevertheless, currently the corporate ethics and integrity framework at corporate levels are still scarce. The lack of specific and practical instrument in fighting corruption as well as controlling business misconducts will add more severity to this issue.

Concern with this alarming result, Prime Minister Directive No. 1 was issued in 2009. This directive has taken an important step to promote ethics and integrity within Malaysian public sector with the aims of combating corruption. This directive mandates an implementation of Certified Integrity Officer (CeIO) program (PM Department, 2014).

Table 1: Milestones of anti-corruption strategy

Year	Milestone
2004	Launching of the National Integrity Plan (NIP) and Establishment of Institute of Integrity Malaysia (IIM)
2008	Setting up of Malaysian Anti-Corruption Commission (MACC)
2009	Prime Minister Directive No. 1 2009 – Implementation of Certified Integrity Officer in ministries, departments and public agencies.
2010	Launching of the Government Transformation Program (National Key Results Areas – Fighting Corruption) and Economic Transformation Program. Signing of Integrity Pledge by Chamber of Commerce with Malaysian Anti-Corruption Commission (MACC), Formulation of Corporate Integrity System Malaysia (CISM) Roundtable
2011	Creation of Corporate Integrity Pledge (CIP)
2012	Publication of Best Business Practice Circular (3/2012)
2013	Appointment of Minister of Governance and Integrity
2014	Prime Minister Directive No. 1 2014 - Establishment of Integrity and Governance Committee (replacing the Prime Minister Directive No.1 2009). Publication of Corporate Integrity System Malaysia (CISM) Toolkit: From Pledge to Practice

INTEGRITY AND GOVERNANCE UNIT

On 18 August 2008, a special meeting chaired by the Malaysian Chief Secretary decided that Anti-Corruption Agency should station one of the senior officer as Chief Integrity Officer in ministries, departments and certain agencies that may have high possibilities in conducting corruption. In the following meeting chaired by Prime Minister on 22 September 2008, a new directive was given stating that the Anti-Corruption Agency may provide consultation for the agencies that intent to establish their own Chief Integrity Officer. Knowing the importance of the requirement for CIO, Malaysian Anti-Corruption Academy (MACA) through its Corporate Integrity Development Center (CIDC) has planned a special program to produce certified integrity officer (CeIO) which will be fully monitor by CIDC. CeIO is defined as an officer certified by the Lembaga Pengiktirafan Pegawai Integriti Bertauliah (LPPIB) when one fulfils seven (7) appointment requirements that are as follows (PM Department, 2014):

1. Appoint by the organization;
2. Possess high ethics and integrity;
3. Pass the filtering process by MACC / Malaysian Royal Police Department / Security Commission / Malaysian Public Administrative Department / Insolvency;
4. Officer of Management and Professional Group or equivalent;
5. More than five years working experiences and shows excellent work performance;
6. Acknowledgement or endorsement from relevant agencies (if any);
7. Successfully attended the CeIO program and being certified by LPPIB

It should be noted that an individual / officer may be appointed as a Chief Integrity Officer by LPPIB without attending the program as required; if he/she has fulfilled the requirements from (1) to (7) above and is highly acknowledged in the community due to the contribution and efforts of conducting integrity awareness-related activities, events or functions which may include the publication, community services, social status, and equivalent others as recognized by LPPIB. There are ten (10) roles of CeIO as follows (PM Department, 2014):

1. Coordinate and monitor programmed of integrity
2. Reporting about any breach of integrity
3. Coordinate the action on breaches of integrity
4. Implement a recovery program of integrity
5. Production of articles related with integrity
6. Help and support secretariat of JKTU (Jawatankuasa Tadbir Urus)
7. Advising management in term of integrity
8. Monitor of services delivery system
9. Act as a liaison officer organization to CIDC (Corporate Integrity Department Malaysia)
10. Ensuring compliance to directives/regulations of organization

The CeIO program is conducted within a period of six (6) months and is done on a part time basis. The program consists of five modules i.e. lectures, examinations, conference/workshop, field visit/case study and paperwork. These contents are revised occasionally by LPPIB for improvement. Table 2 below shows some of the modules of CeIO (MACA, 2016).

Table 2: Modules of certified integrity officer program

Component	Description
The Concept Integrity	The participants will learn the concept of integrity which emphasis on the issue of integrity and corruption, ethics good governance and corporate social responsibility. The participant will have a better understanding of Corporation Integrity Services Malaysia (CISM), National Integrity System and National Integrity Plan.
The Practice of Integrity (Enforcement of Laws, Circulars, Regulations and Directives)	This section covers laws, policies, rules and guidance that comprise the legal framework of organizations ethics and integrity system. It also includes International Law (UK Bribery Act, FCPA, etc.), International Regulation (UNCAC, etc.) and MACC Act 2009. The participants will be able to act and discover any irregularities to minimize chance of ambiguity of corruption, fraud, embezzlement and misuse of power within organization.
Ethical Compliance & Monitoring	The participants will be exposed to the auditing procedures in public and private sectors which cover the aspects of domestics' trials and private sectors, human rights and internal control. Also gain knowledge and skills in relation to the audit technique, internal investigation and the implementation of internal controls particularly in financial matters of the organizations.
Formation of Integrity Plan	This section focuses on the latest method introduced by MACC known as Corruption Risk Management (CRM) to minimize ambiguities of corruption and abuse of power in an organization. The end program, the participants are expected to complete their Organizational Integrity Plan.

However, on 3 June 2014, a new Prime Minister Directive was released replacing the Directive No. 1 2009. This new directive gives mandate of establishment of Integrity and Governance Committee in ministries and state departments. At the ministries level, Minister and Federal Chief Secretary are required to establish two committees i.e. Integrity and Governance Committee (JITU) of Ministry level and Working Committee for JITU of Ministry level. At state level, Chief Minister and State Secretary are required to establish three committees i.e. Integrity and Governance Committee (JITU) of State level, Working Committee for JITU of State level as well as Integrity and Governance Committee of Residential / District level (MACA, 2016). Prior to that, in year 2013, Circular No. 6 which requires the establishment of Integrity Unit in all government agencies was released. The unit is intended to ensure that civil servants adopt an integrity and ethical culture. This initiative will be able to restraint misconduct and violations of the code of conduct and ethics in the civil service organization. As stated in JPA (BPO)(S)215/65 jld 13 (8), the unit will act as a focal point to all matters related to integrity management based on six (6) core functions as below:

Table 3: Core function of integrity unit

Core functions	Implementation
Governance	Ensuring the best of governance implemented
Strengthening of integrity	Ensure that the acculturation, institutional and implementation of integrity within the Organization
Detection and confirmation	<ul style="list-style-type: none"> i) Detecting and verify the complaint criminal misconduct and violations of the code of conduct and ethics of the organization and ensure that appropriate actions are taken. ii) Reported criminal misconduct enforcement agencies responsible.
Management of Complaints	Receive and take action on all complaints / information on criminal misconduct and violations of the code of conduct and ethics organizations.
Compliance	Ensure compliance with the laws and regulations in force.
Disciplinary	Perform the functions of the secretariat Disciplinary Board

MACC is held responsible for conducting agencies' risk-rating to determine the appropriate model of Integrity Unit. The risk level is classified as high, medium or low. The re-rating of agencies' risk will be carried out every three (3) years or as required. All Chief Integrity Officer (CIO) in agencies are required to be a certified integrity officer (CeIO) or others requirement as recognized by LPPIB chaired by MACC (MACC, 2016). Agency Integrity Management Division (BPIA) plays the role to conduct research, along with planning, drafting and developing internal control policy and integrity institutionalization initiative for Integrity Units under ministries, state governments, departments and government agencies. This Division also coordinates and steer integrity institutionalization programs, provides advisory service and assistance in relation to integrity management to government agencies. This initiative will be able to curb criminal misconduct and violations of the code of conduct and ethics in the civil service organization (MACC, 2016). To ensure the effectiveness of the implementation of integrity unit, Chief Integrity Officer is required to submit a report to the General Secretary / Head of Department and BPIA every four months i.e. before the 15th May, September and January (MACC, 2016). To current, there are 887 integrity units existed in Malaysia.

ETHICAL CLIMATE

Victor and Cullen (1987) define ethical climate as “the shared perception of what is correct behavior, and how ethical situations should be handled in an organization”. According to Cohen (1995) ethical climate lies beneath value system. Moreover, according to Weeks and Nantel (1992), when codes are effectively communicated and understood it is likely to result in greater ethical behavior. Implementing ethical climate or ethical culture can help to resolve the issues related to unethical behavioral practices in the organization. Ethical climate or ethical culture of an organization is the shared understanding about what is correct behavior (Victor & Cullen, 1987). Similarly, Hunt et al., (1989) rephrased the ethical climate as corporate ethical value. Corporate ethical value is defined as “a composite of the individual ethical values of managers and both the formal and informal policies on ethics of the organization” (Hunt et al., 1989). Trevino’s (1986) integrationist model has proposed that organizational culture can contribute to an individual’s moral development by allowing organizational members decision-making responsibility and by encouraging role-taking opportunities. Victor and Cullen (1987) have suggested that ethical climate in organizations influences the moral conduct of their membership especially that of their boards of directors. Moore and Moore (2014) found that a good ethical climate in an organization will lead to greater employee commitment, increase productivity and higher level employee turnover. Ethical climate was found also to influence both decision making as well as behaviors in an organization (Martin & Cullen, 2006).

Meanwhile, the management professors Bart Victor and John Cullen argue that ethical climates can be classified according to the criteria members use to make moral choices and the group members refer to when making ethical determinations. Victor and Cullen identify five primary climate types which are:

1. Instrumental climate, which follow the principle of ethical egotism. Ethical egotists make decisions based on selfish interests that serve the individual and his or her immediate group and organization
2. Caring climates emphasize concern or care for others
3. Law and order climates are driven by external criteria such as professional codes of conduct
4. Rules climates are governed by the policies, rules, and procedures developed in the organization, and
5. Independence climates give members wide latitude to make their own decisions.

Prior researches suggest that one important factor that influences ethical behavior of employee is the ethical climate of the organization (Sinclair, 1993; Wimbush et al., 1997). A good ethical climate can be translated into an integrity leader with good moral values and are able to influence the employees under their supervision. Leaders act as ethics officers for their organizations, influencing the process of social learning and building positive ethical culture/climate. Healthy ethical climates are marked by zero tolerance for destructive behaviors, integrity (ethical soundness, wholeness, and consistency), concern for process as well as product, structural reinforcement, and social responsibility. Important tools for building an ethical climate include shared values, codes of ethics, and continuous ethical improvement. Moral leaders make sure that

ethics messages aren't drowned out by other messages about tasks and profits. They focus attention on ethics through frequent communication about values, mission, corporate standards, and the importance of ethical behavior. They reinforce follower learning by using rewards and punishments to regulate behavior, which makes it clear which actions are acceptable and which are not (Johnson, 2008).

CORPORATE INTEGRITY SYSTEM MODEL (CISM)

Institute of Integrity of Malaysia (IIM) has developed the measurement tool for level of corporate integrity by using Corporate Integrity Assessment Questionnaire (CIAQ). It is a tool to facilitate organizations to assess and measure their progress in making a formal and transparent commitment to ethics and integrity in the workplace. It is adapted from Dubinsky and Richter (2008-2009), Global Ethics and Integrity Benchmarks. These benchmarks reflect emerging successful organizational practices. CISM comprises of twelve (12) global Corporate Integrity System (CIS) dimensions with 214 descriptors as shown in Table 4. The following Figure 1 shows 5 levels of benchmarks to measure the level of ethics of an organization that are: (i) 100%; (ii) 75%; (iii) 25 to 75% and (iv) 0%.

Table 4: Dimensions of CISM

Dimension	Description
Vision and Goals	This dimension covers the organization's overall concept of and approach to ethics and integrity, including its formal articulation of the organization's underlying philosophy about ethical and moral conduct, and how these expectations are embedded in the organization
Leadership	Covers the responsibilities of the organization's leadership in shaping, guiding, and supporting the organization's ethics and integrity initiatives.
Infrastructure	Explores the way the organization structures or organizes its ethics and integrity function so that it can carry out its goals effectively.
Legal Compliance, Policies and Rules	This category assesses the internal framework that provides the floor for ethical behavior. It also includes compliance with the external legal framework, established by the multiple jurisdictions and legal frameworks within which the organization operates.
Organizational Culture	This dimension covers the organization's overall concept of and approach to ethics and integrity, including its formal articulation of the organization's underlying philosophy about ethical and moral conduct, and how these expectations are embedded in the organization.
Disciplinary	Assess how the organization sets and enforces its standards for ethical conduct and behaving with integrity. This category addresses rewards and punishments, incentives that promote ethical behavior, and disciplinary action taken to limit or punish unethical work conduct.
Measurement, Research and Assessment	Evaluates how ethics and integrity are measured, whether the organization undertakes research to support ethics strategies that create a culture of ethics and integrity.
Confidential Advice and Support	Describes how the organization provides confidential, neutral, professional, and independent ethics advice to employees, supervisors, managers, executives, members of governing bodies, and other stakeholders.

Table 4: Dimensions of CISM (continued)

Dimension	Description
Ethics Training and Education	Explores ethics and integrity awareness, skill-building training and education, and the integration of such training into the overall development of all employees. This category includes the provision of ethics-related training and skill building throughout the life cycle of staff members, and the degree to which these initiatives are integrated into other organization-wide training commitments.
Ethics Commination	Describes how the ethics and integrity initiative is articulated and promoted, both internally and externally. This category covers how the organization defines its stakeholders and how it gears its key messages to distinct audiences
Whistleblowing	Explores how the organization encourages individuals (both internal and external to the entity) to speak up and make reports of questionable conduct
Accountability	Mechanisms intended to ensure that governing institutions and personnel faithfully perform the duties they owe to citizens, businesses, and other stakeholders. Accountability operates by specifying the relationships between public officials’ behavior and performance on one hand, and rewards and punishments on the other. It can be thought of in three layers: between voters and politicians, between politicians and bureaucrats, and between superior and subordinate public officials (Lanyi & Azfar, 2005).

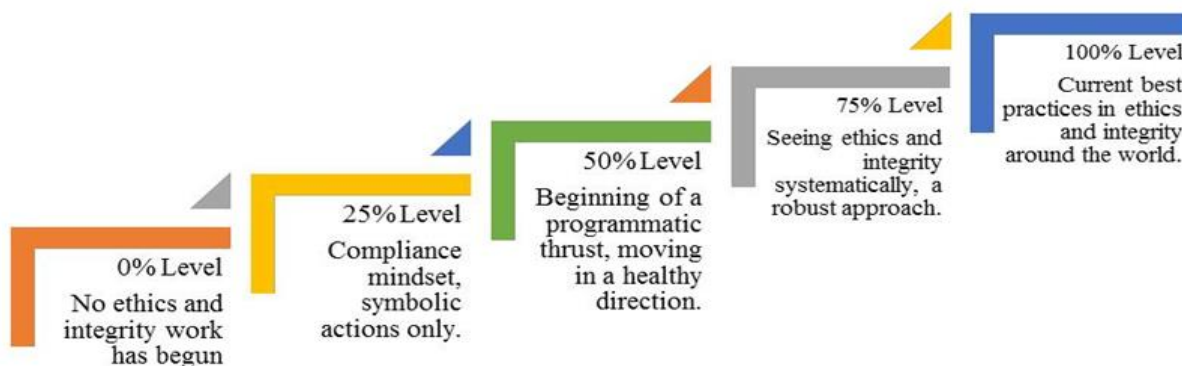


Figure 1: Five Benchmark level of CISM

CONCLUSION

This paper has highlighted the importance of CIO and ethical climate to help curb issue of corruption and fraud. It has also highlighted Malaysian government initiatives in this effort. It also highlights the tool that can be used to assess the level of ethics and integrity in the public sector. A good and healthy ethical climate should be fostered by the leaders or top management of the public sector. One of the way is to have a code of conduct in the public sector. The code of conduct should set clear guidelines on what can and cannot be done and that there is proper penalty and reward depending on the ethical behavior or conduct of an employee. Corporate ethics and integrity systems should also be institutionalized. Establishment of an Integrity Unit may overcome this issue. Lead by a Certified Chief Integrity Officer (CIO), this unit should aim to improve the level of ethics and integrity of the public sector organizations as well as incorporating the high level of governance. Since its establishment in 2009, it is about time now that the impact of CIO on the level of ethics in the public sector be examined.

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WASTE MANAGEMENT BIOTECHNOLOGY FOR ALKALINE PROTEASE PRODUCTION AND OPTIMIZATION

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ABSTRACT

Environmental pollution is one of the major issues in either well developed or in developing countries. Pollution can also come from animal wastes such as livestock, wastewater and feed that have been wasted. This type of circumstances occurs when there are abundant of waste generated in animal farms in certain area that is difficult to be disposed. For example, the fish residues such as fish fin, viscera, and scales can be one of the sources of contamination that can be the major problem. Moreover, chicken feather (CF) is widely disposed that results in environmental pollution as it cannot be solved with ease. Hence both

fish fin (FF) and CF can be utilized to produce alkaline protease (AP) enzyme by using microbial fermentation power. Protein from each sample was extracted and determined. Then, the extracted protein from both wastes was employed in the production media together with bacterial suspension which was incubated. Next, alkaline protease assay was carried out to test for presence of alkaline protease in the samples. Optimization parameters controlling alkaline protease productivity were screened and determined. The optimum pH of CF and FF was 9.0, the optimum temperatures recorded at 28 and 40°C for CF and FF respectively, the production incubation periods were 6 and 10 days for CF and FF respectively. While, galactose and glucose exhibited the optimum carbon sources for CF and FF respectively from one hand, and the optimum nitrogen sources recorded to be ammonium chloride and beef extract for CF and FF respectively from the other hand.

Keywords: Alkaline Protease, Fish fin, Chicken feather, Waste management, Protein extraction, Optimization.

INTRODUCTION

Environmental pollution is one of the major issues in either well developed or in developing countries. In another word, pollution can be described as the introduction of contaminants into the environment which may result in harm or discomfort to living beings or that harm the environment. Pollutants can come in naturally occurring substances or energies, however, it is considered as contaminants when in excess of natural levels. Pollutants can be divided into two categories namely biodegradable and non-biodegradable. Biodegradable pollutants are considered as the one can be broken down and can be processed by living beings, these include organic waste products, phosphates, and inorganic salts. On the other hand, non – biodegradable pollutants are the ones that cannot undergo decomposition by living organisms which mean the pollutants will remain in ecosphere for extremely long periods of time (Miguel, 1990). Pollution can also come from animal wastes such as livestock and poultry manure, waste water and feed that have been wasted. This situation arises when there are abundant of waste produced by animal farms in certain area that cannot be disposed of or recycle. Unfortunately, this type of waste will affect the nature of air and water if it is not treated well. This is because, it will be big danger if the untreated animal waste wash into rivers or water streams and this is considered as non-point source (NPS) pollution .In United States this type of pollution is in critical level among water quality issues (Fafioye, 2012) as this can lower down the dissolved oxygen (DO) and affect aquatic life. Similarly, chicken feather waste and fish waste considered as pollutants that can contribute to environmental pollution (Gray, 2012). An industry that deals with fish processing generate considerable quantities of by-products as waste including viscera, shell (from crustacean and molluscan processing) scales, frame bones and fins. These kinds of wastes are largely produced in all over the countries. For instance, India alone produces <2mmt of by - products resulting from fish processing activities. Furthermore, unlike the seafood processing sector, fresh water fish or the inland fisheries sector carry out un-organized which lead to distinct level of waste disposal issues. Visceral waste alone can contribute as much as 300 000 ton (Mahendrakar,

2000). However, despite it is considered as waste viscera are good source of proteins including fats and enzyme in it. The fish's digestive tract contains micro flora which can generate antibacterial materials, these antibacterial materials able to prevent the pathogenic bacteria from getting into an organism (Sugita *et al*, 1996). The decomposition of nutrients is done by the gastrointestinal bacteria and it provides physiologically active materials such as enzymes ,amino acids and vitamins for the macro organism.(Sugita *et al*,1997).Besides, few proteolytic bacteria previously have been reported to be related with both fresh water and marine fish processing wastes (Sudeepa *et al.*,2007). In addition, it is also known that the aquatic microbes produce exo-enzymes identified as inducible catabolic enzymes. The waste that has been disposed from the fishery processing industry contributes to higher environmental and health problem. Hence, to lower the wastage of these by products, variety of method to dispose them have been developed which includes the process of ensilation , fermentation, hydrolysate and fish oil production (Faid et al.,1997)Another interesting information is that the by-products of fish able to provide excellent nutrient source for the growth of microbes that can be very useful in enzyme production process, which is widely governed by the cost associated with growth media (Coello *et al.*, 2000). Fish wastes such as heads, fins, bones, viscera, chitinous material, waste water, and so on were prepared in order to test as growth substrates for production of microbial enzymes. Example of microbial enzymes are protease, lipase chitinolytic and ligninolytic enzymes (Triki-Ellouzet *al.*2003). Apart from fish processing waste, another type of waste that can contribute to pollution is from poultry industry where the waste from this industry eventually produces a lot of wastes. The large quantity of waste feathers generated by the poultry industry every year is around 1.8 million tons in US. This leads to disposal issues as it is environmentally difficult. Hence, if we consider this problem economically and environmentally, it will be easy to come up with effective and profitable techniques to utilize this source of waste (Gessesse, et al & Mattiasson, 2003). Feathers are generated in bulk amount at poultry processing plants and clearing away is big issue in processing plants (Ichida et al., 2001). Beta keratin is one of the components of feathers that repel chemical agent and enzymatic lysis. The keratin in feathers are linked by certain angle to the cysteine and two cysteine molecule linked by disulphide bond that contributes to huge durability of keratin (Esawy, 2007). Protease can be considered as one of significant groups of enzyme and revealed over animal kingdom such as plants and microbes (Imtiaz & Mukhtar, 2013).The amount of enzyme protease attained from source of plant and animal were inadequate to meet present requirements. Currently, there has been remarkable increase in the application of alkaline protease enzyme that functions as industrial catalyst. This particular enzyme approaches other benefits compared to the utilization of conventional chemical catalyst for number of reasons. This reason can be explained by, alkaline protease they demonstrate high catalytic activity and high rank of substrate specificity. It also can be generated in huge amounts and at the same time are economically viable (Alencar et al., 2003).

METHODOLOGY

Samples Collection

Two different types of wastes namely chicken feather, fish fin was collected from the wet market at Kuantan. The fish fin collected was washed and dried under room temperature by using fan and after drying it was blended using a blender to ensure it is in small pieces. As for the chicken feather (CF), it was washed and dried as same method as fish fin (FF) and grinded using grinder to make it small pieces.

Pre-treatment of Fish Fin

The extraction of protein from fish fin was done as described by Hashemi-jokar, 2014. Small pieces of fish fin and blended fish fin of 5 g was weighed and added in 100 mL of 1M sodium hydroxide. The solution was stirred continuously using magnetic stirrer for 6 hours. This is to get rid of stirred non-collagen proteins to be extracted.

Extraction of Collagen from Fish Fin

After 6 hours in the sodium hydroxide, the suspension was centrifuged at 7000 rpm for 5 minutes. The pellet obtained was more like colloid. Distilled water then added to the pellet and mixed well by vortexing then centrifuged again to obtain the pellet after washing it. Then, 0.5M of acetic acid was added until it covers the insoluble material and kept for 3 days. After 3 days, the solution was centrifuged at 2000 rpm for 1 hour. The supernatant was removed and the insoluble material collected was washed with distilled water. 0.5M of EDTA was prepared and the pH was adjusted at 8 as it will only dissolve at pH 8. The insoluble material was soaked in EDTA for 5 days in order to remove calcium. After 5 days of soaking, the insoluble material of fish fin was washed with distilled water twice. This was done by centrifuging the insoluble material of fish fin with distilled water 10,000 rpm for 1 hour. The distilled water then discarded and 0.5M of acetic acid was added until it covers the insoluble pieces of fish fin. The total volume after addition of acetic acid was 25 mL. Then ammonium sulfate was added at ratio of 1:1 which means 25 mL of ammonium sulfate was added into 25 mL of fish fin suspension. The mixture was centrifuged again at 8000 rpm for 5 minutes. Both the supernatant and pellet was tested for presence of protein determination using Lowry assay method.

Dissolving of Chicken Feathers

Grinded chicken feather of 25 g was weighed and added into 1L of 0.5M sodium metabisulfite. The solution was heated at 30°C, at pH 5 and stirred regularly for 6 hours. After that, the solution was filtered using a sieve and centrifuged at 10,000 rpm for 5 minutes. The supernatant was collected and filtered again using filter paper to make it particle free.

Ammonium Sulfate Solution Preparation

Ammonium sulfate of 525 g was dissolved in 1L distilled water and stirred continuously until all particles of ammonium sulfate were dissolved completely. Again the solution was filtered using filter pump to remove any particles.

Precipitation of Protein

The 100 mL filtrate collected after filtration was poured into beaker and stirred well using a glass rod. Next, 100mL ammonium sulfate was added drop wise slowly into the filtrate. The ratio of ammonium sulfate and feather filtrate used was 1:1. Then, the solution was centrifuged at 10,000 rpm for 5 minutes and the solids formed were gathered carefully by rinsing it with distilled water. The supernatant after centrifugation was used to repeat the addition of ammonium sulfate at 1:1 ratio and centrifuged again to collect the both supernatant and pellet. The whole procedure of keratin extraction was done as described by (Gupta et al., 2012) The pellet was suspended in distilled water until it covers the pellet. Both the supernatant and pellet was kept in chiller for protein determination by Lowry assay (1951).

Alkaline Protease Production

M9 minimal salts solution (5X) was prepared as follows: To 800 mL of distilled water, all chemicals were added (g/L); $\text{Na}_2\text{HPO}_4 \cdot 7 \text{H}_2\text{O}$ 64; KH_2PO_4 15; NaCl 2.5g; NH_4Cl 5, the volume was topped up to 1000 mL and then autoclaved. Next, for the preparation of 1L of media, 200 mL of 5 X M9 salt solutions was added to 800 mL of distilled water. After autoclaving, the media was mixed uniformly and was cooled down until it reaches room temperature. Then, 2 mL of 1M MgSO_4 , 0.1mL of 1M CaCl_2 , 20 mL of 20% glucose was added to the autoclaved M9 5 X stock solutions. The mixture was swirled evenly. 1g of waste (fish fin and chicken feather) was weighed and mixed with autoclaved distilled water until it covers the waste. Then, the solution was shaken for three to five minutes, 1mL of clear solution from the waste solution was taken and inoculated in 50 mL nutrient broth media. The inoculated media was incubated for 48 hours at 37°C. In 200 mL M9 media was mixed with 0.5 mL of waste (protein containing waste) with 1 mL prepared bacterial suspension that was added into conical flask and be incubated at 37°C for 48 hours. After the incubation period, the solution was centrifuged in order to obtain the crude enzyme to proceed alkaline protease assay.

Protease Assay

Protease was determined by using the method of Folin Lowry method as described in (Nisha & J., 2014). 1.25 mL of Tris buffer (100 mM, pH 9) and 0.5 mL of 1% aqueous casein solution was added into 0.25 mL culture supernatant. It was incubated for period of 30 minutes at 30°C. Next, 3 mL of 5% trichloroacetic acid (TCA) was added into this mixture and it will form precipitate. The mixture was incubated for 10 minutes at 4°C, and centrifuged

at 5000 rpm for period 15 min. Then, 0.5 mL of the supernatant was taken and 2.5 mL of 0.5M of sodium carbonate was added to the supernatant, mixed well and incubated for 20 minutes. Thereafter, 0.5 mL of folin reagent was added to the mixture and analyzed under UV-VIS at 660 nm. Then, the amount of protease was measured using a tyrosine standard graph (Takami et al., 1989).

Process Optimization for Maximum Protease Production

The method carried out to test different parameters to screen alkaline protease enzyme and determine the optimum conditions described by Nisha and J. Divakaran, 2014. The ideal initial pH was determined by altering the production medium to various pH values, where the pre-autoclaved medium was prepared individually at pH 5, 6, 7, 8 and 9 was inoculated with bacterial suspension and protein extracted from chicken feather and fish fin incubated at 37°C for 48hrs. The effect of different temperatures on protease production was studied by incubation at temperature of 20, 30, 40, 50, and room temperature for 48 hours at 37°C. The development of different carbon sources for instance glucose, starch, maltose, lactose, xylose and fructose was determined and the various nitrogen sources such as yeast extract, beef extract, peptone, urea, ammonium chloride, sodium nitrate and ammonium sulphate was investigated for their development on protease production. The effect of incubation period was studied for 2, 4, 6, 8 and 10 days. The effect of protein volume on the production of alkaline protease was studied using volumes (mL) such as 0.0, 0.5, 1.0, 1.5, 2.0, and 2.5 of protein extracted from waste under study was added and incubated with bacteria for two days. The bacterial inoculum sizes (mL) inoculated was varied viz; 0.25, 0.5, 0.75, 1.0, 1.25, and 1.5 into M9 minimal media together with the protein extracted and kept in incubator at 37°C for two days. After incubation period alkaline protease was determined.

RESULTS AND DISCUSSION

Data recorded in table 1 showed the protein content in chicken feather and fish fin measured using 96 well microplate at 700nm by conducting Lowry assay. According to the results above, we can conclude that the supernatants of all the samples contain high protein content compared to pellet. Hence, the supernatant and pellet was mixed together as the crude extracted protein from the chicken feather and fish fin. However, the protein content for fish fin blended was low compared to fish fin pieces, as a matter of fact; the fish fin blended was not preceded further in this experiment. Fish fin pieces was used throughout this study as it shows better and logical results. Fish fin pieces provided better results as the surface area of pieces was higher which makes efficient for the chemicals to react with small pieces of fish fin rather than blended one.

Table 1: Protein content in both the samples

Protein Sample	Protein at 660nm
Control	0.058 ± 0.004
FFPP	0.393 ± 0.063
FFSP	0.852 ± 0.050
FFPB	0.084 ± 0.010
FFSB	0.058 ± 0.001
CFP	1.183 ± 0.035
CFS	4.894 ± 0.518

FFPP: Fish fin pellet pieces; FFSP: Fish fin supernatant pieces; FFPB: Fish fin pellet blended; FFSB: Fish fin supernatant blended; CFP: Chicken feather pellet; CFS: Chicken feather supernatant.

Data recorded in table 2 showed the readings for alkaline protease assay which was conducted to test the presence of alkaline protease enzyme in chicken feather and fish fin and, it is proven that the extracted protein contains the presence of alkaline protease enzyme in both chicken feather and fish fin. The amount of alkaline protease enzyme is slightly higher in chicken feather compared to fish fin and this might be due to the amount of protein present in each sample. The higher the protein amount in the sample, the higher the production of alkaline protease enzyme. Moreover, casein was not added for the control in this particular step, instead distilled water was added as addition of casein in the control results in high reading as it can react with the chemicals added in protease assay. This is because the casein plays the role of substrate, as the enzyme protease we are looking for digests casein, tyrosine which is the amino acid was liberated including either amino acids or peptide fragments. Folin’s reagent was used so that there is reaction between free tyrosine in order to generate blue colored chromophore that can be quantified by measuring the absorbance. Hence, the higher amount of tyrosine generated from casein, the higher the chromophores produced, stronger the protease activity.

Table 2: Protease assay readings for chicken feather and fish fin

Samples	Alkaline Protease at 660nm
Control (Casein Free)	0.0273 ± 0.002
Chicken Feather	0.254 ± 0.001
Fish Fin	0.246 ± 0.014

According to the Figure 1, it was found that alkaline protease activity is highest at room temperature which is at 28° C (0.362 /mL) and minimum production of enzyme is at 50°C (0.195 U/mL) for CF. (Goma, 2013), were also reported that the protease production was highest at 30°C and there was reduction in enzyme production as the enzyme undergo thermal inactivation. However, it can also be said that enzyme activity at 40°C is the second highest by few points only for CF which indicates the enzyme activity can be optimized at 40°C also. The highest enzyme activity for FF is at 40°C (0.342 U/mL) and lowest at 50°C (0.201 U/mL). The enzyme production is affected by temperature where the temperature change able

to alter the physical properties of cell membrane. (Nisha and Divakaran, 2014) also reported that the protease production was highest at 40°C where the microorganism that they utilized to produce protease was *Bacillus subtilis*. The incubation temperature generally concluded by considering the isolated microorganisms (Gomaa, 2013). However, in this paper there was no specific microorganism that was isolated instead mixed culture was used which explains why the highest temperature for alkaline protease production was different for chicken feather and fish fin. At high temperature the enzyme was inactivated which describes the low enzyme activity at 50°C for both CF and FF.

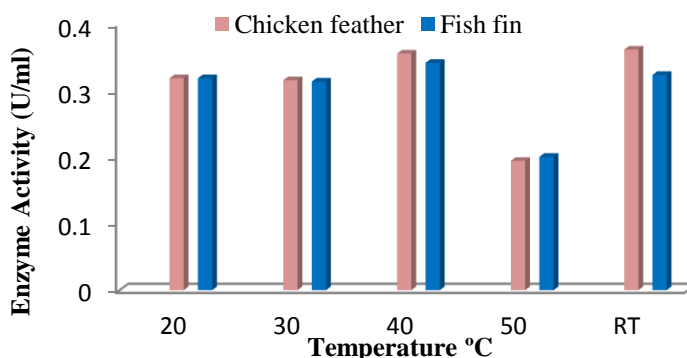


Figure 1: Enzyme activity of CF and FF against different temperatures (°C)

According to fig. 2 it has been found that for CF the highest enzyme activity was at pH 9 (0.217 U/mL) and the minimal enzyme activity was at pH 7 (0.188 U/mL). This clearly shows the alkaline protease from chicken feather can be produced optimally in alkaline condition by adjusting the production media to pH 9. The production of protease was less at pH 7 which means low amount of alkaline protease was produced neutral condition. As for the FF, the highest protease production was also at pH 9 (0.277 U/mL) and lowest production was at pH 5 (0.238 U/mL). As for FF, the production of alkaline protease was low at pH 5 which means the production of enzyme cannot be optimized in acidic condition, the acidic medium causes inactivation of enzyme resulting in low enzymatic activity. In addition, as the value of pH deviate from the optimal level, the productive operating of the enzyme can be altered. This indicates the low level of saturation of the enzyme to reduced affinity due pH effect on the stability of enzyme (Dixon and Webb, 1979). The control for assay was carried out which gives the reading of, and it can be compared with the other values obtained to analyze the amount of protease produced.

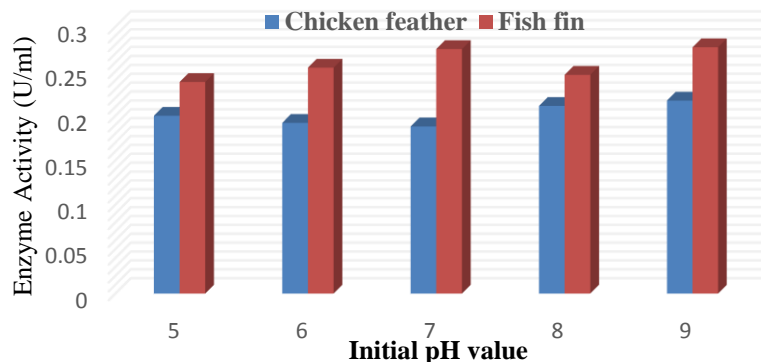


Figure 2: Graph of enzyme activity (U/mL) against pH

Figure 3 revealed that the various type of carbon sources employed in the production medium which includes all 3 classes of sugar, monosaccharide, disaccharide and polysaccharide. It has been found the best sugar for the production of alkaline protease in CF is galactose with enzymatic activity of 0.230 U/mL and the lowest production of enzyme is when maltose was employed with enzymatic activity of 0.201 U/ mL. Pant, (2015) was also reported that the galactose gave the maximum amount of alkaline protease and sucrose gave the lowest amount. On the other hand, carbon source that gave high amount of alkaline protease was glucose (0.233 U/mL) and lowest amount was starch with enzymatic activity of 0.148 U/ mL. The control gave reading of 0.50 U/mL which can be compared with other readings for the production of alkaline protease. Generally, this overall reading indicates that monosaccharide sugar which was used as carbon source able to produce higher amount of alkaline protease compared to disaccharide and polysaccharide sugar. The different enzymatic activity on carbon source between CF and FF can be due to the different type of protein present in each sample. Since, mixed culture of microorganisms used for both samples, different type of microbes utilized different type of carbon source to degrade the protein and to produce alkaline protease.

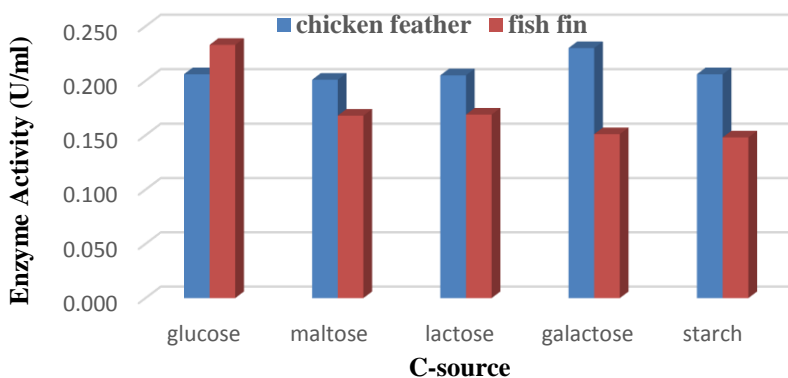


Figure 3: Graph of enzyme activity (U/mL) against carbon sources

Various type of nitrogen sources including organic and inorganic nitrogen were employed in the production medium. The results represented in Figure 4 indicated the highest enzymatic activity for CF was when nitrogen source ammonium chloride was used which gives reading of (0.414 U/mL) and the minimum amount of protease was for peptone (0.345 U/mL). The control used for CF gave production of 0.050 U/mL. This shows inorganic nitrogen source give higher enzyme compared to organic nitrogen for CF. However, nitrogen source of yeast and beef are also comparable as the production of alkaline protease enzyme in these both nitrogen source were high also. As for FF, beef extract gave high result with production of 0.201 U/mL and lowest reading of 0.114 U/mL for yeast. The control for FF produced 0.003 U/ mL. In this case, organic nitrogen gave higher reading compared to inorganic nitrogen. In a journal reported by N.S Nisha and J.Divakaran, (2014) beef extract gave the highest production of alkaline protease also. The optimal nitrogen source for CF and FF gave different result as the type of protein in each sample is different.

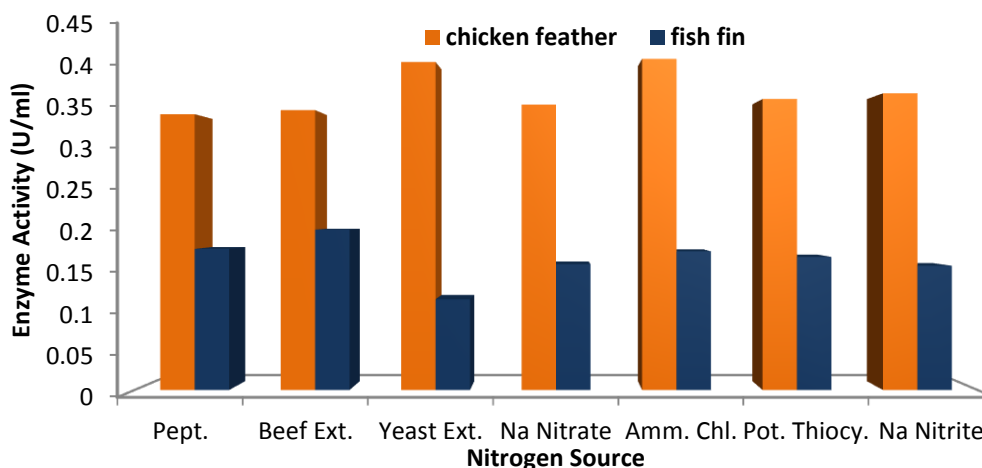


Figure 4: Graph of enzymatic activity (U/mL) against nitrogen sources

Data represented in Figure 5 was constructed based on varying the protein volume that was extracted from CF and FF to check on its enzymatic activity, (U/mL). It has been found that for CF the protease production was maximum when 0.5mL of protein volume inoculated as it gave enzymatic activity of 0.345 U/mL and minimum production of 0.272 U/mL at 0.0 mL protein volume. The control gave enzymatic activity of 0.027 U/mL for CF. The production of alkaline protease was higher when 0.5 mL of protein inoculated is because the protein in this amount of volume might have more active site so that more substrate able to bind to it. Hence, the more alkaline protease enzyme can be produced compared to higher volume protein, for instance, 2.5 mL of protein produce lesser amount than 0.5 mL, this is because at higher volume of protein, all the substrate available bonded at free active site and the bacteria present is constant for all the protein volume which means low amount of bacteria can only degrade certain amount of protein that will result in production of alkaline protease. As for the FF, the highest enzymatic activity was at 2 mL of protein volume with amount of 0.251 U/mL and the lowest animatic activity was at 0.0 mL (0.183 U/mL). The control for FF for the assay was 0.026 U/mL. In this case, the protein inoculated 2 mL shows higher reading

because the protein present have more active site so that the substrate can bind where this make an advantage when the volume of protein was increased. Conclusively, the lowest enzymatic activity was when there is absence of protein as there is less substrate binding occur.

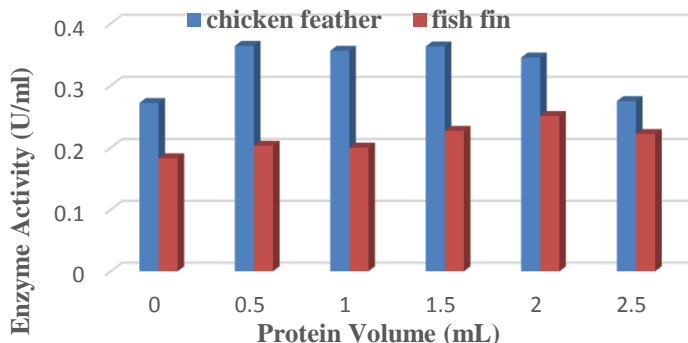


Figure 5: Graph of enzymatic activity (U/mL) against protein volume (mL)

One of the parameter is to vary the incubation period of production medium that is inoculated with bacteria and protein extracted from CF and FF (Figure 6). The incubation period was between 2 to 10 days maintained at 37°C. In the case of CF, the production of alkaline protease enzyme is maximum at 6 days of incubation with enzymatic activity of 0.290 U/mL and, minimum production of alkaline protease was found to be 0.185 U/mL at 8 days of incubation. As for the FF, the maximum production of alkaline protease were found to be at 10 days of incubation with enzyme activity of 0.336 U/mL and the lowest activity is 0.251 U/mL which is at 8 days of incubation. As for the CF, the production of protease decline at 10 days of incubation and this is because the production of enzyme could have terminated along with auto proteolysis (Nisha and Divakaran, 2014). However, the production of alkaline protease is high during 10 days of incubation and this might be due to the different protein in fish fin compared to chicken feather, where the protein in fish fin which is the collagen able to produce more alkaline protease after incubation of 10 days. In addition, the synthesis of enzyme is associated with growth of cell and incubation period and production of enzyme indeed related to each other (Kaur et al., 1998).

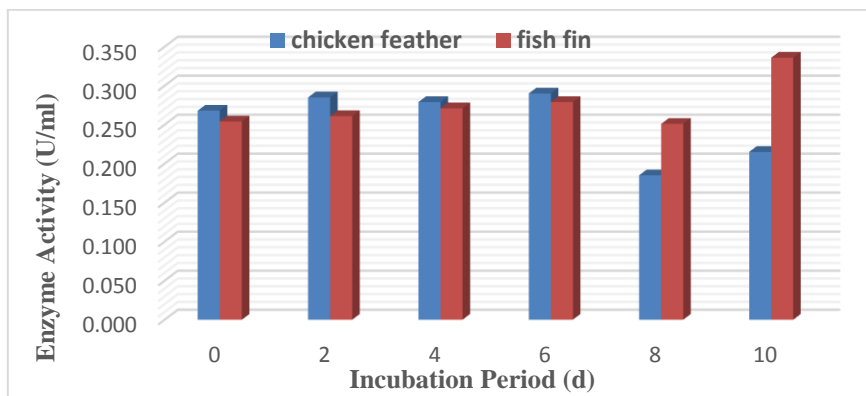


Figure 6: Graph of enzymatic activity against incubation period (days)

Another parameter tested was the size of bacterial inoculum where different volume of bacterial suspension was added in the production media together with the extracted protein from CF and FF. According to Figure 7, it can be concluded that maximum production of alkaline protease is at 1.5 mL of bacteria where the enzyme activity is 0.308 U/mL and the lowest enzymatic activity is 0.238 U/mL for 0.25 mL. The control for CF is 0.045 U/mL of enzymatic activity. As for FF, the maximum alkaline protease production is also at 1.5mL of bacterial inoculum with enzymatic activity of 0.450 U/mL and the minimum enzymatic activity obtained is 0.25 U/mL for bacterial size 0.25mL. The control gave enzymatic activity of 0.130 U/mL. Generally, from this paper, it can be concluded that large size of bacterial inoculum has the maximum amount of protease production for both CF and FF. This is because the presence of large number of bacteria will increase the alkaline protease production as more bacteria will be available to degrade the protein in the production medium. On the other hand, smaller inoculum size gave low amount of alkaline protease enzyme and this is because there is lack of enough bacteria to degrade the protein that results in low amount of protease production. Moreover, upgraded distribution of dissolved oxygen and also high nutrient uptake can increase the alkaline production. However, 0.5mL of size of inoculum also gave considerable result for FF as alkaline protease synthesis with small inoculum size has larger surface area which contributes to more protease production. (Shafee et al., 2005).

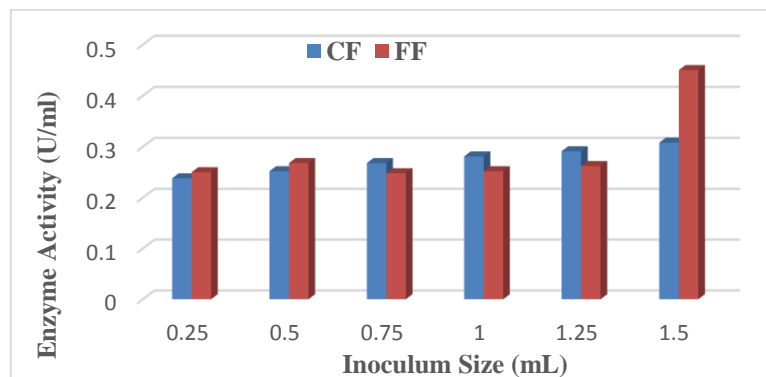


Figure 7: Graph of enzymatic activity (U/mL) against bacterial inoculum size

CONCLUSION

The study concludes that protein containing waste CF and FF able to produce alkaline protease enzyme using microbial fermentation. The protein extracted was further confirmed with Lowry method as it shows there is presence of protein in chicken feather and fish fin. The protein extracted was obtained in the form of supernatant and pellet. Next, the protein extracted was employed in the M9 minimal media together with bacterial suspension from CF and FF and tested for the presence of alkaline protease enzyme. The alkaline protease assay was carried out for both samples and the test gave positive results which confirm there is production of alkaline protease enzyme. Then, seven different parameters were tested to screen for the alkaline protease enzyme that gives the optimal result for each parameter. In

this study it has been found that the production of alkaline protease was highest at all these conditions.

ACKNOWLEDGMENTS

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BIOREMEDIATION OF PAHS FROM INDUSTRIAL REFINERY EFFLUENTS TO HIGHLY VALUABLE TRANSFORMED COMPOUNDS

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ABSTRACT

Polycyclic aromatic hydrocarbons (PAHs) are ubiquitous pollutants in the environment, and most highly molecular weight PAHs cause mutagenic, teratogenic and potentially carcinogenic effects. The study aims to screen the bioremediation effects on PAHs to produce new compounds with industrial importance by-products contaminated water using liquid- liquid extraction (LLE) coupled with gas chromatography-mass spectroscopy (GC-MS). Two bacterial isolates out of 13 were selected from PAHs samples contaminated water collected from Kuantan River. PAHs were extracted using dichloromethane from refinery wastewater samples collected from BASF (Petronas chemicals Co.). GC-MS analysis revealed that, the PAHs of petroleum refinery were successfully biodegraded using the most potent bacterial isolates within 15 days incubation periods into new compounds (Guanidine derivative, etc.) with industrial applications compared to control. This research improves our understanding of

processes contributing to PAHs degradation in petroleum refinery wastewater to new applications.

Keywords: Petroleum effluents, GC-MS, Bioremediation, Biotransformation.

INTRODUCTION

Polycyclic aromatic hydrocarbons (PAHs) are a large group of chemicals. They represent an important concern due to their widespread distribution in the environment, their resistance to biodegradation, their potential to bioaccumulate and their harmful effects. deterioration of soil and water quality (Kadri et al., 2016). Potential treatments have been implemented to prevent further economic consequences and deterioration of soil and water quality. Among such treatments, bioremediation initiatives promise to deliver long lasting and low cost solutions for PAHs degradation. Biodegradation of hydrocarbons was carried out either by bacteria (Hamamura et al., 2013; Ferreira et al., 2015), fungi (Li et al., 2005; Young et al., 2015). Microorganisms such as bacteria, fungi, algae are reported for their ability to degrade hydrocarbon pollutants (Varjani & Upasani, 2013; Wilkes et al., 2016). Bacteria are reported as primary degraders and most active agents in petroleum pollutant degradation (Abbasian et al., 2015; Meckenstock et al., 2016). Bioremediation is an innovative technique, in which microorganisms mitigate, degrade or reduce hazardous organic pollutants to innocuous compounds such as CO₂, CH₄, H₂O and biomass without adversely affecting environment (Ron and Rosenberg, 2014). Biodegradation is one of the primary mechanisms for bioremediation in which oleophilic microbes are used for elimination of hydrocarbon pollutants from environment (Varjani et al., 2013; Macaulay & Rees, 2014; Varjani & Upasani, 2016). Petroleum refinery effluents (PRE) are wastes originating from industries primarily engaged in refining crude oil and manufacturing fuels, lubricants and petrochemical intermediates (Harry 1995). Basically, PRE are complex matrices of organic pollutants, and it is well established that photocatalytic degradation can completely mineralise oily and hydrocarbon-rich waste waters. Furthermore, all of the different types of organic substrate typically found in PRE are also mineralised; therefore, by default, PRE can be effectively treated (Diya'uddeen, et al., 2011).

Some microorganisms have ability to degrade aliphatics, some can degrade monoaromatics or polyaromatics while others degrade resins. Petroleum hydrocarbon pollutants degrading microorganisms. Bacterial sp. of genera *Achromobacter*, *Acinetobacter*, *Azoarcus*, *Brevibacterium*, *Cellulomonas*, *Corynebacterium*, *Flavobacterium*, *Marinobacter*, *Micrococcus*, *Nocardia*, *Ochrobactrum*, *Pseudomonas*, *Stenotrophomonas* and *Vibrio* are reported as hydrocarbon degraders (Varjani et al., 2015; Varjani & Upasani, 2016).

PAH degradation depends on the environmental conditions, number and type of the microorganisms, nature and chemical structure of the chemical compound being degraded. They are biodegraded/biotransformed into less complex metabolites, and through mineralization into inorganic minerals, H₂O, CO₂ (aerobic) or CH₄ (anaerobic) and rate of biodegradation depends on pH, temperature, oxygen, microbial population, degree of acclimation, accessibility of nutrients, chemical structure of the compound, cellular transport properties, and chemical partitioning in growth medium. A number of bacterial species are known to degrade PAHs and most of them are isolated from contaminated soil or sediments. *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Mycobacterium* spp., *Haemophilus* spp.,

Rhodococcus spp., Paenibacillus spp. are some of the are some of the commonly studied PAH-degrading bacteria. (Haritash & Kaushik 2009).

Chromatographic techniques, such as GC and HPLC, have been used to analyse PAHs in water samples (Garcia et al., 2004;Mao et al., 2012) Due to complexity of the refinery wastewater, the water samples are not directly analysed using gas chromatography, gas chromatography-mass spectrometry, or high-performance liquid chromatography. Therefore, appropriate sample preconcentration procedures are required in order to obtain accurate data with good precision.(Song et al., 2016). The organic chemical composition was characterized using a gas chromatograph-mass spectrometer (GC–MS). The water sample pretreatment method and GC–MS detection condition are described in the supplementary material (Wang, Wang et al. 2016).

The present study aims to isolate and screening of bacterial isolates from Kuantan River contaminated water for bioremediation and transformation purposes to produce new compounds with highly medical and industrial importance.

MATERIALS AND METHODS

Sample Collection and Preparation

Refinery wastewater samples were collected from BASF (Petronas chemicals Co.) Kuantan, Pahang, 26100, Malaysia. Water samples (2L) were collected in glass bottles covered with screw caps and immediately sent to the laboratory for analysis and Liquid-Liquid extraction as described in APHA (Andrew et al., 1998) using Filters Fiononi paper (90 mm diameter) under Vacuum pump and then stored at 4 °C .

Media Preparation

An enrichment medium was prepared as follows (g/ L): MgSO₄, 0. 2; CaCl₂, 0.02; NH₄NO₃ ,1.0; KH₂PO₄ ,1.0 ;K₂HPO₄, FeCl₃, 0.05 (Prabhakaran, Sureshbabu et al. 2014)into demineralized water. Nutrient agar was prepared for culturing of bacterial isolates by adding 23.0 g of nutrient agar to 1000 mL of demineralized water. The media was purchased from Hardy Diagnostics, USA. The nutrient broth media were prepared by adding 20.0 g of nutrient broth to 1000 mL of demineralized water. The media was purchased from Merck, Germany. All the media were autoclaved for 15 minutes at 121 °C.

Biodegradation Experiments

Bacterial suspension (25mL) was prepared using Nutrient Broth (NB) media in 50 mL falcon tube centrifuge and incubated at 37°C for 24h. The bacterial suspension was enriched in an enrichment medium as previously describe at pH 7.2 using PH meter (METTLER TOLEDO) and 0.75 mL of PAHs added into 25 mL, 5mLbacteria suspension and the incubated at 37°C for 5, 10, 15 days. At the end of incubation period then APHs was extracted using dichloromethane and APHs sample (1:8 v/v) after that the sample were evaporated up to at least 3mL using rotary evaporator then absorbance of the APHs was recorded using a UV-VIS spectrometer (GENESYS 10S) at 245nm.

Sample Extraction

The water sample 200 mL were extracted three time with 25 mL of dichloromethane in separating funnel (1:8v/v) was added and shaken vigorously for 2 min stay 30 min before two phase separation. The organic-phase was carefully poured into beaker and add 10 g Anhydrous sodium sulphate (annealed at 400 °C for 4h at heating rate 3 °C /min). The extract was concentrated to the volume of 2 mL using rotary evaporator speed 3, 40° C heating then analysed with Gas chromatograph.

Gas Chromatograph-mass Spectrometer (GC-MS) Analysis

Sample analysis was performed on (GC of Agilent technology 7890A with a 7693 auto sampler) equipped with a DB-5MS capillary column (30 m × 250 µm film thickness × 0.25 mm, Agilent), operating with helium carrier gas, coupled to an Agilent MSD 5975C mass spectrometer (MS). GC injector was operated in splitless mode. 1 µL aliquot was injected using an auto sampler. GC oven temperature of injector and detector is maintained at 250 °C and 325 °C respectively. Column is set at initial temperature of 70°C, this is held for 2 min, then be increased at 5°C/min to 280°C and held for 10 min . GC-MS was used for PAHs separation and identification Chromatographic conditions were chosen according to (Shao et al., 2015) with modify.

RESULT AND DISCUSSION

Isolation of PAHs-Degrading Bacteria

Two bacterial isolates out of 13 bacterial isolate were selected from (KR) the isolated strains were identified based biochemical tests the isolate first type Mycobacterium confluents (D) and bacteria (F) did not have ID. Then absorbance of the APHs was recorded using spectrophotometer at 245nm bacteria D X% degradation 27.27% with concentration of 166.15 µL/mL. While Bacteria F X% degradation 6.06 % concentration 214.61µL/mL Compared with control 0.297 A±0.001 concentration 228.46µL/mL (Table 1). Isolation of two new strains, Mycobacterium austroafricanum GTI-23 and M. vanbaalinii, has been reported by (Bogan et al., 2003; Moody et al., 2004), respectively. These strains have been shown to mineralize PAHs like fluorene and benzo[a]pyrene in soil as well as liquid mediums.

Table 1: Screening of PAHs bioremediation concentration

No	Sample code	X%	Concentration μL/mL
1	Blank solvent	0.0	0.0
2	control	0.0	228.46
3	KRA ₁	0.0	440.77
4	KRB ₁	0.0	332.30
5	KRC ₁	0.0	460.00
6	KRA ₂	0.0	275.38
7	KRB ₂	0.0	341.53
8	KRE ₂	0.0	268.46
9	KRD ₂	27.27	166.15
10	KRF ₂	0.0	300.00
11	KRB ₃	0.0	403.07
12	KRC ₃	0.0	427.69
13	KRF ₃	6.06	214.16
14	KRA ₄	22.22	177.69
15	KRB ₄	0.0	236.92

GC-MS analysis of dichloromethane extracts of refinery wastewater samples(RW). Showed the presence of 13 compounds, 8 of them belong to PAHs (Table 2 and Fig. 1). Samples showed the initial Ph at 11.55 and 7.9 for RW and Kuantan River (KR)respectively.

Growth and Biodegradation

Mycobacterium confluentis, bacteria F and DF were tested to grow on enrichment medium (EM) at different incubation periods 5, 10 and 15 days with 0.75 mL PAHs. The course of biodegradation of PAHs in the *Mycobacterium confluentis* enrichment medium (EM) table 1 shows that Screening the by-products produced using GC-MS Analysis from PAHs Bioremediation at different incubation periods. Bacteria *Mycobacterium confluentis* after 5days all the compound were degraded except trans-2,3-Methylenedioxy-b-methyl- b-nitrostyrene at Retention Time (RT) 43.965 and (PA) 3.45% respectively and bacteria F except Methyl 2-methyl-2-(methoxy-3-hydroxypropoxy)amino-propanoate at (RT) 40.275 and (PA) 4.93% respectively. While ,bacteria DF 8 out of 13 compounds degraded. The same *Mycobacterium* was reported by(Walter et al., 1991;Trzesicka & Ward, 1995). That Benzo(a)pyrene (Bap) has been degraded with other different bacteria including *Rhodococcus* sp., *Mycobacterium*, and mixed culture of *Pseudomonas* and *Flavobacterium* after 30 days incubation period.

Moreover, after 10 days *Mycobacterium confluentis* and bacteria F 6, 8 out of 13 compounds degraded. While bacteria DF all the compound were degraded except Carbamic acid, N-(2,3-dimethylphenyl)-, oxiranylmethyl ester at Retention Time (RT) 36.076 and (PA) 27.56% respectively and Methyl 2-methyl-2-(methoxy-3-hydroxypropoxy)amino-propanoate at Retention Time (RT) 40.275 and (PA) 14.75% respectively . *Mycobacterium confluentis* and bacteria F after 15 days all the compound were degraded. While bacteria DF was was degred except 3-Octene, (Z)- at (RT) 42.412 and Peak Area 11.14%. (Romero, Cazau et al. 1998) which described isolate *Pseudomonas aeruginosa* from a stream heavily polluted by a petroleum refinery. The species was found to be actively growing over high dosages of phenanthrene with complete removal of the pollutant in a period of 30 days.

Table 2: Screening the by-products produced using GC-MS analysis from PAHs bioremediation at different incubation periods

NO	Control Compound & Molecular Formula	RT	Peak Area%	Bacterial Isolates and peak area (%) at different Incubation Period (day)								
				D			F			DF		
				5	10	15	5	10	15	5	10	15
1	Silane, 1,6-heptadiyne-1,7-diylbis [trimethyl C ₁₃ H ₂₄ Si ₂	22.279	2.61	-	+	-	-	-	-	+	-	-
					5.25					2.71		
2	l-Methionine, n-heptafluorobutyryl-, isohehexyl ester C ₁₅ H ₂₂ F ₇ NO ₃ S	25.629	4.70	-	+	-	-	-	-	-	-	-
					4.65							
3	Adenosine, 2-methyl- C ₁₁ O ₄ N ₅ H ₁₅	28.603	4.58	-	-	-	-	-	-	-	-	-
4	Benzoic acid, 4-[(trimethylsilyl)amino]-, trimethylsilyl ester C ₁₃ H ₂₃ NO ₂ Si ₂	31.323	5.98	-	+	-	-	+	-	-	-	-
					7.87			7.31				
5	3-[2-Hydroxy-3-(3-hydroxy-phenylamino)-propyl]- 1,2,3,4,5,6-hexahydro-1,5-methano-pyrido[1,2-a][1,5] diazocin-8-one C ₂₀ H ₂₅ N ₃ O ₃	33.789	7.56	-	+	-	-	+	-	+	-	-
					15.73			7.55		4.48		
6	Carbamic acid, N-(2,3-dimethylphenyl)-, oxiranylmethyl ester C ₁₂ H ₁₅ NO ₃	36.076	9.19	-	+	-	-	+	-	+	+	-
					13.29			9.07		10.84	27.56	
7	2-[4-Acetamidophenylsulfonyl]-1,4- naphthoquinone C ₁₈ H ₁₃ NO ₅ S	38.236	10.84	-	+	-	-	-	-	+	-	-
					15.52					7.56		
8	1,3,5-Triazine-2,4-diamine, N,N'-diethyl C ₇ H ₁₃ N ₅	39.287	6.13	-	-	-	-	-	-	-	-	-
9	Methyl 2-methyl-2-(methoxy-3-hydroxypropoxy)amino- propanoate C ₉ H ₁₉ NO ₅	40.275	10.25	-	-	-	+	-	-	-	+	-
							4.93				14.75	
10	N-Benzyl-N-ethyl-p-isopropylbenzamide C ₁₉ H ₂₃ NO	42.186	7.13	-	-	-	-	+	-	-	-	-
								9.44				
11	3-Octene, (Z)- C ₈ H ₁₆	42.412	7.08	-	-	-	-	-	-	-	-	+
												11.14
12	2,2'-(2,2'-Oxybis(ethane-2,1-diyl) bis(oxy))bis(ethane-2,1- diyl) bis(3,5,5-trimethylhexanoate) C ₂₆ H ₅₀ O ₇	43.220	20.54	-	-	-	-	-	-	-	-	-
13	trans-2,3-Methylenedioxy-b-methyl- b-nitrostyrene	43.965	3.41	+	+	-	-	+	-	+	-	-

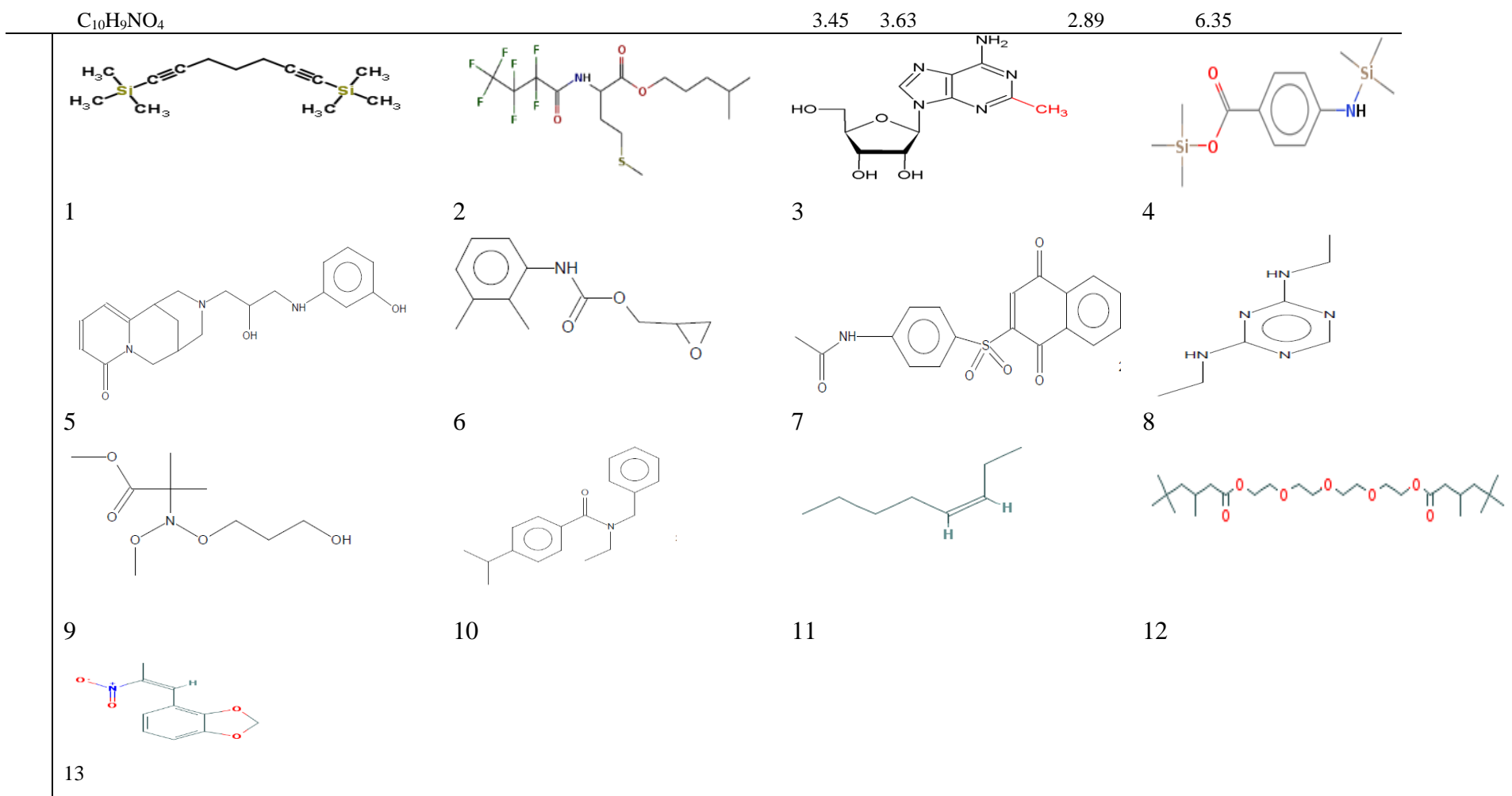


Fig 1: The major constituents compound structures of control before PAHs bioremediation.

Data recorded in Table 3 revealed that GC-MS analysis confirmed new compound with medical and industrial importance after bacterial bioremediation of extracted PAHs. Fourteen compounds as Benzene, 1-nitro-3--(trifluoromethyl)-; Guanidine, N-methyl-N'-nitro-N-nitroso ; Hexadecanoic acid, methyl ester; dimethylcarbamothioic acid, O-isopropyl ester; Bis(2-ethylhexyl) phthalate; 3-buten-2-one, 4-(1-aziridinyl)-4-(dimethylamino); Trisiloxane, 1,1,1,5,5,5-hexamethyl-3,3-bis[(trimethylsilyl)oxy]-; Fumaric acid, monoamide, N-(2methoxyphenyl)-, isohexyl ester; 4-Fluorohistamine; Morphinan, 7,8-didehydro-4,5-epoxy -17-methyl-3,6-bis[(trimethylsilyl)oxy]-, ; 3-Trimethylsilyloxystearic acid, trimethylsilyl ester; 9-Octadecenamide, (Z)-; 3-Amino-2-phenazinol ditms; Phenol, 2,5-bis(1,1-dimethylethyl)- with RT rang of (19.507-42.181).

After 5 days bacteria *Mycobacterium confluentis* and F were identified Guanidine, N-methyl-N'-nitro-N-nitroso as degradation products. While bacteria DF after 10 days. at Time (RT) 25.623 and Peak Area 1.38 , 2.88 , 20.42 % respectively. Inorder to understand Guanidines have been explored for wide ranging applications ranging explored for wide ranging applications ranging from materials to biology. The use of guanidines in nano-synthesis from materials to biology. The use of guanidines in nano-synthesis and dendrimer formation is an area yet to be explored and is an attractive future research perspective. In addition, known to be toxic are now identified as compounds with varied and numerous applications (Tahir et al., 2015).

Moreover after 15 days Bis(2-ethylhexyl) phthalate, synonym is (Phthalic acid, bis(2-ethylhexyl) ester, DEHP was identified as degradation in bacteria *Mycobacterium confluentis* , F and DF at Time (RT) 39.287 and Peak Area 57.44 , 60.87 ,40.13 % respectively. In addition ,after 5,10 days in *Mycobacterium confluentis* and F at Peak Area 29.94 , 8.55 % respectively. The same *Mycobacterium* , product and metabolized 61.5 % after 5 days were reported by (Rehmann et al., 1998) isolated a *Mycobacterium* spp., strain KR2 from a PAH contaminated soil of a gaswork plant, which was able to utilize pyrene as sole source of carbon and energy. The isolate metabolized up to 60% of the pyrene added (0.5mgml⁻¹) within 8 days at 20 °C. Cis-4,5-pyrene dihydrodiol, 4-5-phenanthrene dicarboxylic acid, 1- hydroxy-2-naphthoic acid, 2-carboxybenzaldehyde, phthalic acid, and protocatechuic acid were identified as degradation products. Due to its suitable properties and the low cost, DEHP is widely used as a plasticizer in manufacturing of articles made of PVC.

Another compounds with application Fumaric acid, monoamide, N-(2methoxyphenyl)-, isohexyl ester and Phenol, 2,5-bis(1,1-dimethylethyl)- in bacteria *Mycobacterium confluentis* and F after 15 days at at Time (RT) 28.950 and Peak Area 1.60 , 3.06 % respectively. while Phenol, 2,5-bis(1,1-dimethylethyl)- at (RT) 19.507 and Peak Area 6.66 , 13.91 % respectively . Currently, phenol compounds are the most common organic pollutants presenting wastewater due to the continuing process of industrialization. These compounds have been used extensively used extensively in various industries, such as the used extensively in various industries ,such as the chemical and petrochemical industries (Hasanoğlu 2013;Naeem & Ouyang 2013).

Hexadecanoic acid, methyl ester (palmitic acid) showed after 5 days by bacteria F at (RT) 28.742 and Peak Area 52.31 % . While Morphinan, 7,8-didehydro-4,5-epoxy -17-methyl-3,6-bis[(trimethylsilyl)oxy]-, was degraded by bacteria DF at (RT) 25.623 and Peak Area 4.18 % . (Tewari, Jyothi et al. 2015) described specific application of hexadecanoic ester derivatives in

Table 3: New compound produced with industrial importance by-products using GC-MS from PAHs Bioremediation at different incubation periods

NO	Compounds produced and molecular formula	RT ¹	Bacterial isolates and peak area (%) at different incubation									Application
			Period(day)									
			D			F			DF			
5	10	15	5	10	15	5	10	15				
1	Benzene, 1-nitro-3-(trifluoromethyl)- C ₇ H ₄ F ₃ NO ₂	19.513	+ ²	- ³	-	+	-	-	+	-	-	industrial solvent in paints
2	Guanidine, N-methyl-N'-nitro-N-nitroso C ₂ H ₅ N ₅ O ₃	25.623	1.58 ⁴	-	-	3.55	-	-	1.55	-	-	multiple biological applications- uses of chemistry
3	Hexadecanoic acid, methyl ester(palmitic acid) C ₁₇ H ₃₄ O ₂	28.742	-	-	-	+	-	-	-	-	-	Medical- industrial effect of insct-industrial applications
4	Dimethylcarbamothioic acid, O-isopropyl ester C ₆ H ₁₃ NOS	38.236	+	-	-	+	-	-	-	-	-	
5	Bis(2-ethylhexyl) phthalate C ₂₄ H ₃₈ O ₄ (Phthalic acid, bis(2-ethylhexyl) ester)	39.287	+	-	+	-	+	+	-	-	+	industrial
6	3-buten-2-one, 4-(1-aziridinyl)-4-(dimethylamino) C ₈ H ₁₄ N ₂ O	28.782	-	-	+	-	-	+	-	-	+	
7	Trisiloxane, 1,1,1,5,5,5-hexamethyl-3,3-bis[(trimethylsilyl)oxy]- C ₁₂ H ₃₆ O ₄ Si ₅	42.181	+	-	-	-	+	-	-	-	-	
8	Fumaric acid, monoamide, N-(2methoxyphenyl)-, isoheptyl ester C ₁₇ H ₂₃ NO ₄	28.950	-	-	+	-	-	+	-	-	-	Food-medicine-psoriasis
9	4-Fluorohistamine C ₅ H ₈ FN ₃	29.400	-	-	-	-	-	+	-	-	+	medical
10	Morphinan, 7,8-didehydro-4,5-epoxy -17-methyl-3,6-bis[(trimethylsilyl)oxy]-, C ₂₃ H ₃₅ NO ₃ Si ₂	25.623	-	-	-	-	-	-	+	-	-	medical
11	3-Trimethylsilyloxystearic acid, trimethylsilyl ester C ₂₄ H ₅₂ O ₃ Si ₂	40.281	+	-	-	-	-	-	+	-	-	Steel, petrochemical, coal chemical, Fertilizer, metallurgy, Electricity
12	9-Octadecenamide, (Z)-, Oleic acid amide C ₁₈ H ₃₅ NO	18.427	-	+	-	-	-	-	+	-	-	Industry uses - Consumer Uses
13	3-Amino-2-phenazolin ditms C ₁₈ H ₂₅ N ₃ OSi ₂	22.85	-	-	-	-	+	-	+	-	-	
14	Phenol, 2,5-bis(1,1-dimethylethyl)- C ₁₄ H ₂₂ O	19.507	-	-	+	-	-	+	-	-	-	the chemical and petrochemical industries

RT: Retention time; +²: Compound Exist; -³: Compound absent; ⁴: peak Area %.

traps for effective management of this groundnut pest. The specificity of synthesized ester derivatives in attracting both sexes differently also indicates their probable resemblance to pheromone components of *Caryedon serratus*. Moreover, Palmitic acid has also a wide range of industrial applications, including the use in the production of soaps and cosmetics as well as being utilized as a food additive. (Albuquerque et al., 2005; Simakova et al., 2009). While according (Schuster, Spetea et al. 2010) were reported that presents a large investigation of morphinan and isoquinoline compounds as AChE inhibitors. Pure cultures of microbes are capable of metabolizing only a certain range of PAHs due to their complex structure. Therefore, several microbial species are assembled to form microbial consortium with broad enzymatic capacities to increase the rate and degradation of PAHs. Such mixed cultures display metabolic versatility and superiority to pure cultures and superiority to pure cultures (Gupta et al., 2016).

Fumaric acid used effective treatment of psoriasis has been reported by (van Geel et al., 2016). This compound found when degradation after 15day by *Mycobacterium confluentis* and bacteria F at (RT) 28.950 and Peak Area 1.60 ,3.06 %respectively. Some bacteria like *Mycobacterium* sp. are capable of oxidizing PAHs by the action of the cytochrome P450 monooxygenase enzyme to form trans-dihydrodiols (Kelley et al., 1990).

3-Trimethylsilyloxystearic acid, trimethylsilyl ester, 9-Octadecenamide, (Z)-, (Oleic acid amide), 3-Amino-2-phenazinol ditms were found after 5 days by bacteria DF at (RT) 40.281,18.427,22.85 and Peak Area 15.99 ,1.42,7.01 %respectively. Several bacterial species such as *Pseudomonas alcaligenes*, *Rhodococcus* sp., *Mycobacterium* sp., *Sphingomonas* sp. are found to be capable of degrading PAHs. Most of these bacteria have the capability to grow on low molecular PAHs such as naphthalene, fluorene and phenanthrene. But in last few years several bacteria (especially *Mycobacterium*) have been isolated to grow on four ring PAHs. The hydrophobic surfaces of these bacteria help them to adhere to hydrophobic PAHs, leading to their mass transfer inside the cell (Seo et al., 2009).

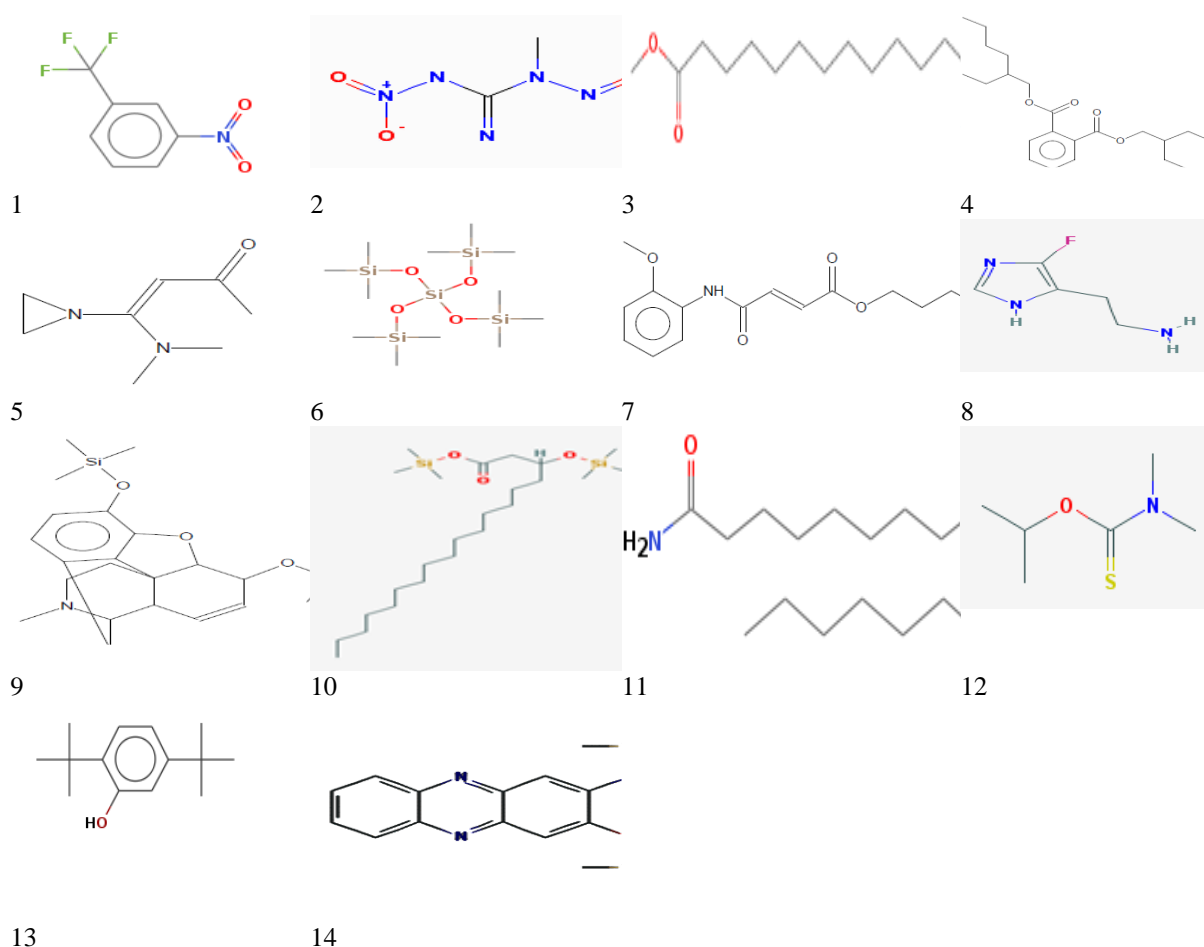


Fig 2: The major constituents compound structures produced from bioremediation PAHs

CONCLUSIONS

Two bacteria have been isolated from contaminated water and applied for PAHs degradation, hence produce new compounds with highly medical and industrial importance. All the compound were degraded after 15 days. Further research was needed to explore the within the PAH-degrading *Mycobacterium confluentis*, bacteria F and DF and mechanisms involved during the biodegradation of low and high-molecular weight PAHs.

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BIOREMEDIATION OF DISPOSED ENGINE OIL FOR LIPASE PRODUCTION

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ABSTRACT

Engine oil is one of the several refined products of crude oil. It is composed of long chain saturated hydrocarbons (base oil) additives. Generally, engine oil can enter into the environment through leak of oil tankers, cleaning of tanks by merchants, warship carrying engine oil, and operations by motor mechanics which is a common industrial waste that is harmful to environment and human health. This research aims to produce lipase enzyme using microbial degradation of disposed engine oil. In this study hydrocarbon-degrading bacterium, GS-3 was successfully isolated from oil contaminated area. GC-MS analysis revealed that this isolate was able to produce organic acid, methyl-3,4,5-trimethoxy-2,6-dinitrobenzoate from disposed engine oil. Besides, GS-3 isolate produced highest lipase activity, achieving $0.097 \pm 0.007 \text{ U ml}^{-1} \text{ min}^{-1}$ during first 24 hrs when disposed engine oil (DEO) was used as carbon source. Data revealed new and broad band which is related to O-H stretching formed at 3421 cm^{-1} , though new band occurred at 3424 cm^{-1} and 1645 cm^{-1} after bioremediation. Subsequent lipase optimization parameters revealed that this bacterial isolate could produce highest lipase activity when the 4% (v/v) DEO was used as carbon source. The best nitrogen source was urea. Addition of surfactant Tween 80 could also enhanced lipase production. Optimal pH value and temperature was 7.0 and 30°C respectively.

Keywords: Biodegradation, Disposed engine oil, Lipase, Optimization

INTRODUCTION

Engine oil (lubrication oil) is one of the products from base oils produced through distillation of petroleum. It is non-volatile liquid and functions to reduce friction between two moving parts, playing key role in the maintenance of motor and internal combustion engines. After being drained out from automobile or generator engine, it is then referred to as disposed engine oil. According to Environmental Quality (Scheduled Wastes) Regulations 2005, it is mandatory to recycle or dispose used engine oil at licensed facilities to prevent pollution. Despite the enforcement of rules and regulation, case of indiscriminate disposal of used engine oil remains prevalent because it is cheaper than transporting it to recycling facility. Disposed engine oil is mainly composed of long chain hydrocarbon and some amount of heavy metal (Kupareva et al, 2012). Precise description of the chemical composition of disposed engine oil is not practicable due of its complexity (Amro, 2004). Indiscriminate disposal of used engine oil will cause environmental problem as it will infiltrate into the soil, resulting in depletion of nutrients necessary for growth of plants (especially nitrogen and phosphorus) and affect physical properties of soil Amadi et al., (1993). Disposed engine oil is recalcitrant pollutant. It contains long chain saturated and aromatic hydrocarbon. Therefore, effective biodegradation of disposed engine oil requires concerted effort of a consortium of microorganism, be it prokaryote or eukaryote. Moreover, the presence of heavy metals and polycyclic aromatic hydrocarbon might hinder the microbial degradation process Lee et al. (2008). So, it is challenging to isolate a single microorganism that can degrade wide range 7 constituents of the disposed engine oil. Bacteria that have been reported to be good engine oil degrader include *Pseudomonas*, *Enterobacter*, *Bacillus*, *Staphylococcus*, and many others (Obayori et al., 2014; Borah and Yadav, 2014; Stephen et al., 2013; Thavasi et al., 2011; Thatheyus and Ramya, 2014). Several studies had confirmed the negative impacts of disposed engine oil to the environment and its potential threat to public health. Kayode et al. (2009) reported that used engine oil is toxic and has considerable adverse effect on the growth of plant. He proposed that presence of used engine oil in the soil would inhibit the seedlings and the extent of growth inhibition in the seedlings is proportional to the concentration used oil pollutants. When it is disposed of into the soil, the aeration of soil would be dramatically impacted because the oil absorb recalcitrantly to the soil particles (Alloway and Ayres, 1997). Spilled engine oil on the land could be transferred rapidly to aquatic environments by rain and runoff waters. This study aims to degrade hydrocarbon- bacterium GS-3 through isolating it from oil contaminated area at Kuantan – Pahang/ Malaysia.

MATERIALS AND METHODS

Sample Collection

Oil contaminated soil samples were collected in the vicinity of automobile workshop at Kuantan Pahang Malaysia. A soil sample was collected 10 cm depth from the surface of the soil to avoid sample contamination, and being stored in sterile bottles. Soil samples were crushed using mortar and pestle, thoroughly mixed and sieved through a 2 mm pore size sieve

to remove unwanted large debris. The sieved soil was kept in polyethylene bag, closed tightly and stored at 4 ± 1 °C.

Media Preparation

Bushnell Haas (BH) broth medium was used to isolate engine oil-degrading bacteria (Bhattacharya et al., 2015). The medium composition was as follows: (g/L) $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ 0.2, K_2HPO_4 1.0, KH_2PO_4 1.0, FeCl_3 0.05, NH_4NO_3 1.0, CaCl_2 0.02 with final pH of 7.2. The prepared medium WAS sterilized using autoclave at 121°C for 15 minutes. about 50 mL of autoclaved BH broth was prepared in 250 mL Erlenmeyer flask and supplemented with 2% (v/v) disposed engine oil as sole carbon source for microbial growth.

Isolation of Hydrocarbon-Degrading Bacteria

Isolation of disposed engine oil-degrading bacteria was carried out using the method of Sivapuram (2011). One gram of oil-contaminated soil sample was suspended in 10 mL sterilized distilled water and vigorously shaken. Then, 1 mL of mixture was transferred into 50 mL of BH medium and incubated at 30°C at 170 rpm for 7 days. After incubation period, 1mL of fermentation broth was withdrew and diluted with 6 dilutions series of each 10^{-1} fold using sterile distilled water. A 100 μL aliquot of each fifth and sixth dilution series was taken and plated onto BH agar enriched with 1% disposed engine oil and nutrient agar supplemented with 1% disposed engine oil respectively. Bacterial colonies that showed different morphological characteristics were picked and purified to nutrient agar supplemented with 1% disposed engine oil by streaking technique until single colony was obtained.

Screening of Extracellular Lipase Producing Bacteria

Two types of screening agar, namely tributyrin agar (TBA) and olive oil with phenol red agar were used to screen extracellular lipase enzyme PRODUCTON. Tributyrin agar medium comprised of tributyrin (1% w/v), CaCl_2 (0.1% w/v), and agar (2% w/v). The prepared agar was adjusted to pH 7.0 before autoclaved at 121°C for 15 minutes. The olive oil agar plates were prepared by incorporating phenol red (0.01% w/v), olive oil (0.1% v/v), CaCl_2 (0.1% w/v), and agar (2% w/v). The prepared agar was adjusted to pH 7.3 before autoclaved at 121°C for 15 minutes. All isolated oil-degrading bacteria were screened for extracellular lipase activity using qualitative and quantitative assay.

Qualitative Screening Method

Qualitative assay was done by streaking the bacterial isolates onto TBA and olive oil with phenol red agar respectively (Lee et al., 2015). Culture plates were incubated at 30°C for 24 hours. According to Sagar et al. (2013), formation of clear halo zone around the colony on TBA indicates extracellular lipase enzyme production. While for the olive oil with phenol red agar, lipase-producing bacteria would turn the red dye into yellow color. These positive colonies for lipase enzyme production were then inoculated on agar slants and subsequently incubated at 30°C overnight before storing at 4°C as stock culture for further use.

Quantitative Screening Method

Two loops of 24 hours-incubated petri dish culture was inoculated into 50 mL nutrient broth (NB) supplemented with 2% of disposed engine oil. The culture was incubated for 24 hours at 30°C and 150 rpm in the incubator shaker. Overnight culture was suspended in 0.9% (w/v) Sodium Chloride (NaCl) solution to obtain initial cell density of 0.5 McFarland standards. The preparation of McFarland Standard could be referred to Appendix C. Submerged microbial culture was incubated in 250 mL Erlenmeyer flasks containing 50 mL of BH broth with 2% disposed engine oil and inoculated with 1 mL with bacterial suspension. After 24 hours of incubation, the culture was centrifuged at 10,000 rpm for 20 minutes at 4°C. Cell free filtrate obtained was used as crude enzyme. Quantitative assay was carried out by determining lipase activity using titrimetric assay as per Mustranta (1992). The reaction mixture containing 5 mL olive oil emulsion and 4 mL of 100 mM pH 7 sodium phosphate buffer. After that, 1 mL of crude enzyme was added into the reaction mixture and incubated at 30°C and 250 rpm for 2 hours. A control was established by using 1 mL of crude enzyme, which is pre-heated at 100°C before added into a reaction mixture. The reaction was stopped by the addition of 5 mL of acetone–ethanol mixture (1:1 v/v) after 2 hours of incubation. The amount of fatty acid liberated was titrated with 0.05 N NaOH solutions to a final pH of 10.0. One lipase enzyme unit was defined as the amount of enzyme required for the release of 1 µmol fatty acid per minute under the assay conditions. Enzyme activity was expressed as units (U) per milliliter of enzyme extract and could be calculated using Equation 1.

$$\text{Lipase Activity (U/mL/min)} = \frac{N[\text{NaOH}] \times \text{Volume NaOH titrated} \times 1000}{\text{time of incubation}} \quad (1)$$

Selection of Most Potent Bacteria

The selection of most competent bacteria was based on largest halo zone on TBA agar, largest yellow zone olive oil agar, and showed highest extracellular lipase activity was used in the preset study. Partial identification of bacterial isolates was subjected to differential staining as described by Tiwari et al. (2007) to identify gram reaction of the chosen bacterial isolates.

Recovery of Crude Extract

The fermentative product was extracted using liquid-liquid extraction technique as described by Eniola and Ogasola (2014). A 50 mL of trichloromethane was added to broth culture in conical flask and shaking thoroughly. The mixture was then transferred into separating funnel and allowed to stand for two hours. The layer containing the organic phase and residual oil was emptied into a beaker. After that, the crude extracts were subjected to GC-MS and FTIR analysis for identification of component in the crude extract.

Protein Determination

The extracellular protein content was determined according to (Lowry *et al.*, 1951). Bovine serum albumin (BSA) was used as protein standard. The protein standard curve was carried out in dark environment. Different concentrations of BSA were prepared from range of 0.0 to 0.8 mg/ml.

Optimization of Parameters for Lipase Production

The effect of concentration of disposed engine oil as carbon sources for lipase production was studied different concentrations of disposed engine oil from 1% to 4% whereas other parameters unchanged. Effect of nitrogen sources on the lipase activity was studied by replacing the original nitrogen source, ammonium nitrate with three other nitrogen sources, namely urea, peptone, and ammonium sulfate at concentration of 1% (w/v). Culture using the original nitrogen source, ammonium nitrate was established and served as control. Effect the addition of different surfactants on lipase enzyme production was analyzed by using three different surfactants, namely Tween 80, Tween 20, and triton X-100. These surfactants were tested individually at amount of 50 μ L in the BH medium with 2% disposed engine oil. Culture without surfactant was served as control. Other parameters remained unchanged. The effect of incubation temperature on lipase activity was studied in range of 30 to 50°C. The microbial isolate was grown on BH medium at temperature of 30, 40, and 50°C respectively. The lipase activity was measured every 24 hours for 4 days. Other parameters were remained unchanged. The effect of initial incubation pH was performed by varying pH of BH medium from 6 to 9 whereas other parameters remain unaltered. The effect of trace element on lipase activity was carried out by individually removing trace element, FeCl₃, MgSO₄, and CaCl₂ from the production media. Control was established by using original BH medium without any ingredient removal. Other parameter remains unchanged. After incubation period of each parameter the lipase activity and extracellular protein content was measured every 24 hours until the end of experimental period.

RESULTS AND DISCUSSION

Isolation and Screening of Hydrocarbon-Degrading Bacteria

A total number of 10 disposed engine oil-degrading bacteria were successfully isolated from soils at different locations were symbolized as GS-1 to GS-10 isolates. Only 2 out of 10 hydrocarbon-degrading bacteria produced extracellular lipase enzyme. were GS-2 and GS-3 respectively. Qualitative isolates screening method showed that both isolates had same lipase activities. However, titrimetric assay showed that GS-3 was better lipase producer according to higher lipase activity (Table 1 and 2).

Table 1: The diameter of zone formed on two difference screening agar

Screening Media	Bacterial isolates zone diameter (mm)	
	GS-2	GS-3
Tributylin agar	5	5
Olive oil with phenol red agar	5	5

Table 2: Lipase activity of bacterial isolate GS-2 and GS-3

Incubation time (hour) of Bacterial isolates	Lipase Activity (U/mL/min)	
	GS-2	GS-3
24	0.058 \pm 0.010	0.097 \pm 0.007

The growth of microorganism was relatively slower on BH agar plate as compared to that on nutrient agar supplement with 1% disposed engine oil. About four days of incubation were required for colony to be visible on BH agar. On the other hand, distinguished colony could be observed after 48 hours when nutrient agar with 1% disposed engine oil was used to grow microorganism. This result suggested that growth of microorganism is slow when disposed engine is used as sole carbon sources as it is not a favorable carbon source for microorganism. This result was agree with Gagandeep and Malik (2013) reported that *Pseudomonas* sp. required 9 days to reach stationary phase of growth when engine oil was used as sole carbon source, also Pandey (2013) showed that *Pseudomonas fluorescenes* reached stationary phase at 5th day. Generally, disposed engine oil is composed of broad range of hydrocarbon, with chain length varied from C16 to C32 (Kupareva et al., 2012). Besides, it possesses properties of low solubility and high hydrophobicity, resulting them recalcitrant for biodegradation. Therefore, microorganism exhibits slow growth rate when engine oil is utilized as carbon sources partial identification of bacterial isolate gs-3 using gram-staining revealed that belongs to Gram negative bacteria.

Fourier Transform Infrared Spectroscopy (FTIR) Analysis

Data represented in Figure 1 and 2, revealed new and broad band which is related to O-H stretching formed at 3421 cm^{-1} . Besides, new band could also be observed at 1706 cm^{-1} and 1649 cm^{-1} , which was associated occurrence of these bands, signified the formation of carboxylic acid after 2 weeks of biodegradation.

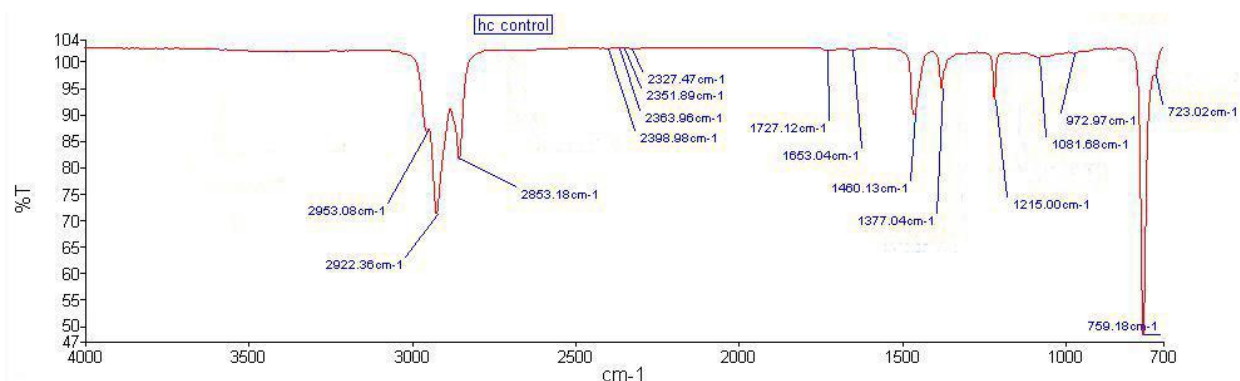


Figure 1: FTIR analysis profile of control sample

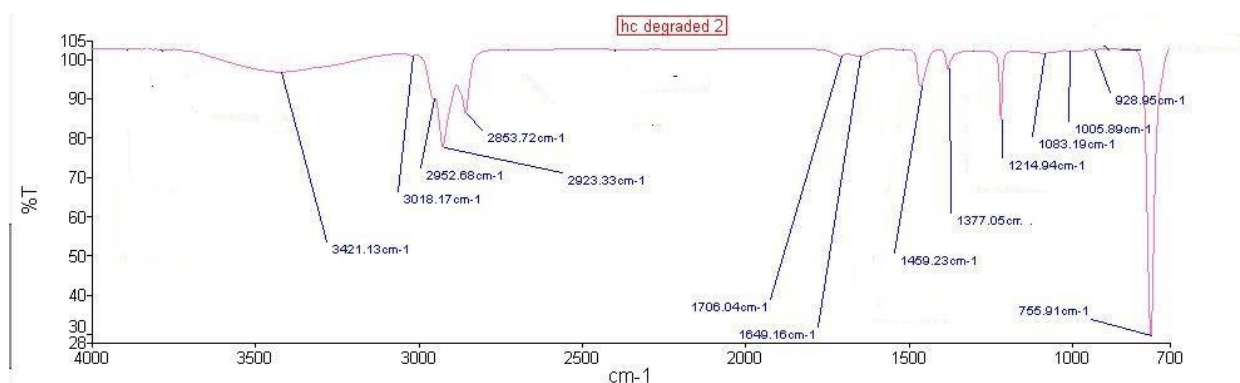


Figure 2: FTIR analysis profile of degraded engine oil after 14 days of incubation

This result is corresponding to that of Dominguez-Rosado and Pichtel (2003), who remediated disposed engine oil utilizing phytoremediation technique and remarked that carboxylic acid is one of the intermediates which were produced along the biodegradation process. They reported that new band occurred at 3424 cm^{-1} and 1645 cm^{-1} after bioremediation. Besides, Sadouk et al. (2009) also reported that carboxylic acids.

Gas Chromatography - Mass Spectrometry (GC-MS) Analysis

GC-MS analysis revealed that crude extract recovered from disposed engine oil after biodegradation contained 3 major compounds: hydrocarbon, alcohol, and carboxylic acid (Table 3). The major component formed was benzoic acid with 89%.

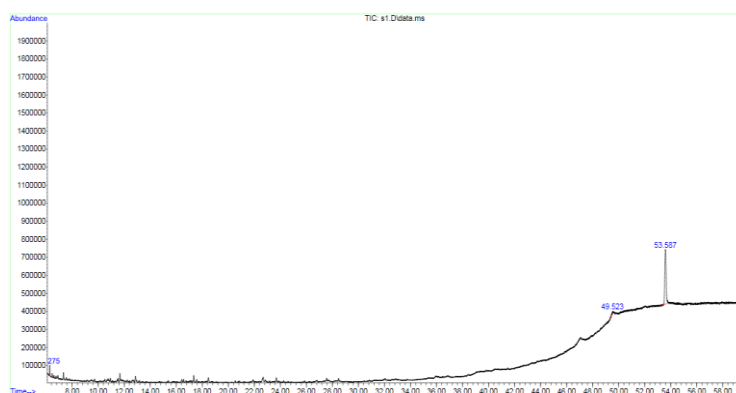


Figure 3: GC-MS chromatogram of recovered crude extract

Figure 3: GC-MS chromatogram of recovered crude extract which are hexadecanoic acid and octadecanoic acid were the major component formed during biodegradation of diesel oil. Subsequent GC-MS analysis confirmed the presence of carboxylic acid in the degradative engine oil. according to data recorded in Table 3, GC-MS analysis showed that extracted product contains high percentage of methyl 3,4,5-trimethoxy-2,6-dinitrobenzoate, small amount of complex alcohol, and aliphatic hydrocarbon of nonadecane sources by GC-MS analysis.

Table 3: Chemical structure of crude extract produced by GS-3 grown on disposed engine oil as sole carbon

Peak	Retention time (minute)	Name of Compound	Area (%)
1	6	Nonadecane	6.11
2	49.5	3,3,7,11 – Tetramethyltricyclo-[5.4.0.0 (4,11)]-undecan-1 –ol	4.88
3	53.6	Benzoic acid, 3, 4, 5-trimethoxy- 2,6- dinitro-methyl ester	89.00

Two engine oil-degrading bacteria, GS-2 and GS-3 were successfully isolated from soil. However, both of the isolated bacteria possess low lipase activity, exhibited only 0.058 and

0.097 U/mL/min respectively after 24 hours of incubation. This is understandable because lipase activity is generally low when hydrocarbon or petroleum is used as carbon sources. Kanwar et al. (2002) only successfully produced maximum 25 U/mL/h of extracellular microbial lipase using analytical grade of *n*-hexadecane as the sole carbon source for *Pseudomonas* species G6. Balaji et al. (2014) also reported that *Penicillium chrysogenum* only exhibited highest lipase activity of 68 U/mL/h during 7 days of incubation. Up to date, only few accessible literatures studied the lipase activity during biodegradation of used engine oil. Over years, researches regarding production of lipase enzyme have been focusing on using lipidic substances such as olive, coconut, or castor oils, all of which are proven to be good substrates for extracellular lipase production. Only few researches have been focusing on production of lipase enzyme using non-lipidic substrates of hydrocarbon. Therefore, comparison of current study to others cannot be done holistically. GS-3 was chosen over GS2 for extracellular lipase enzyme production because it had higher lipase activity, achieving 0.097 ± 0.007 U/mL/min on first day. Besides, the extracellular protein content also showed the similar result when protein content WAS highest during first 24 hour of incubation. However, the protein content did not precisely reflect the total extracellular lipase content because other enzyme would also be secreted along the degradation process of disposed engine oil. Adam et al. (2014) reported that oxidase, catalase, lipase, and peroxide were the common extracellular enzymes which would be excreted during biodegradation of engine oil. Further study needs to be carried out to confirm other extracellular lipase enzyme that secreted by GS-3 isolate besides lipase.

Optimization of Lipase Production

Extracellular lipase activity of lipase production by GS-3 over 96 hours of incubation

Protein standard curve was constructed before this experiment Bacterial isolate GS-3 was able to produce highest lipase activity after 24 hours of incubation period, recording 0.097 ± 0.007 U/mL/min with protein content of 0.4651 ± 0.010 mg/ml Figure 4.

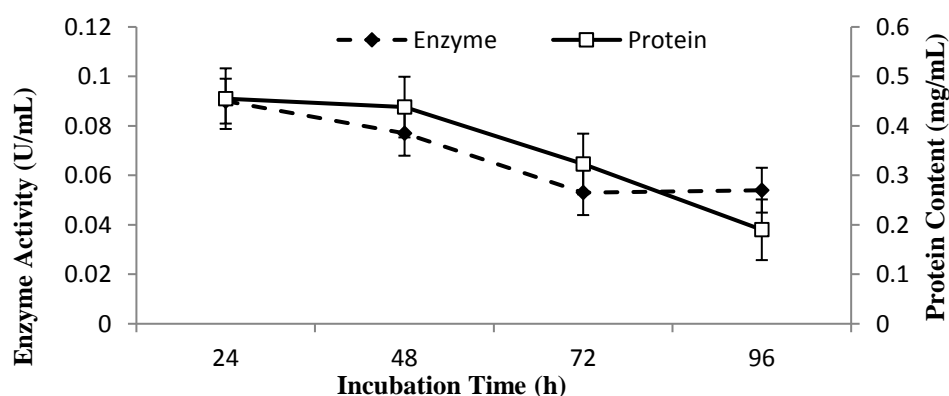


Figure 4: Extracellular lipase activity of lipase production by GS-3 over 96 hours of incubation

Effect of disposed engine oil concentration

Data represented in Figure 5 illustrated that lipase activity of GS-3 bacterial isolate was highest when 4 % (v/v) disposed engine oil was used as carbon source, achieving 0.161 ± 0.067 U/mL/min during first 24 hours of incubation. The protein content was also measured to be

0.850± 0.031 (mg/ml). The effect of different concentrations of disposed engine oil as carbon source on lipase activity was studied in this research and revealed that Gs-3 isolate was able to produce extracellular lipase enzyme in range of 1 until 4% of disposed engine oil, suggesting no inhibition effect of disposed engine oil on enzyme production within this range. During first 24th hour, lipase activity WAS highest at 4% recording 0.161 ± 0.067 U/mL/min, followed by 3 and 2%, whereas 1% trailed the most, registered only 0.079 ± 0.003 U/mL/min of lipase activity. This data supported the theoretical statement of Margesin et al. (2002), who opined that lipase activity could be induced and was favored at high petroleum concentration.

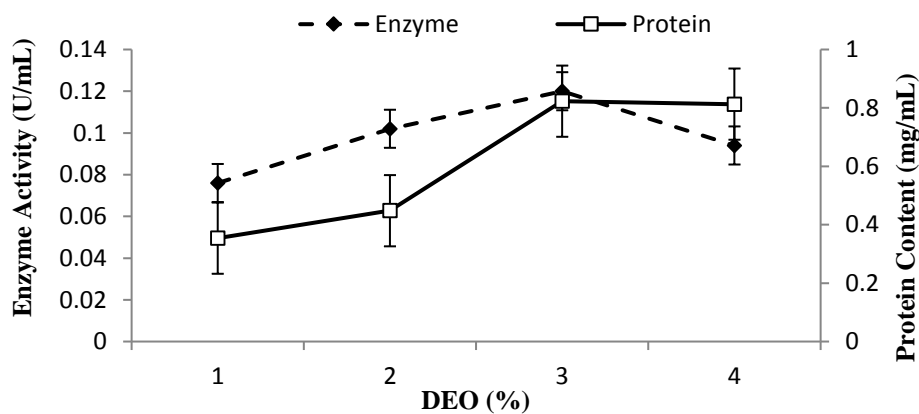


Figure 5: Effect of different disposed engine oil concentration on lipase activity over 24 hours of incubation period

Effect of different nitrogen sources

Data represented in Figure 6 showed that urea was the best nitrogen source for extracellular lipase production during first 24 hour of incubation, achieving lipase activity of 0.240 ± 0.063 U/mL/min and protein content up to 0.722 ± 0.001 mg/ml . While protease peptone was a poor nitrogen source for lipase production of GS-3 isolate as the lipase activity was extremely low, recorded only 0.010 ± 0.001 U/mL/min on first day. Urea as nitrogen source enhanced lipase production up to 0.240 ± 0.063 U/mL/min during 24th hour of incubation, approximately 1-fold higher than that of control sample which used ammonium nitrate as nitrogen source. Comparing to ammonium sulfate and ammonium nitrate, urea seemed to be unstable nitrogen sources for extracellular lipase enzyme produced BY GS-3 isolate.. Although ammonium nitrate and ammonium sulfate as nitrogen sources could not produce high lipase activity as urea did on first day. Both of them produced lipase activities that varied within range of 0.80 to 0.125 U/mL/min. On the other hand, protease peptone was found out to be poor nitrogen sources for GS-3 isolate for lipase production as it was only able to give lipase activity as low as 0.010 U/mL/min on first day. Therefore, This study showed that inorganic nitrogen sources were better than organic nitrogen sources for lipase production BY GS-3. In contrast Sujatha and Dhandayuthapani (2013) reported that urea inhibited lipase production at concentration above 0.5 mg/L as it is toxic to the culture as high concentration of ammonia produced during urea degradation is toxic to bacteria. This might as well explain the drastic decrease of GS-3 isolate's lipase activity over 4 days when urea was used as nitrogen source. The current also contradicted to other researches which reported that organic nitrogen source was generally better than inorganic source. Gupta *et al.* (2004) reported that organic sources were better than inorganic sources because ammonium salt creates acidic condition due to liberation of free acid

after the utilization of ammonium ions, which might eventually inhibit or interfere the lipase secretion. However, the choice of nitrogen sources for optimal enzyme activity was various among microorganism (Burkert et al., 2004)

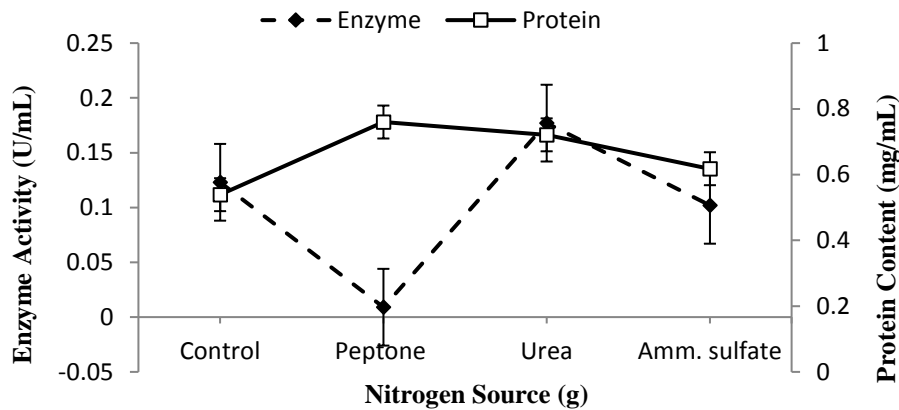


Figure 6: Effect of different nitrogen sources on lipase activity over 24 hours of incubation period

Effect of initial pH on lipase activity

Data represented in Figure 7 showed the lipase activity of isolate GS-3 over different range of initial pH. Result showed that pH 7 was the optimal initial pH for lipase production achieving 0.095 ± 0.002 U/mL/min and protein content up to 0.665 ± 0.086 mg/ml after 24 hours of incubation.

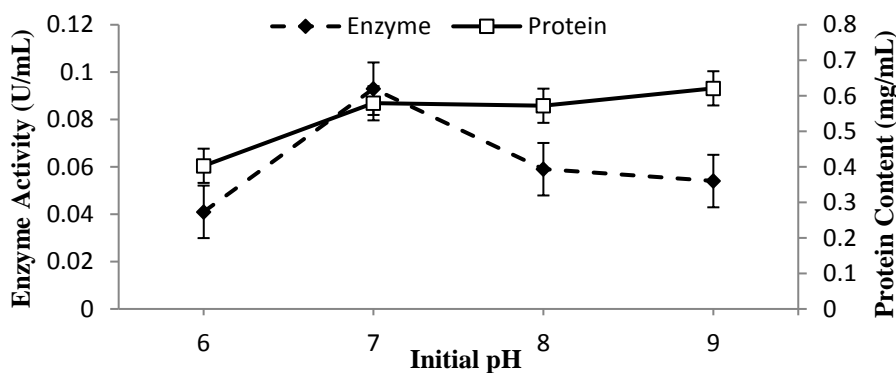


Figure 7: Effect of different initial pH on lipase activity over 96 hours of incubation period

Like temperature, pH was also affecting the metabolic activities of a microorganism. Referring Figure 4, different initial pH affected the extracellular lipase activity of GS-3 isolate. The result showed that lipase production was stable from pH 6 to 9, with highest extracellular lipase activity achieved at pH 7, when 0.095 ± 0.002 U/mL/min lipase activity WAS obtained at first 24th hour of incubation. This suggested that GS-3 is a neutrophilic microorganism. When GS-3 was incubated in production medium of initial pH 9, the main problem of using disposed engine oil as carbon source was the insolubility of engine oil.

Effect of incubation temperature

Data represented in Figure 8 showed that after 24 hours of incubation, the lipase activity reached the highest yield of 0.125 ± 0.013 U/ml/min at 30°C of incubation temperature while lowest enzyme activity observed at 50°C , recorded as 0.051 ± 0.007 U/mL/min during the same period. With protein content up to 0.580 ± 0.010 mg/ml.

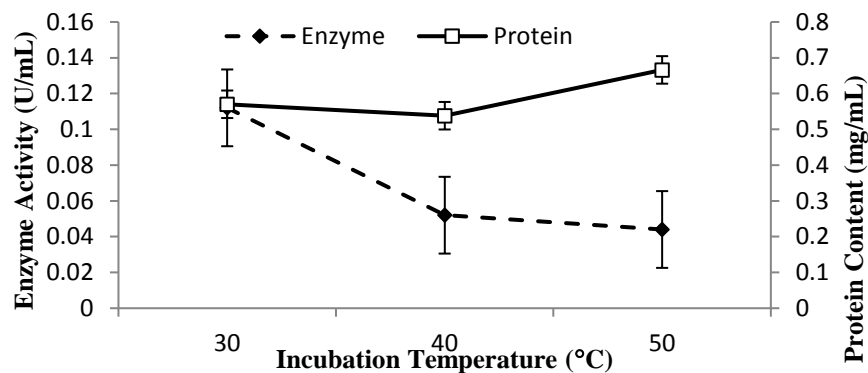


Figure 8: Effect of incubation temperature on lipase activity

Referring Figure 8, data revealed that 30°C was the optimal temperature for lipase production as lipase activity was the highest compared with incubation temperature of 40°C and 50°C . GS-3 isolate produced highest extracellular lipase activity at 30°C of first 24h incubation, achieving 0.125 ± 0.013 U/mL/min. This data also showed that GS-3 isolate was mesophilic microorganism. Optimal temperature favoring metabolic and enzymatic activities throughout incubation period. Often, optimal cultivation temperature varies among microorganism. However, 30°C was found out to be the optimal temperature for lipase enzyme production of many other microorganisms. For example, Mukesh et al. (2012) reported that 30°C was the best temperature for *Bacillus* sp. MPTK 912 for production of lipase enzyme from oil mill effluent. Besides, Narasimha et al. (2011) also found out that *Pseudomonas* sp. has highest extracellular lipase activity at the same temperature when olive oil was used as carbon sources.

Effect of different surfactants

Figure 9 represent the lipase activity was achieved with addition of different surfactants. Tween 80 could enhance the lipase activity to the highest on 24 hours of incubation, reporting 0.221 ± 0.001 U/mL/min. The protein content was also measured and recorded in as 1.907 ± 0.031 mg/ml.

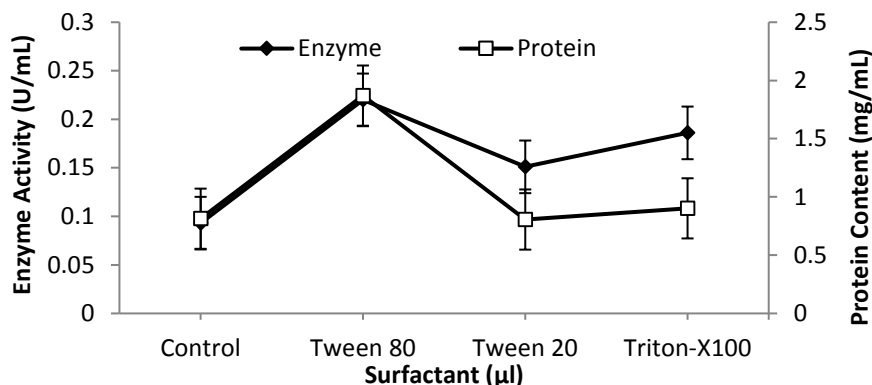


Figure 9: Effect of addition of different surfactants on lipase activity over 24 hours of incubation period

Engine oil is hydrophobic in nature and is not miscible with water. Addition of surfactant into the production medium would improve the solubility of engine oil, which in turn, increases the bioavailability of substrate to bacteria (Liand, 2005). The commonly used surfactants are Triton X-100, Tween 80, and Tween 20, all of which were used in this study to investigate its effect on extracellular lipase enzyme production. The result revealed that all the surfactant used could enhance lipase production significantly at 24 hour of incubation. Referring Figure 9, all three surfactants enhanced the lipase production for approximately 2-fold, with the utilization of Tween-80 provided most promising result when it increased lipase activity to 0.221 ± 0.001 U/mL/min during 24 hour, followed by Triton X-100, registered 0.189 ± 0.003 U/mL/min and Tween-20, recording 0.179 ± 0.028 U/mL/min at the corresponding period. According to Immanuel et al. (2008), Tween-80 plays double role on biodegradation of engine oil. It can induce the production of lipase enzyme besides playing role as an emulsifying agent which increases the solubility of engine oil in medium, rendering them more accessible for biodegradation. Wu and Tsai (2004) also reported that higher level of lipase production could be achieved when Tween-80 was incorporated into a medium with lipidic substrate because it can emulsifying the oil, subsequently lower the interfacial tension between oils and water and resulting increase of cell permeability, thus possibly facilitates enzyme secretion. Referring to Figure 9, lipase activity was lower in the medium supplemented with Tween-20 and Triton X-100 during 48 and 72 hour of incubation as compared with control sample, which had no surfactant. This might be due to the inhibition of surfactant on lipase production. Koley and Bard (2010) reported that if cells are subject to prolonged exposure to Triton X-100, this chemical compound would disrupt hydrogen bonding present within the cell's lipid bilayer, leading to the destruction of the integrity of the lipid membrane.

Effect of ingredient removal from production medium

Removal of FeCl_3 from production medium could enhance the lipase activity up to 0.142 ± 0.048 mg/ml after 2 hours of incubation while removal of MgSO_4 and CaCl_2 would adversely impact the lipase activity. With protein content up to 0.572 ± 0.014 mg/ml.

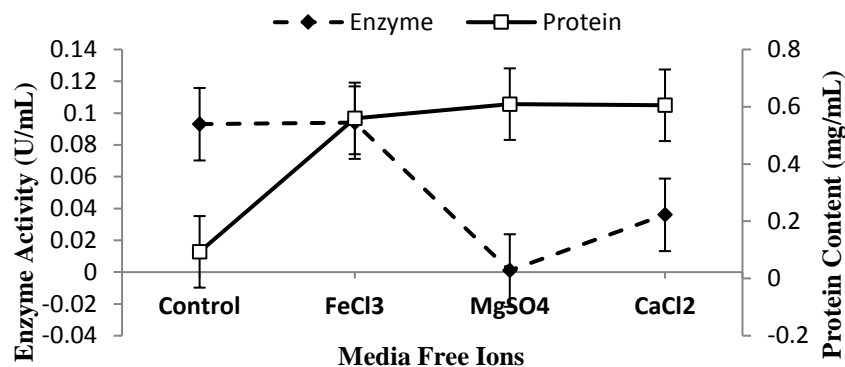


Figure 10: Effect of ingredient removal from production medium on lipase activity over 24 hours of incubation period

The effect of trace element on lipase activity was studied. As previously discussed, lipase activity WAS generally low when disposed engine oil is used as sole carbon source. Besides, the exact chemical composition of disposed engine oil used as substrate for this study remains unknown. Therefore, it was worth to identify the compound in the production media that inhibit the lipase activity, especially trace element like Fe³⁺ and Ca²⁺. DATA represented in Figure 10, showed that removal of FeCl₃ from production medium could increase lipase activity. The production medium without FeCl₃ was 0.142±0.048 U/mL/min, approximately 1.5-fold higher than control sample during 24 hour incubation, which produced lipase activity of 0.095±0.002 U/mL/min. Therefore, data revealed that FeCl₃ inhibited lipase enzyme of GS-3 isolate. Besides, MgSO₄ and CaCl₂ were essential nutrients for GS-3 isolate as removal of them from production medium significantly reduced the lipase activity.. Without CaCl₂, lipase activity halved as compared with control sample throughout the incubation period. Simons et al. (1999) reported that calcium ion was important for structural stabilization of lipase enzyme. Up to date, there is no consistent trend has been reported regarding the effect of metal ion on lipase activity (Shangguan et al., 2011). According to Ali et al. (2009), FeCl₃ drastically inhibit lipase activity FROM *Aspergillusniger* at low concentration. Besides, Fe³⁺ ion also inhibited the lipase activity from *Bacillus subtilis* (Ma et al., 2006) and *Staphylococcus* sp at 200 ppm as per Tembhrkar et al. (2012). However, some researches showed contradictory result. For lipase enzyme, metal ion plays important role in structural property rather catalytic property. Acikel et al. (2011) suggested that metal ion will inhibit lipase enzyme activity by reacting with –SH groups of lipase enzyme molecule through oxidation. Liebeton et al. (2001) also remarked that presence of –SH groups in the lipase molecules resulting them to be intrinsically unstable. When metal ions react with –SH groups in the side groups of cysteine residues, tertiary structure of enzyme will be altered subsequently change .The shape of the active site and thus the enzyme becomes deactivated. Therefore, like nitrogen sources, the effect of trace elements on lipase activity varies among bacteria.

CONCLUSION

This research project was successfully being carried out. Hydrocarbon-degrading bacteria, namely GS-3 was isolated from oil-contaminated soil. It was able to produce complex alcohol and organic acid from disposed engine oil. It is able secrete extracellular lipase, which is an industrially important by-enzyme. This research also demonstrated that optimization of

production medium was very important in enhancing lipase activity. The best nitrogen sources for maximum lipase production during first 24 hours were urea. Removal of FeCl₃ from production medium could increase lipase production to 0.142±0.048 U/mL/min, approximately 1.5-fold higher than control, suggesting that FeCl₃ inhibit the lipase enzyme production. Addition of surfactant, tween 80 could enhance lipase production. Besides, optimal cultivation pH and temperature of isolate GS-3 for maximum lipase production was revealed to be pH 7 and 30°C respectively.

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LACCASE AS BIO-PRETREATMENT STEP OF SAWDUST FOR ETHANOL PRODUCTION: OPTIMIZATION AND STATISTICAL MODELING

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ABSTRACT

For a successful refining of lignocellulosic biomass in production of bioethanol, it needs a delignification step to increase production of sugar. In this study, we use Laccase enzyme (as environment-friendly pretreatment) to pretreat sawdust and evaluate the degree of delignification after pretreatment in terms of weight loss percentage (%) and Total sugar produced (mg/dL). The parameters used in the optimization process was temperature (°C), pH, time of pretreatment (hrs), enzyme concentration (IU/g), substrate concentration (%), substrate size (mm) and speed of agitation (RPM). In order to achieve best condition of pretreatment, first, we use the one-factor-at-a-time (OFAT) analysis to see the significance of parameters then the Face-Centered Central Composite Design (FCCCD) of Response Surface Methodology (RSM) is used to study the combined effect of temperature and pH parameters. Our experimental results show that optimized conditions for sawdust pretreatment are: temperature, 35°C; pH 5; time, 10 hrs; enzyme concentration, 20 IU/g of sawdust; substrate concentration, 5% (w/v); sample size, 1 mm and Agitation, 150 rpm. The experiments also show a high pretreatment result considering energy sustainability which can be achieved by using sample Size of 2 mm, temperature of 25 °C and 4 hrs.

Keywords: Environment; Laccase enzyme; Pretreatment; sawdust; Bioethanol

INTRODUCTION

Concerns about exhaustion of the world's reserves of fossil fuels and about the negative impacts, such as greenhouse gas emissions associated with the combustion of these fuels have resulted in an increasing worldwide interest in using fuels from renewable resources, for instance ethanol. However, a reduction of the ethanol production cost is desirable to improve the competitiveness. As the sugar and starch-containing feedstocks traditionally used for ethanol production represent the largest share of the total production cost, the use of cheaper and more abundant raw materials is desirable for increasing the production. In recent years, the worldwide trends toward scientific and technological advances in the field of new fuels point to the importance of more efficient utilization of cellulosic feedstock's (agro-industrial and other residues) as raw material in the ethanol production process. Lignocellulosic biomass (cellulosic biomass) is favourable because of its high abundance, low cost, and high-energy potential. Lignocellulose consists of three major components: cellulose, hemicellulose, and lignin. These components are contained within the primary and secondary cell walls of plants. A huge diversity of lignocellulosic wastes is available around the world. Sugarcane bagasse, rice hulls, peanut shells, and cassava stalks are agricultural and agro-industrial residues that could be considered for bioconversion in tropical countries. These lignocellulosic residues are available on a renewable basis as they are generated during harvesting and processing of agricultural and forest products; sugar cane, rice, peanuts, cassava, wood residues (including sawdust and paper mill discards), grasses, waste paper, straws of different grains, stover, peelings, cobs, stalks, nutshells, non food seeds, domestic wastes (lignocelluloses garbage and sewage), food industry residues, municipal solid wastes. Pretreatment and enzymatic conversion of lignocellulosics are crucial steps to overcome lignocelluloses recalcitrance in the conversion to ethanol.

Laccase enzyme pre-treatment has been studied extensively for few woody residues. Interest into the role of laccases on lignin degradation has developed due to reports of some white rot basidiomycetes that are found to degrade lignin or lignin model compounds in the absence or deficiency of LiP and/or MnP. The degradation mechanisms by other enzymes such as laccase or aryl-alcohol oxidase (AAO) can predominate in lignin depolymerisation. . From an economical and environmental standpoint, the filtration and washing steps should be avoided since they increase operational costs and generate wastewater. For these reasons, enzymatic pretreatment using laccase has been explored (Moreno et al. 2012; Rico et al. 2014).

The main aim of the study is to provide a rapid, feasible, industrially achievable, and environmentally sustainable pretreatment process that is reliable and efficient in the delignification of lignocellulosic biomass, such as sawdust.

RSM is very useful in identifying the important parameters and interactions between two and more parameters in a few experiments. The main reason for doing OFAT is to screen out the parameters for further study by response surface methodology and to determine the best optimal conditions for the production of sugars.

MATERIALS AND METHODS

Biomass Collection

Sawdust was collected from the residues of different wood mills, Pahang, Malaysia, air dried, milled, then sieved to obtain four different sizes of sawdust. This done by using instruments inside the laboratory of Faculty of Industrial Science and Technology (FIST), Universiti Malaysia Pahang, Malaysia.

Biomass Characterization

The total biomass contents (moisture, lignin, cellulose, hemicellulose and ash content) will be fractionated sequentially using slight modified methods of Datta (1981).

Water soluble content estimation

Weight of 1g of dried sawdust (W1) was suspended in 100 ml distilled water, and kept in a water bath at 100°C for 2 hours, Then filtered on a crucible; the residue was oven dried at a temperature of 80°C until a constant weight is achieved (W2). Loss in weight was considered as water soluble part of the lignocellulose and can be calculated using the following equation 1.

$$\text{WSC} = \frac{\text{weight 1} - \text{weight 2}}{\text{weight 1}} \times 100 \quad (1)$$

Hemicellulose content estimation

The dried Weighed residue from above treatment was suspended in 100 ml of 0.5 M H₂SO₄ and kept in a water bath for 2 hours at 100°C. After two hours, the contents filtered, dried at 80°C and weighed (W3). The loss in weight was considered as hemicellulose content. Refer to equation 2.

$$\text{HC} = \frac{W2 - W3}{W2} \times 100 \quad (2)$$

Cellulose and lignin content estimations

10 ml of 72% (v/v) sulphuric acid was added to the dried residue from above treatment and kept for 1 hour on a rotary shaker (200 rpm) at 30°C. After incubation, the mixture was diluted with distilled water down to 4% (v/v) of sulphuric acid and autoclaved at 1.06 kg/cm² (at which temperature is 121 °C) for 40 min. The contents filtered, dried at 80°C and weighed again (W4). The loss in weight considered as cellulose, and the leftover residue was counted as lignin content of sawdust. Refer to equation 3.

$$\text{CC} = \frac{\text{weight 3} - \text{weight 4}}{\text{weight 3}} \times 100 \quad (3)$$

Ash Content Estimation

Tube Furnace was used to estimate ash content of 1 g of sawdust at 550 °C for 5 h in a tare crucible. After incineration, crucible cooled and the ash test result was expressed as % ash, calculated (equation 4) from the weight of the ash (mash) and the initial weight of the sample.

$$\text{Ash \%} = \frac{W \text{ of ash}}{W \text{ of sample}} \times 100 \quad (4)$$

Determination of Total Carbohydrate Content

By using optimized phenol–sulfuric acid method in microplate format described by T. Masuko et al. (2005) we can measure the total sugars in sawdust filtrate before and after pretreatment process. Then sugar concentration of samples could be read from a ready-made standard graph. Centrifuge samples at 5000 rpm for 5 min. to get the sample filtrates then in a microplate wells 150µL of concentrated sulfuric acid was added to 50 µL of sample filtrate followed immediately by 30 µL of 5% phenol After incubating for 5 min at 90 °C then the plate was cooled to room temperature for 5 min and wiped dry to measure A 490 nm by Infinite® 200 PRO multimode microplate reader.

Determination of Laccase Enzyme Activity by ABTS Method

The laccase enzyme activity of Novozyme 51003 from *Myceliophthora thermophila* was determined using ABTS reduction method as described by Bourbonnais and Paice (1992). The reaction mixture consisted of 0.1 M sodium acetate buffer, 0.4 mM ABTS solution, and pH 4.5 at 25 °C in a reaction volume of 0.6 mL, made up of 580 µL of ABTS-buffer solution and 20 µL of laccase enzyme. The experiment was maintained at 25 °C in a 1-cm light path cuvette. Absorbance was read at 420 nm, and the readings expressed in International Units/mL (IU/mL). The laccase enzyme stability was within 25 °C and 40 °C. One unit of the enzyme was defined as the amount of the laccase enzyme that will oxidize 1 µmol of ABTS per minute.

Optimization of the Bio-pretreatment Process (OFAT)

Pretreatment of the sawdust by biological catalysts (laccase) was carried out in lab-scale which conducted in the shake flasks. The optimization methods used was one-factor-at-a-time (OFAT) followed by FCCCD design of the Response Surface Methodology (RSM). Different parameters such as (biomass size and concentration, Enzyme concentration, Reaction time, pH of medium, agitation and temperature) was studied in this statistical optimization.

Delignification was evaluated by the percentage of weight loss, and by total sugar content after pretreatment. The process parameters was studied as described below.

Laccase enzyme concentration

Pretreatment carried out using Laccase enzyme concentration, 5, 10, 20, 30 and 40 IU/g with 5% substrate concentration, pH 5, Temperature RT, 10 ml reaction volume and the Substrate size 1 mm for 4 hrs on rotating shaker at 150 rpm.

Biomass (sawdust) size

Pretreatment carried out using Laccase enzyme concentration 5 IU/g with 5% substrate concentration, pH 5, Temperature 25, 10 ml reaction volume and the Substrate size was optimized using ≤ 5 mm, 1 mm, 2 mm, ≥ 2 mm for 4 hrs on rotating shaker at 150 rpm.

Biomass (sawdust) concentration

Pretreatment carried out using Laccase enzyme concentration 5 IU/g with 1, 5, 7 and 10 % sawdust concentration, pH 5, Temperature RT, 10 ml reaction volume and the Substrate size 1 mm for 4 hrs on rotating shaker at 150 rpm.

Time of pretreatment

Pretreatment carried out using Laccase enzyme concentration, 5 IU/g with 5% substrate load, pH 5.0, Temperature RT, 10 ml reaction volume and the Substrate size 1 mm for 4, 6, 8, 10 and 12 hrs on rotating shaker at 150 rpm

Temperature of pretreatment

The effect of temperature on the pretreatment process was studied at 25 °C, 37 °C, and 50 °C. Reactions contained a substrate concentration of 5% (w/v) and a laccase enzyme concentration of 5 IU/g of sawdust. The pretreatment processes were maintained at pH 5 for a time of 4 h and agitation at 150 rpm..

pH of medium

Pretreatment carried out using Laccase enzyme dose 5 IU/g with 5% substrate load, pH 3.0, 4.0, 5.0, 6.0, 7.0 and 8. Temperature RT, 10 ml reaction volume and the Substrate size 1 mm for 4 hrs on rotating shaker at 150 rpm.

Agitation rate

Pretreatment carried out using fixed Laccase enzyme concentration, 5 IU/g with 5% substrate concentration, pH 5, Temperature RT, 10 ml reaction volume and the Substrate size 1 mm for 4 hrs on rotating shaker speed at 100, 135, 150 and 200 rpm.

After using OFAT to study the effect of each process parameters, further study using FCCCD of the RSM was carried out to check the interaction of pH and temperature and their effect on the pretreatment process.

Optimization of the Sawdust Pretreatment Process in FCCCD

The Face Centered Central Composite Design (FCCCD) of the RSM were applied using Design-Expert software version 6.0.8 to design the interaction effect of pH and temperature on the pretreatment process. The low and high points of pH and temperature were fixed at 3 and 7, and 25 °C and 45 °C, respectively according to results obtained from OFAT studies. Laccase enzyme concentration of 5 IU/g of sawdust and substrate concentration of 5% (w/v); all were incubated at the agitation of 150 rpm for 4 hrs. The reactions were performed in triplicates and the results were presented as the mean of the triplicates.

RESULTS AND DISCUSSION

Constituents of Characterized Sawdust

The EFB constituents were characterized before and after pretreatment with laccase enzyme at optimized conditions using the method of Datta, (1981), and the results were as shown in Table 1. Lignocellulosic biomass consists mainly of cellulose and hemicellulose, with an appreciable amount of lignin, that forms rigidity to biomass cell along with the sugar bases. Cellulose is higher than that found in Meranti wood sawdust by I.S.M. Rafiqul, (2012) of percentage 41.06. Where water soluble content 5.9% is less than 7.15 % that found by Y. Huang et al. (2015).

Table 1: Constituents of characterized sawdust

	Water soluble part (%)	H-cellulose (%)	Cellulose (%)	Lignin (%)	Ash content (%)
Control/ non pretreated	5.9	14	50	4.9	10.4
Pretreated	-	21	61	3.1	-

OFAT Study of Sawdust Pretreatment Process Parameters

Effect of laccase enzyme concentration

The rate of enzymatic reactions increased with increasing enzyme concentration (Choi et al. 2013). The effect of laccase enzyme concentration at 5, 10, 20, 30, and 40 IU/g of sawdust was studied. The results illustrated in Figure 1 shown an increase in the rate of pretreatment when the enzyme concentration was increased from 5 IU/g to 10 IU/g, with sugar yield increasing from 2.6 mg/mL to 4.0 mg/mL and weight loss from 4.5 to 6.2 % respectively. At point of enzyme concentration of 20 IU/g, a maximum sugar yield of 6.3 mg/mL and weight loss of 9.1 were reached. Further increases in enzyme concentration to 30 IU/g and 40 IU/g of sawdust had no significant influence on the rate of pretreatment. These findings agreed with the reports of Rico et. al. (2014) treatments with laccase decreased the lignin content about 12% and 20% when using laccase doses of 10 U/g and 50 U/g, respectively.

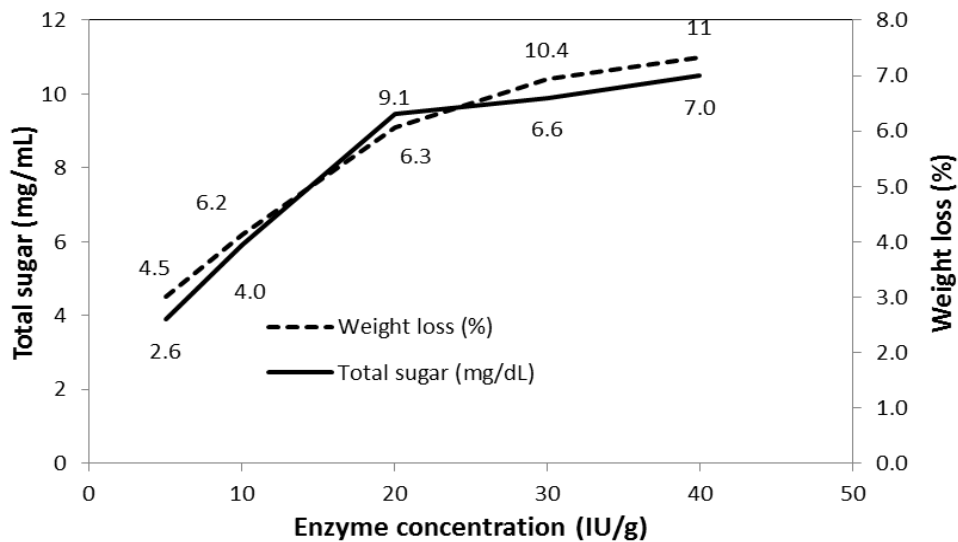


Figure 1: Effect of laccase enzyme concentration on enzymatic pretreatment of sawdust

Effect of the substrate size

The rate of biomass pretreatment is so far reliant on the size of the biomass used, (Rashid 2011). In this study, pretreatment was performed with four different SD sizes of ≤ 5 mm, 1 mm, 2 mm, ≥ 2 mm (Figure 2). At the substrate size of ≤ 5 mm, the percentage of weight loss was high this mainly due to loss of substrate during washing and filtration after pretreatment process as the part < 0.5 mm can't be maintained during filtration process. Where size of 1 mm was considered as the ideal biomass size for pretreatment process as more total sugar and high weight loss percentage of 5.1 mg/mL and 4.8 % respectively were achieved. Results obtained from higher substrate sizes were less valuable as larger surface area were less affected by enzyme and needs more time and enzyme concentration to release more sugar by enzyme degradation.

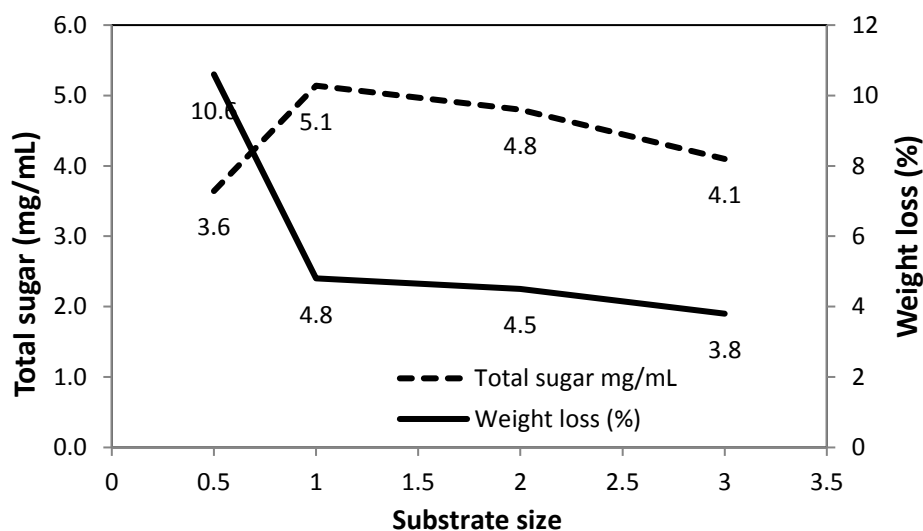


Figure 2: Effect of substrate size on enzymatic pretreatment of sawdust

Effect of substrate concentration

The rate of enzymatic reactions depends largely on enzyme and substrate concentrations where enzyme active sites were occupied by the substrate evenly. Higher substrate concentration reduce rate of reaction and lower substrate concentration increase enzymatic reaction rate. In this study, the influence of substrate concentration was determined by varying the substrate concentrations as 1, 5, 7 and 10 % (w/v) with constant enzyme concentration of 5 IU/g of sawdust. At 1 % (w/v) in (fig. 3) the total sugar produced 1.7 that mean insufficient substrate to be engaged with enzyme but at substrate concentration of 5% (w/v) higher total suger produced of 3.4 mg/mL and 6.0 % weight loss. The reaction rate reduced with 7 and 10 % (w/v) substare concentrations. Similar findings by Ishmael et al. (2016) where a steady decline in pretreatment of EFB as the substrate concentration was increased from 5% (w/v) to 20% (w/v), at 5 % substrate concentration 2.4 mg/mL total sugar were produced and 1.73 mg/mL at 10 % (w/v) EFB as shown in Figure 3.

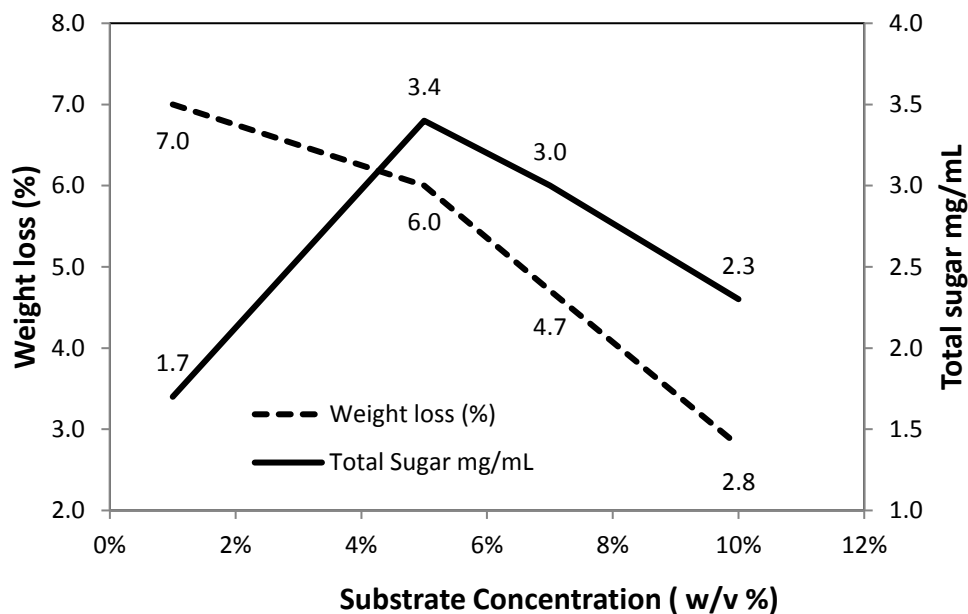


Figure 3: Effect of substrate concentration on enzymatic pretreatment of sawdust

Effect of time of reaction

Different levels of reaction time ranging from 2 to 12 hrs were tested to determine the possible optimum level to maximize total sugar production. The highest total sugar concentration of 3.7 mg/mL and 3.9 mg/mL, respectively, were obtained by conducting pretreatment for 8 and 10 hrs (Figure 4). The reduction in total sugar concentration at longer time (>10 hrs) resulted from the degradation of these compounds to monosaccharrides and low total sugar after short time (2 hrs) is because insufficient time for enzyme reaction to make biomass degradation to produce sugar. So far it meets study by Ishmael et al. (2016) that good progress in the pretreatment process of EFB between 2 h to 4 h, where the maximum rate was achieved with total sugar of 1.61 mg/mL released after 4 h pretreatment.

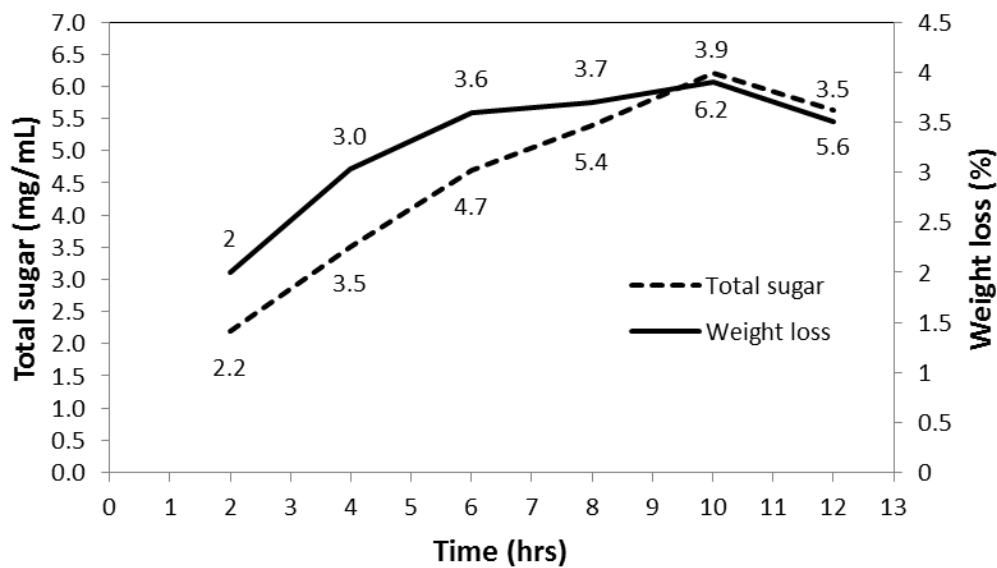


Figure 4: Effect of reaction time on enzymatic pretreatment of sawdust

Effect of temperature

In order to evaluate the effect of temperature on the pretreatment process, three temperature levels 25 °C, 37 °C, and 50 °C were employed. Figure 5 demonstrates the effect of temperature on the laccase pretreated sawdust where production of sugar and weight loss increased with increasing temperature and reached to a maximum value of 3.7 mg/mL and 2.8 % respectively at 37 °C. But at higher temperature degrees 50 °C the enzyme reaction rate dropped with low sugar production 2.4 mg/mL. A previous study by Rico et al. (2014) pretreated eucalyptus feedstock with laccase enzyme from *T. versicolor* at 50 °C and obtained 18% delignification.

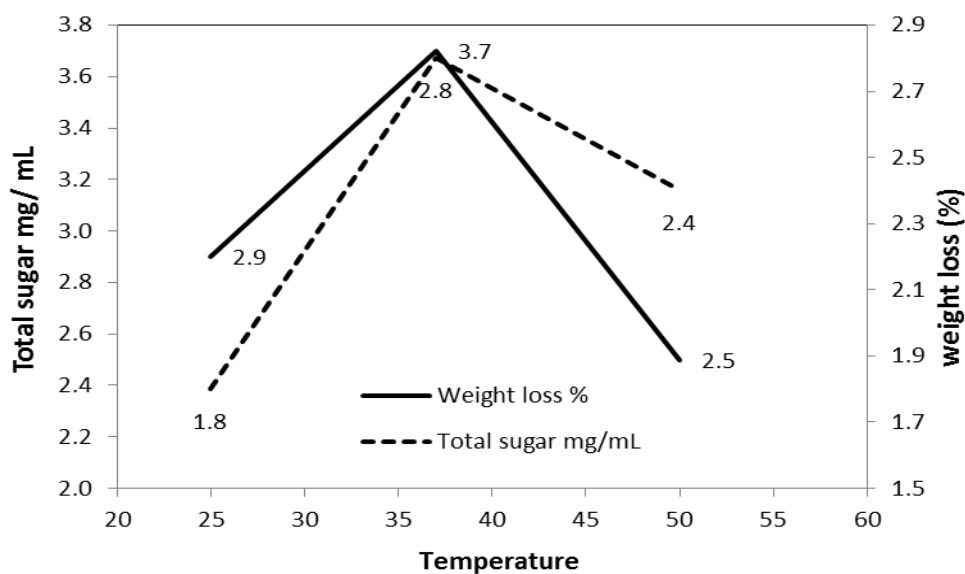


Figure 5. Effect of temperature on enzymatic pretreatment of sawdust

Effect of pH of medium

All enzymes have a specific pH range at which they are most active due to the effect of ionization of proteins (enzymes) in medium. Pretreatment carried out using pH 3.0, 4.0, 5.0, 6.0, 7.0 and 8 (Figure 6). High sugar produced were of pH 5 and 6, 5.2 and 5.5 mg/mL respectively. This result parallel with many previous studies Ishmael et al. (2016) findings where pretreatment of EFB with laccase enzyme was studied at pH 2, 3, 4, 5, 6, and 7. The total sugar yields of 0.18, 0.21, 1.08, 2.42, 2.0, and 0.19 mg/mL were achieved. The results revealed that pH 2, 3, and 4 the rate of pretreatment was slower; pH 5 was more favorable to the enzyme.

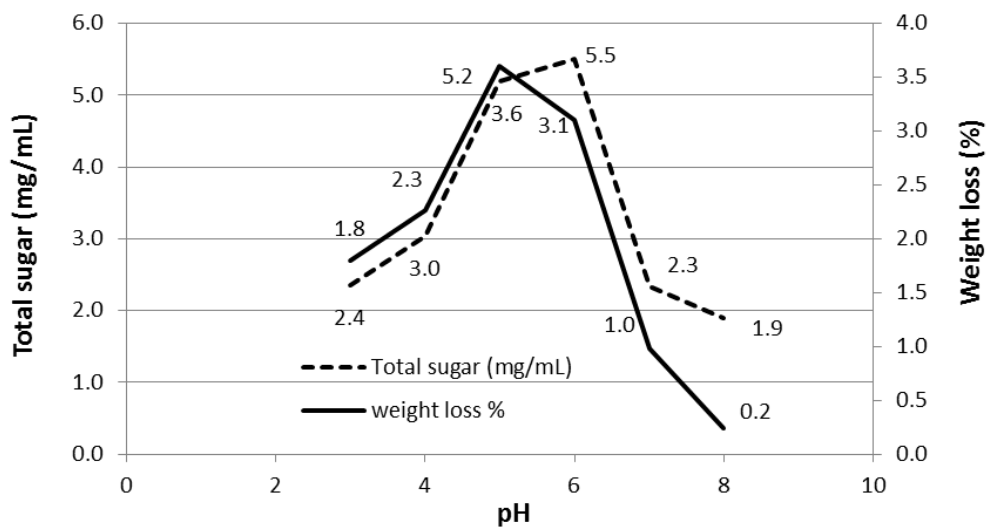


Figure 6: Effect of medium pH on enzymatic pretreatment of sawdust

Effect of Agitation rate

Speed of shaker usually affect the protein structure (e.g. enzymes) and may cause loss of their chemical binding structure. In this study agitation at 100, 135, 150 and 200 rpm were done, resulted in high total sugar and weight loss 3.6 mg/mL and 5.8 % respectively on speed of 150 rpm otherwise speed of 200 rpm cause decline in pretreatment rate with both low sugar and weight loss 2.5 mg/mL and 1.7 mg/mL (Figure 7). Kasetsart J. (2008) in his Optimization of Agitation Conditions for Maximum Ethanol Production by Coculture at the agitation rate of 0, 50, 100, 150 and 200, respectively, he suggested that the agitation rate of 50 rpm was suitable for ethanol production by the coculture from the mixed sugars.

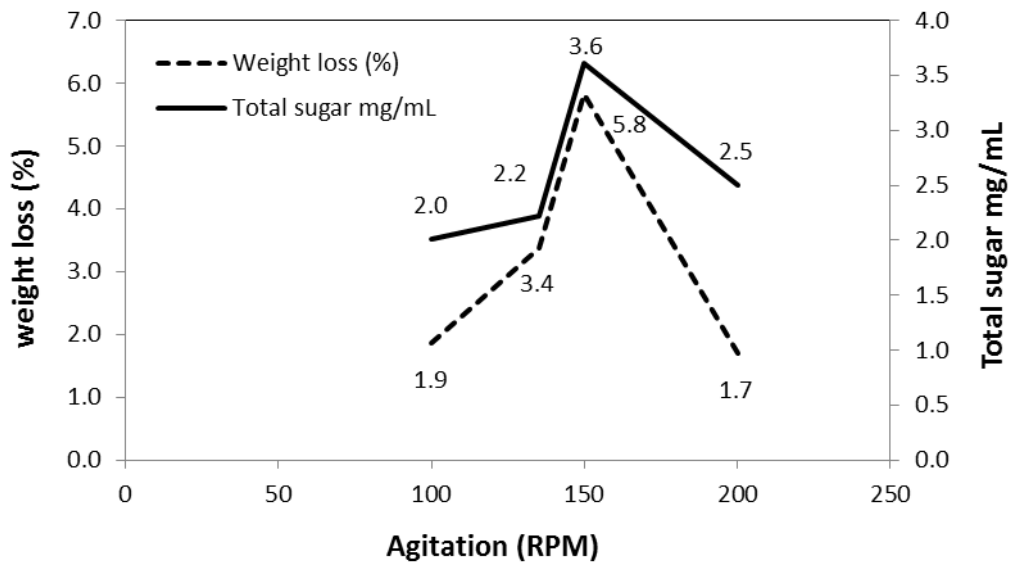


Figure 7: Effect of Agitation on enzymatic pretreatment of sawdust

Experimental effects of pH and temperature factors

Temperature and pH are two important factors that can affect the rate of enzymatic reactions. As high and low values could change protein structure and alter their ionization in solutions. The three-dimensional (3-D) response (Figure 8) and contour plots (Figure 9) show the effects of both temperature and pH on the weight loss (%) of substrate. The experimental and predicted weight loss (%) results presented as a mean of the triplicates in Table 2. The analysis of variance (ANOVA) of the FCCCD for the weight loss (%) are presented in Table 3. From the ANOVA tables, it was observed that the process temperature had a more significant effect on weight loss response, which was more demonstrated in the P values of 0.000 in linear terms when compared with pH which has P values of 0.477. The weight loss (WL) was represented by polynomial equation 5, where T is the temperature of the reaction.

$$\text{Weight loss} = -3.74612 + 0.14592 * \text{Temperature} + 3.13305 * \text{pH} - 3.96552\text{E-}003 * \text{Temperature}^2 - 0.3366 * \text{pH}^2 + 5.00000\text{E-}003 * \text{Temperature} * \text{pH} \quad (5)$$

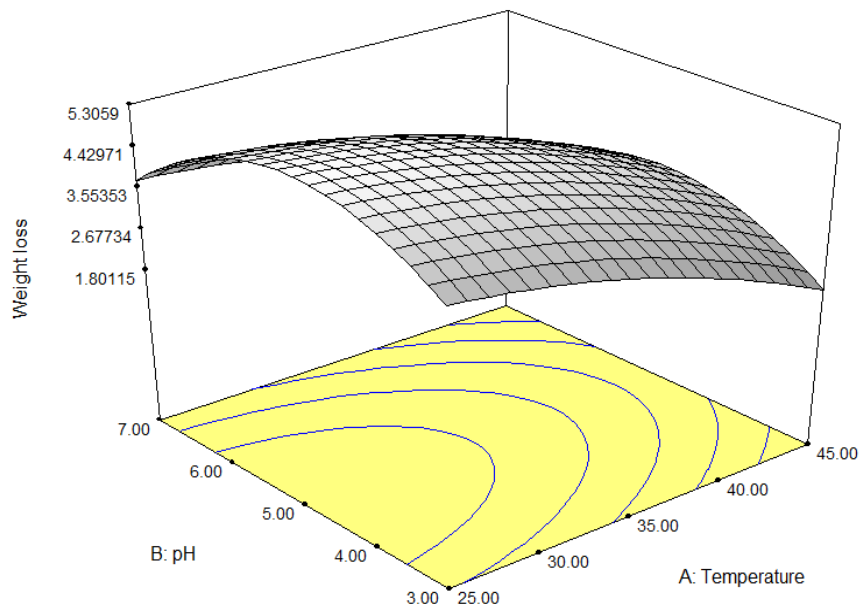


Figure 8: Three-dimensional response of the effects of temperature and pH on weight loss

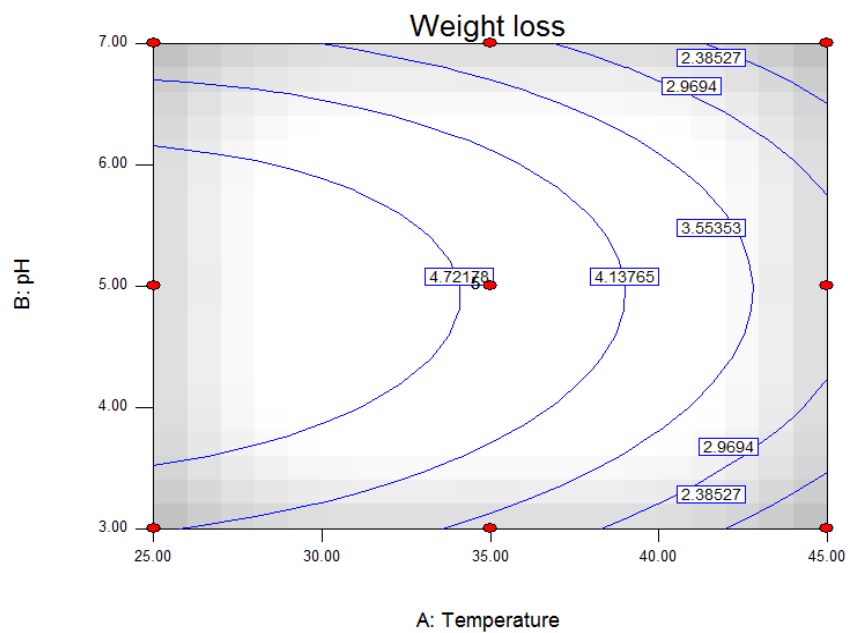


Figure 9: Contour plot response of the effects of temperature and pH on weight loss

Table 1: . The experimental and predicted weight loss (%) RSM optimization results

STD	Temperature	pH	Weight loss (%)	
			Practical	Predicted
1	25	3	4.4	4.2
2	45	3	1.6	1.8
3	25	7	3.8	3.7
4	45	7	1.4	1.8
5	25	5	5	5.3
6	45	5	3.8	3.2
7	35	3	3.4	3.4
8	35	7	3.5	3.2
9	35	5	4.7	4.6
10	35	5	4.6	4.6
11	35	5	4.3	4.6
12	35	5	4.5	4.6
13	35	5	4.7	4.6

Table 3: Analysis of variance (ANOVA) for weight Loss (%) response

Source	Sum of squares	DF	Mean square	F-Value	P-Value
Model	14.629	5	2.926	20.193	0.001
Temperature	6.827	1	6.827	47.115	0.000
pH	0.082	1	0.082	0.564	0.477
Temperature 2	0.434	1	0.434	2.998	0.127
pH2	5.008	1	5.008	34.563	0.001
Temperature* pH	0.040	1	0.040	0.276	0.616
Residual	1.014	7	0.145		
Lack of Fit	0.902	3	0.301	10.741	0.022
Pure Error	0.112	4	0.028		
Corrected Total	15.64	12			

Validation of the developed model

The developed pretreatment RSM optimized models were validated by suggesting five sets of experiments of the models. As shown in Table 4, the temperatures during the validation process were 37.29, 39.87, 36.78, 28.56 and 26.25°C; while the pH values were 3.55, 5.44, 6.49, 5.7, and 6.04. All the experiments were performed in triplicates, and the results were presented as the mean of the triplicates

Table 4: Validation of the developed model

Temperature	pH	Weight loss(%)	
		Predicted	Practical
37.29	3.55	3.7	3.2
39.87	5.44	3.9	4.1
36.78	6.49	3.6	3.7
28.56	5.7	4.9	4.5
26.25	6.04	4.8	4.7

CONCLUSION

The optimized process conditions for the pretreatment of sawdust with laccase enzyme were: laccase enzyme concentration of 20 IU/g of sawdust, substrate concentration of 5.0% (w/v), the temperature of 37 °C, pH 6, and time, 10 h. These conditions had a significant effect on the pretreatment process.

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HYPOGLYCEMIC EFFECT OF SOME ETHNOMEDICINAL PLANTS AND ITS APPLICATIONS ON PANCREAS IMPROVEMENT

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ABSTRACT

Diabetes is a disease that causes the blood glucose level to rise and if left untreated, could yield in many complications such as amputations of body parts, muscle disorders and fatigue. The alarming increase in the number of patients suffering from diabetes requests for more studies to be conducted to find alternatives in producing a cure to this disease. Many chemical methods are adapted towards the treatment of diabetes, so it is crucial that studies on medicinal plants are carried out to produce a solution that does not rely on chemicals alone, and can inhibit the diabetic activity as much as the existing medications. This study was conducted to collect and extract ethnomedicinal plants from Malaysia using different solvents, to select the most potent ethnomedicinal plant extract using anti-diabetic screening assays and to screen for combination effects of the plant extracts on anti-diabetic activity. The plant extracts are then subjected to α -amylase and assays whereby detection of potent plants that result in more than 50% inhibition

is selected. Selected plants are combined to one another in dual, triple and quadruple plant extract combinations and anti-diabetic assays are performed once again to find the most effective combination that gives the highest inhibition value. Once the combined inhibition values are obtained, these values determined and classified into synergistic and antagonistic groups depending on its relationship with one another, whether it enhances inhibition value or not. For alpha-amylase inhibition, the chloroform extract of *E. longifolia* gave the highest inhibition of α -amylase enzyme at 82.42%.

Keywords: Antidiabetic, Ethnomedicinal, α -Amylase, Combination

INTRODUCTION

Diabetes mellitus is a categorized as a metabolic disease that is represented by hyperglycaemia that occurs due to defects in insulin secretion, insulin action, or both (Letchuman et al., 2010). The protracted hyperglycaemic effect of diabetes is contributes to malfunctioning of certain organs such as the kidney, eyes, heart and other blood vessels as well as causing a long-term damage and dysfunction of the organs (Patel, Kumar, Laloo, and Hemalatha, 2012). Diabetes mellitus is a very common disease, mainly due intake of excess sugary or starchy food that contains high content of carbohydrate. It has been increasing relatively since the 1960s (Letchuman et al., 2010). Symptoms of this wildly escalating disease includes the wounds and sores that take very long to heal, proneness toward infections, feeling thirsty often, having dry skin, feeling very distressed, urination very often, feeling intensely hungry, sudden weight loss, feeling numbness and tingling in the hands and feet and also sudden changes in vision. These symptoms could also be accompanied by nausea, vomiting, or stomach pains in the abrupt onset of insulin-dependent diabetes, now called Type 1 diabetes (Beagley et al., 2014).

Ethnomedicinal plants have variety of uses in treating diseases and illness such as kidney stones, muscle cramps, warts and diabetes. Even though the usage of traditional or ethnomedicine have been eroding rapidly due to the rise in modern technology medicine and treatment, it is important that documentation of such medicines is done for knowledge, in order to produce much efficient medicines (Malik, Bhat, Ballabha, Bussmann, and Bhatt, 2015). According to (Samuel et al., 2010), in Malaysia particularly, these ethnomedicinal plants are commonly and widely used by the 'Orang Asli' and can be found in many of its rural area such as the Kampung Bawong, Perak of West Malaysia. Despite the fact that ethnomedicinal plant refers to plants used by indigenous people from rural area to treat disease, the presence of variety of chemical identity possessed by a plant is what gives it a good pharmacological value and the anti-diabetic effect (Gharti Kul, Buddhi et al. 2015).

In an *in vitro* method performed by (Bhutkar and Bhise, 2012), it was found that the inhibition of alpha-amylase activity was possible using some aqueous indigenous plant extracts, namely *Tamarindus indica*, *Catharanthus roseus*, and *Caesalpinia bonducella*, whereby *C. bonducella* yielded in an inhibition as high as 87.26%. Starch was used as the substrate to the enzyme, alpha-amylase in order to yield in glucose production. However, presence of plants extract was meant to inhibit the activity of the alpha-amylase, therefore reducing the production of glucose. DNS reagent was used in this research paper to end the activity and readings were obtained at an absorbance of 540nm before inhibition is calculated.

MATERIALS AND METHODS

Materials

For the collection and preparation of plant extracts, chemicals used includes the solvents, methanol, ethanol, chloroform and water. For the α -amylase inhibition assay based on the methods of (Kazeem et al., 2013), the chemicals used include the α -amylase enzyme (EC 3.2.1.1) from *Saccharomyces cerevisiae*, plant extracts, 0.02M PBS, 1% starch, DNS reagent and distilled water.

Collection and Extraction of Plant Extracts

In order to study the effects of ethnomedicinal plants on the anti-diabetic effect, the method of (Kazeem et al., 2013) is referred with modified procedure. About 7 different types of ethnomedicinal plants were picked from Kuantan, Pahang, Malaysia and as shown in table 1. The plant parts were cleaned and dried under shade at room temperature for approximately one week. Dried parts were ground to a powder using a grinder. The powder (10g) of the specific plant is then divided and extracted using different solvents, chloroform, ethanol, methanol and water (200ml). The extracts were left for 5 days in conical flasks wrapped in silver foil in order to steep. The infusion formed was then decanted, filtered, centrifuged (8000rpm/10 minutes) and evaporated by rotary evaporator. The concentrated extracts were then stored in bio-bottles, where the cap of the bottle was wrapped with silver foil and stored in the refrigerator.

Table 1: Plant parts used

NO	Plants name	Family	Part used
1	<i>Averrhoa bilimbi</i>	Oxalidaceae	Leaves
2	<i>Andrographis paniculata</i>	Acanthaceae	Whole plant
3	<i>Orthosiphon stamineus</i>	Lamiaceae	Leaves
4	<i>Gynura procumbens</i>	Asteraceae	Leaves
5	<i>Eurycoma longifolia</i>	Simaroubaceae	Roots
6	<i>Punica granatum</i>	Lythraceae	Peels
7	<i>Swietenia macrophylla</i>	Meliaceae	Seeds

Alpha-amylase Inhibition Assay

After the preparation and extraction of plant is done, α -amylase inhibitory assay was performed using the modified procedure of (Kazeem et al., 2013). About 50 μ L of the plant extract was added in a micro-centrifuge tube together with 50 μ L of 0.02M sodium phosphate buffer of pH 6.9 containing α -amylase solution (0.5mg/ml). Pre-incubation was done at 25°C for about 10 minutes. After that, 50 μ L of 1% starch solution in 0.02M sodium phosphate buffer of pH 6.9 was added at timed intervals. Then, the solution was incubated at 25°C for 10 minutes. In order to end the reaction, 100 μ L of the dinitrosalicylic acid (DNS) reagent was added. Incubation of the tubes in boiling water for 5 minutes, followed by cooling down of the solution at room temperature was performed following that. An ml of distilled water was added to the reaction mixture prior to measuring the absorbance using the spectrophotometer at 540nm. The control was prepared by following the same procedure, except that the plants extract was substituted with distilled water. The blank was just the distilled water.

Combination of Plant Extracts on Alpha-amylase Inhibition Assays

From the percentage value obtained, the most potent plant extract was taken and screened again for combination effects by combining two and more of the plant extracts that showed inhibition more than 50%, using the same procedure as (Kazeem et al., 2013) and (Kim et al., 2005). Then, the data analysis was performed and the most suitable and potent combined plant extract was identified.

Determination of Antagonistic and Synergistic Combined Plant Extracts and Identification of Most Potent Ratio of Plant Extracts

After the determination of inhibition percentage of the combined plant extracts, it was analyzed and grouped as antagonistic and synergistic by comparing the inhibition value from the single potent plant and combined potent plant.

RESULTS AND DISCUSSION

Alpha-amylase Inhibition Assay

The α -amylase inhibition assay yielded in positive results where the inhibition was more than 50% for only four plant extracts out of the 27 extracts as shown in table 2. The chloroform *E.longifolia* extract yielded in the highest inhibition for α -amylase inhibition assay, which is 82.42%, followed by chloroform *P.granatum* extract, 69.73%, chloroform *A.paniculata* extract, 68.24% and chloroform *A.bilimbi* extract, 50.55% as shown in figure 1. The positive results of more than 50% inhibition were only obtained for the four plants with chloroform as the solvent. This means that chloroform is an ideal solvent when it comes to extracting the compound of interest that inhibits the enzyme action compared to ethanol, methanol and water. This also indicates a good inhibition against the α -amylase enzyme, which can contribute to the reduction and normalization of blood glucose levels in diabetic patients.

Table 2: α -amylase enzyme inhibition (+/-) of plant extracts

NO	Plant name	Water	Chloroform	Ethanol	Methanol
1	<i>A. bilimbi</i>	-	+	-	-
2	<i>A. paniculata</i>	-	+	-	-
3	<i>O. stamineus</i>	-	-	-	-
4	<i>G. procumbens</i>	-	-	-	-
5	<i>E. longifolia</i>	-	+	-	-
6	<i>P. granatum</i>	-	+	-	-
7	<i>S. mycophylla</i>	-	-	-	-

(+): present; (-): not detected.

Comparison the Result with Others Research Papers

According to (Pushparaj et al., 2000), based on studies performed using ethanolic extract of *A. bilimbi* on hypoglycemic effect and hypolipidimic effect, it was found that about 50% of the hypoglycemic effect was managed to be reduced in just two weeks. However, when the plant extract was tested against the enzyme alpha amylase in a research by (Ali et al., 2006a) in Malaysia, it did not yield in a positive results. According to (Premanath and Nanjaiah, 2015),

when rats that were streptozotocin induced was treated with *A. paniculata* leaf extract, it has been recorded that the fasting blood glucose level decreased. Based on studies conducted by (Verma et al., 2013), STZ-induced rats showed normalization of pancreas activity when treated with the ethanolic extract of *A. paniculata*. When tested for normoglycaemic and hyperglycaemic effects on rats, aqueous extracts showed positive and high effects for hyperglycaemic whereas no significant reduction for normaglycaemic effect (Bhat and Karim, 2010). According to (Ayesha, 2016), rats with induced diabetes that has been treated with pomegranate peel extracts showed hypoglycaemic effects, as well as hypolipidemic effects. Pomegranate aqueous extract also showed positive results when tested with the STZ-induced rats (Bagri, et al., 2009). Based on the above studies, when we compared between all these results and the result of this study. According to α -amylase inhibition assay for 7 plants, yielded to positive results with chloroform solvent. While the others solvents water, methanol and ethanol were yielded to negative results.

Combination Effect of Plant Extracts on Alpha-amylase Inhibitory Assay

Table 3 shows the highest inhibition percentage obtained in the combination of two plants was between the chloroform extract of *E. longifolia* and the chloroform extract of *A. paniculata*, which yielded in 77.04% inhibition of α -amylase. Lowest inhibition was seen for the combination of chloroform extract of *E. longifolia* with chloroform extract of *A. bilimbi*, which is only 9.30% inhibition of α -amylase enzyme. As for the triple combination of the plant extracts, the combination of chloroform extract of *E. longifolia*, chloroform extract of *A. bilimbi* and chloroform extract of *P. granatum* yielded in the highest percentage of inhibition which was 51.37% inhibition of α -amylase enzyme. The lowest percentage of inhibition was recorder for the combination of chloroform extract of *E. longifolia* with chloroform extract of *A. bilimbi* and chloroform extract of *A. paniculata*, which was 12.22% inhibition of α -amylase as shown in table 3. As for the quadruple combination of all four potent plants, the chloroform extract of *E. longifolia*, chloroform extract of *A. bilimbi*, chloroform extract of *A. paniculata* and chloroform extract of *P. granatum*, the inhibition percentage that was obtained was only 3.54%, lesser than any of the inhibition percentages of the four plants as in table 3 bellow. Overall, all of the plants tested for combination effect under α -amylase inhibition assay yielded in antagonistic relationship, whereby they did not cause any increase in the inhibition percentage as compared to the single plant extract. That's mean, the single plant yields in higher inhibition percentage as compared to the plants combined therefore, the combination of the potent plants are not suitable for the inhibition activity. The plant might as well be used as a single plant extract with solvent to reduce and normalize the blood glucose levels for better result.

Table 3: Combination of two, triple and quadruple plant extracts on α -amylase inhibition (%).

Plant extract	Inhibition%
EIE : OsC	9.30
EIE : ApC	77.03
EIE :PgC	64.91
OsC : Apc	16.17
OsC : PgC	31.80
ApC : PgC	55.64
EIC : AbC : ApC	12.22
EIC : AbC : PgC	51.37
EIC : ApC : PgC	46.52
AbC : ApC : PgC	35.71
EIC : AbC : ApC : PgC	3.53

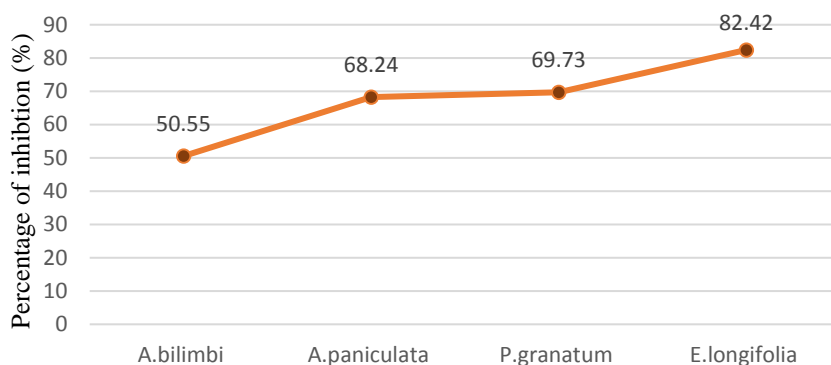


Figure 1. The inhibition percentage for positive results

CONCLUCTION

In the current study, seven plants used for the treatment of diabetes mellitus, about twenty-seven of plant extracts were tested in α -amylase assay and the best results were obtained for the chloroform extract of *E. longifolia* at percentage of 82.42% inhibition. Selection of most potent ethnomedicinal plants were performed successfully by choosing the plant extracts that yielded in a percentage of inhibition of more than 50%. The potent plants was used to perform combination action whereby highest value of α -amylase inhibition was recorded at 77.03% for the combination of two plants, chloroform extract of *E. longifolia*, chloroform extract of *A. paniculata*. However, none of the combined plant extracts portrayed synergistic relationship for α -amylase inhibition. All the plants showed antagonistic relationship.

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Concurrent Session IV A
Risk Management

RISK MANAGEMENT, GOVERNANCE AND FINANCING ISSUES IN PUBLIC-PRIVATE PARTNERSHIPS TRANSPORTATION PROJECTS

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ABSTRACT

This paper discusses issues related to risk management, governance, and financing of public-private partnerships transportation projects. The allocation of risks and the requirements for ownership and equity provision are examined through analysis of a range of contracts. Lesson learnt from a series of Australia’s public-private partnerships transportation projects are also presented. The results show that from the perspective of risk allocation, the arrangements are consistent among the projects. Some fluctuations, however, are observed in term of equity provision. Initially, the contracts are developed based on the private sector taking full traffic demand risk and promising outcomes led to revenue sharing clauses being introduced, later overoptimistic demand forecasts resulted in the market rejecting acceptance of traffic demand risk. The paper also presents the variation between the case study projects in terms of excess revenue sharing. The analysis also suggests that, in arranging these types of projects, traffic demand issue is prominent and should be given major concern since it is closely related with the revenue of the projects which in turns affect the equity of the projects.

Keywords: Risk Management, Governance, Financing, Public-Private Partnerships, Transportation projects

INTRODUCTION

Public Private Partnerships (PPP) are now an accepted mechanism for infrastructure provision in most countries. The system of contracting was pioneered in France by using a Concession Model and was widely implemented in UK through Private Financing Initiative (PFI) (Grimsey & Lewis, 2005). Following UK, Australia, and then South Africa, Canada, Europe and now USA developed this type of contract to suit the local conditions. It is considered a mature delivery option in Australia (Eggers & Startup, 2007). The market maturity level is measured through the perspective of the public sector on how the PPPs contract is organized; commencing from the development of regulatory regime, establishment of special agency towards the refinement of the arrangement.

This paper focuses on early Australia’s PPPs transportation sector projects pre-Global Financial Crisis (GFC) 2007-2008, considering that this market sector is deemed to be the most mature market in Australia and counted for 25% of the total PPPs projects in Australia (Eggers & Startup, 2007). The discussions were based on the substance of the contracts acquired from the official government websites and related company websites. The limitation this paper is that most of the contracts are in the form of contract summaries, not the original contracts.

The main discussion topics in this paper are categorized into three major parts: risk allocation, equity arrangements, and revenue/payment arrangements. Critical appraisal and constructive dialogue was used to analyze the contractual arrangement of the case study projects.

LITERATURE DISCUSSIONS

Governance of PPP Projects

Governance issues in PPP projects are influenced by many factors. Grimsey and Lewis (2004) suggest that PPPs use contract management and reporting systems as a basis for governance. Their framework focuses on risk management and the specific involvement of government. Devapriya (2006) discussed the influence of the financing arrangements on governance of PPP projects and detailed that this in turn influences the effectiveness of the performance of parties involved in the concession. In addition, Reijners (1994) through his investigation in Netherlands PPP projects found that the governance structure should be sophisticated enough to accommodate the conflicting interest of parties involved in order to avoid a breakdown of the trust necessary in PPPs. Another issue that closely relates to the governance of PPPs is that of the ‘incomplete contract’. The complexity of these long-term contracts means it is generally impossible to specify all potential outcomes in the contract documents and specification. Consequently, not all of the performance obligation of parties involved in the arrangement can be specifically defined in the contract which in turn adds the complexity of the contractual relationships that requires ongoing management of change and adjustment events. A typical governance structure is presented in the following Figure 1. In Malaysia, the general form of PPP project following a structure presented in Figure 2.

The basic foundation of PPPs is an optimal allocation of the risks between public and private sectors (HM treasury UK, 2007; Partnerships Victoria, 2007). Different parties have different perspective and interest on risks. This has been clearly shown by study of Grimsey and Lewis

(2002) on the waste water treatment facility in Scotland that sound management of the conflicting issues or interests of parties on risks played an important role in the success of the project. However, this such arrangements are hard to replicate. Not only may the risk allocation be confronted with complexity and unpredictability in term of financial consequences but it also has to be in line with the demands of important stakeholders and the community (Ng & Loosemore, 2006). The willingness of parties to bear the risks should they materialize is a key factor in optimization of the original risk allocation and is reflected in the amount of rate charged by doing so (Ward et al., 1991). And this, according to Ward et.al (1991) can only be achieved through robust and reliable risk management process.

In terms of financing arrangement of the PPPs, the issue of bundling or unbundling a range of sub-projects in the contract is also highlighted as a complexity in governance arrangements. Devapriya (2006) strongly argued that the governance of PPP is highly influence by the debt and equity structure. Further, when it is closely linked with the management of the project, it would likely bring about a negative effect to the success of the project. This argument supports the previous findings by Trujillo et al. (1998) through their analysis of BOT projects that the unbundling between the financing process through a 'neutral' SPV and others aspect of project such as construction and operation will likely to create a better end result.

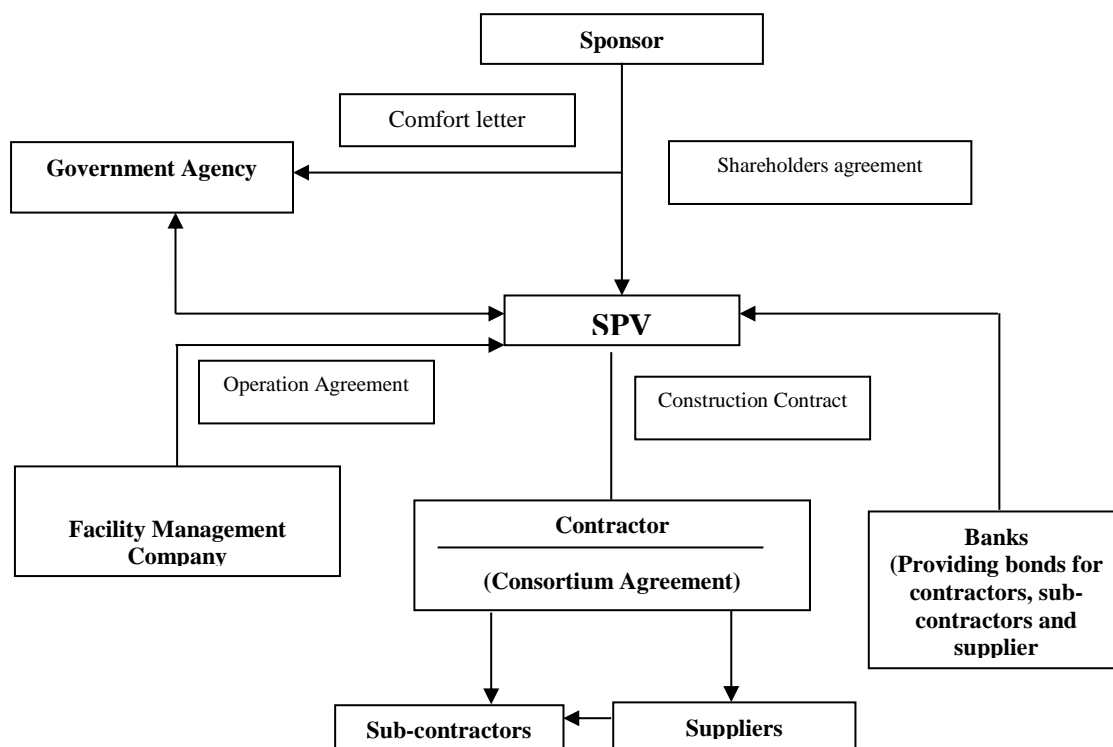


Figure 1: Typical PPP structure
 (Source: Beenhakker, 1997 cited in Akintoye et.al., 2003)

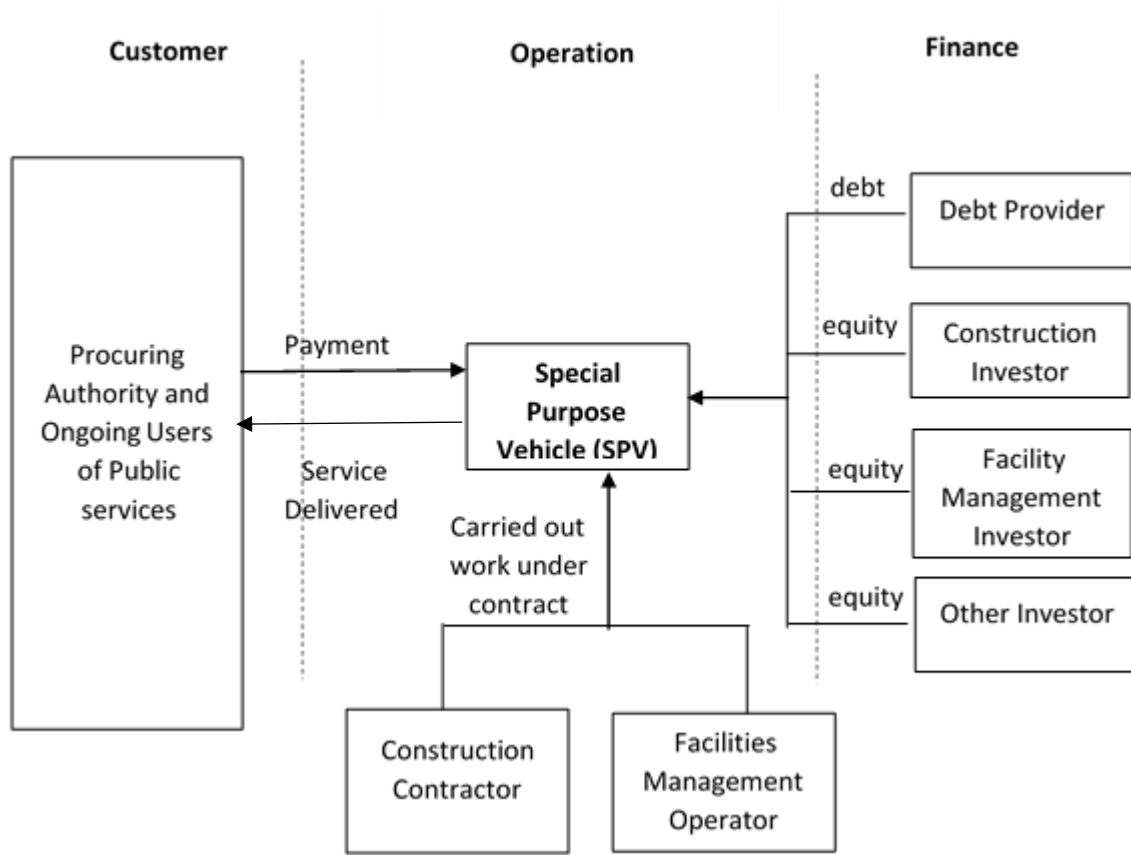


Figure 2: Typical PPP structure adopted in Malaysia
 (Source: UKAS, 2016)

Another issue with regard to governance of PPP projects is whether governance of the projects should follow project or corporate governance. Wilson et al. (2010) had conducted an investigation on the Australia's PPP found that the nature between the management of traditional projects and PPPs is significantly different due to the involvement of many parties in the project arrangement. They further argue that a term of project governance, which can be seen as a joint between project management and corporate governance, could be more suitable for the arrangement. However; considering the long lifespan of projects, multiple party involvement and social responsibility as consequence of longer contracting period, PPP governance is closer to corporate governance type (Wilson et al., 2010).

Good governance of PPP projects

When the governance issue plays an important role for the success of the project, good governance principle becomes a concern. This condition exists when two or more parties involve in and have interest in the certain type of cooperation. Abednego and Ogunlana (2006), through their research in the PPP projects in Indonesia, argued that governance issue plays an important role in the success of PPP project since this type of project requires great strategic concern due to their long-term relationships nature. The success of the project is not only measured through short-term objectives such as on budget, on time and at the appropriate quality but also needs to consider a long term cost of operation and maintenance. This will raise an issue of 'government support, proper project planning, good coordination between parties,

trust, good tendering system, proper information dissemination and communication system, and high managerial capabilities’ (Abednego & Ogunlana, 2006). In this case, it is further suggested that project management should implement good corporate governance principles in the project.

Organization for Economic Co-operation and Development (OECD) has developed a Principles of Corporate Governance in their effort of building a better and reliable governance practice in OECD as well as non-OECD member countries (OECD, 2004). Even though that the principles are aimed at assisting mainly publicly traded companies, however with some adjustments; the principles can also be implemented in the privately owned companies (OECD, 2004). The Principles of Corporate Governance consists of six main principles, which are: ensuring the basis for an effective corporate governance framework, the right of shareholders and key ownerships functions, equitable treatment of shareholders, the role of stakeholder in corporate governance, disclosure and transparency, and the responsibility of the Board (OECD, 2004).

It can be inferred that the good corporate governance mainly emphasizes on the protection and equal treatment for all stakeholders. Since the participants of the public Private Partnerships projects consist of different parties with different level of ownerships and due to a long term nature of relationships in the project, it is very reasonable to include good corporate governance principles in the practice of project management in public private partnerships projects.

Financing in PPP Projects

Apart from the recourse and non-recourse issue, project financing definition is recently moving towards a focus on the repayment of the debt/loan through looking initially to the cash flows and revenue of the project (Nevitt & Fabozzi, 1995). The main purpose of arranging project financing is to provide a borrowing for the project in exposure of profit while the balance sheet of the sponsor is not affected, completely non-recourse and/or as little recourse as possible. In addition to the refunds generation from the cash flow, project financing is emphasized on the separation of the project entity from the entity of companies’ involved in the arrangement and is a project’s asset based focused (Finnerty, 1996).

Risks phases also influence the arrangement of project financing. Commonly for a green or new development project, there are three phases of risks which relate to the financing arrangement: engineering and construction phase, start-up phase and operation phase (Nevitt & Fabozzi, 1995; Tinsley, 2000; Grimsey & Lewis, 2002). Each phases has its own unique nature which consequently influence the selection by the lenders. In many instance, different risks phases or periods have different lenders (Nevitt & Fabozzi, 1995). Therefore, the risks profile of the project will later influence the financing arrangement.

The sources of financing are mainly a combination of debt and equity. The structure of the debt and equity arrangement in PPP projects is directly associated with the governance of the project (Devapriya, 2006). The sponsor of the project will likely to take the largest portion of the equity, which later can be offered to the purchaser, and the recent trend is that the equity is sold in the capital market (Finnerty, 1996). Besides as a control mechanism, equity also represents a whole life ownerships interest on the entity of the project. However, one feature of equity is that there is no requirement of the project to pay the return at the specific time to the equity

holders (Marks et al., 2005). These features will influence the decision of the companies involved in the PPP contracts whether to take part or not in the equity stand. There are some factors dictate on which parties should take an equity stand (Finnerty, 1996). First, the provider takes liability when the cost overrun occurs. Second; in the longer construction period, the provider must be willing to defer their dividends payment. And the final factor is that the equity provider must be parties which will likely to get the most profit from the project. Considering those factors, the equity providers could be one of these parties i.e. the purchaser of the product, the owner of the resources, and the suppliers of products and services. The public/commercial equity investors are likely to invest at the latter stage of the project lifecycle, or at least after the construction period is passed (Finnerty, 1996).

In PPP projects, rarely that equity will covers all of the investment on the project. In fact, the biggest portion comes from debts. Debts can be acquired from the commercial banks in the form of long term loan or can be from other sources such as from bilateral agencies/ export credit agencies (ECAs) and multilateral agencies/MLAs (e.g. World Bank, IBRD, ADB, IFC, etc.; and the last option is from the capital markets (Tinsley, 2000).

Another option for investment of the PPP project is from a financing device that having both features of debt and equity or debt/equity hybrid. Debt/equity hybrid can be described as a capital raising device which has both features of debt and equity (HM Treasury, 2007). Some examples of the those hybrid mechanism are certain classes preference shares, convertible notes, capital protected equity loans, profit participating loans, perpetual debt, endowment warrants and equity swaps. The mechanisms are highly influenced by the taxation regime which affecting the choice and financial arrangement of the financing scheme of the PPPs project.

Project Risks Allocation Principles

Appropriate risks allocation plays an important role in the success of the PPPs project and considered to be the impediment in the PPP arrangement due to varying and uncertain risks faced by the PPPs project. Apart from the technical risks, risks that arise from the stakeholders are more complex and difficult to control (Ng & Loosemore, 2007). Hence, the risks allocation is the major concern in the arrangement of PPP contracts.

In term of risks, the toll road/transport project has a greater risk than other sector, leading to the modest growth of the private financing involvement in transport sector (Fisher & Babbar, 2000). Apart from the economic, construction and operation risks; the risks resulting from co-ordination issue with the regional government or planning agencies is also crucial in the transport projects (Haley, 1992). Therefore, these risks require a systematic risk allocation between the public and its private counterpart through an active involvement of public, government agencies, and private parties.

In enabling to transfer risk effectively, the arrangement should consider the main risk allocation principles the bearers should be able to manage the risk outcome and the risks are allocated to the parties which best able to manage those at the lowest expenses (Medda, 2006).

The complex arrangement in PPP project especially revolve around two main partners, SPV and the procurer, is adding to the complicity of risk allocations. Demirag et al. (2010) through

their research in Scotland argued that due to this complexity, in some cases, the risks may be transferred to parties who are not able to control or not willing to bear them. In this case, those parties will seek other mechanisms as compensation or in attempt to avoid greater lost, such as using hedges, swaps and insurance.

Hovy (2015) also argued that the risk allocation is the main challenge in arranging the PPP projects. Two practices commonly opted, which are transferring risks to private sector leads to higher premium cost and leaving the risks to the public sector that is better to cope the risks cause reduction in value for money objectives, are in contradiction to the optimal risks allocation principles. He further argued that unforeseen risks also become the hindrance in achieving PPP projects success. This is because the long term nature of PPP projects which could reach 30-40 years of contract duration. It is difficult to forecast risks in advance and during the contract period due to the dynamic changes in many aspects such as economic and politics aspects.

Revenue and Payment Arrangement

One of ultimate risks in PPP transportation project is the surety of revenue stream in compensating the investment (Grimsey & Lewis, 2002) which closely related with an accurate traffic demand forecasting (Eggers & Startup, 2007). The inaccuracy of this forecasting at the initial phase will result in numerous re-negotiation during the contract period that hinder and undermine the benefit of the private financing in involvements in the transportation projects (Guash, 2004). Hence, the contract should clearly stipulate this risk which incorporate also the sharing arrangement of potential excess of the revenue from the materialization of traffic that is higher than the base case scenario.

Developing the legal and structured concession environment is one of the prerequisite when attempting to implement this financing arrangement (Fisher & Babbar, 2000). As matter of fact, the concessionaire is likely required to pay more attention on this matter particularly at the project initiation stage to ensure that the contract accommodates the future uncertainty due to its long term nature and to minimize the re-negotiation. One of the solution is to conduct intense discussions in more detail with the counterpart in this case is the government or the related agency at the initial stage of the project.

Some supporting arguments with respect to the importance of pre-negotiation of this aspect has been presented by some research. For the project which has higher uncertainty in forecasting in the revenue stream at the initial stage; the public sector (government) should bear most of the risks or alternatively willing to compensate the private counterpart when there is a non-materialization of the forecasted revenue (Ng & Loosemore, 2007; Eggers & Startup, 2007). The main reason is because the certainty of long term revenue stream is essential for the achievement of value for money as one of the attributes of successful PPP projects (Grimsey & Lewis, 2002). Another alternative is by choosing a revenue mechanism whether it is market-tied or contract-tied mechanism (Haley, 1992). This can be then related to the nature of the service provided by project whether it is directly or not affecting the users.

METHODOLOGY

The methodology used in this paper is a desktop study of a theoretical examination through contracts analysis. The contract data is acquired from the electronic resources of the official government agencies or departments and the companies involved in the PPP schemes. The limitation of this research is that even though the contract is obtained from the official websites, most of the contracts are in the form of contract summary published by the government agencies or companies.

Five contracts data were analyzed from the perspective of equity arrangement, risk allocation and revenue /payment arrangement. The case study focus on the transport PPPs projects in Australia consists of Eastlink project (Victoria), Southern Cross Station (Victoria), Chatswood Transport Interchange (New South Wales), Sydney Cross City Tunnel (New South Wales), Westlink M7/ Western Sydney Orbital (New South Wales), and Lane Cove Tunnel (New South Wales).

The data were analyzed using the preceding theoretical framework and literature discussions. The analysis focuses on the equity/investment arrangement, risks allocation, and reward/concession arrangement especially regarding the arrangement of excess revenue. The expected outcome are identification of sensitive issues underlying the early PPPs transport project in Australia pre-GFC and measurement of the consistency level of the contractual arrangement in the transportation sector.

FINDINGS AND DISCUSSIONS

Risks Allocation in Australia’s PPPs Transportation Projects

The common risks in infrastructure project by Grimsey and Lewis (2002) are used as a platform in analyzing the risks allocation. The aim is to examine the allocation of major risks in Australia’s PPPs transportation projects, to determine whether the allocation is consistent from project to project and to identify a specific risks that require special attention. The following Table 1 presents the risks allocation of the case study projects under this paper’s investigation.

In term of major risks allocation, the contracts shows that there has been a consistent type of major risks allocation in the early PPPs transportation project in Australia. Most of the project’s risks are transferred to the private sector (i.e. technical/design risk, construction risk, operating risk, revenue risk, financial risk, and regulatory/political risk). Other risks are shared between the private and public sector (i.e. force majeure risk, environmental risk, and project default risk). Thus, this means that the transportation sector is considered to be a mature market of PPPs in term of risks allocation.

Table 1: Major risks allocation

Risks	Risk arrangement for PPP Projects				
	Southern Cross Station Redevelopment	Sydney Cross City Tunnel	Westlink M7 Motorways	Lane Cove Tunnel	Eastlink
<ul style="list-style-type: none"> • Technical / Design Risk • Construction risk • Operating Risk • Financial risk • Regulatory/political risks 			Private		
<ul style="list-style-type: none"> • Revenue Risk 	Private	Private*	Private*	Private*	Private
<ul style="list-style-type: none"> • Force majeure risk • Environmental risk • Project Default risk 			Shared		
	Public	Shared	Shared	Shared	Shared

* Public sector has an obligation to support inflow traffic, different project has different arrangement.

In Australia, in general, both parties (public and private sectors) have a right to terminate the contract when one of them found to breach the contract. However, in some cases, the concessionaire can be granted extension of time to rectify their ‘default’ under special discretion.

In regard to the revenue risk of toll and tunnel PPPs projects, even though that a risk is borne by the private sector, there is a special clause which requires the public sector to support the private counterpart, especially related to the input traffic. The following Table 2 shows the special involvement of the public sector in the input traffic arrangement.

Table 2: Traffic risk arrangement

Project	Traffic risk arrangement
Sydney Cross City Tunnel (June 2003)	<ul style="list-style-type: none"> • The traffic risk is transferred to the private sector. • “Clause 3.3.8 Traffic management and road network change”. The contract/project deed requires the Road and Traffic Authorities (RTA), the trustee and the company to build traffic arrangement which must be acquainted with the Cross City Tunnel’s “importance in the traffic system”. This means that both parties have an obligation to ensure that the minimum the traffic inflow to the tunnel as required by the economic base model is achieved. An alternative in accordance with this clause is to close and merge some of the existing traffic network. • The project deed also introduces clause 3.5 (Renegotiation provision) in regard to closing or reduction in traffic inflow to the tunnel.
Westlink M7 Motorways (August 2003)	<ul style="list-style-type: none"> • The traffic risk is transferred to the private sector. • “Clause 3.3.8 RTA and Government road network, public transport and utility service development right and restriction”. • Even though that the traffic risk is transferred to the private sector and the RTA or New South Wales (NSW) government has a right to build any type of road network, the project deed stipulates that 50 traffic connections to the M7 Motorway will not be diminished nor lessen. • The project deed also introduces a clause 3.5 (Renegotiation provision) in regard to the “competing road project”)
Lane Cove Tunnel (July 2004)	<ul style="list-style-type: none"> • The traffic risk is transferred to the private sector • “Clause 3.3.8 RTA and Government road network, public transport and utility service development right and restriction”. • The RTA and NSW government has a right to “develop, operate, maintain, and extend” the NSW roads/networks. This including the existing tollways or freeways. However, the project deed stipulates that 12 traffic connections to the motorway will not be diminished nor lessen. • The project deed also introduces a clause 3.5 (Renegotiation provision) in regard to the specific road sections.
Eastlink (November 2004)	<ul style="list-style-type: none"> • In general, the traffic risk is transferred to the private sector. However, the state has an obligation under the contract to provide “transport network support” in regard to the Principal Road Interface”. • A failure to provide this support is considered to be a breach to the contract. In regard to this failure, the contract introduces clause 45 (Key Risk Management Regime). According to this clause, there are two options for this failure, which are “Obligation to negotiate” and pursuance to expert determination (Clause 73 Expert Determination)

Equity Arrangement

The Equity distribution of the PPPs transportation projects in Australia is presented in the following Figure 3.

Equity Distribution

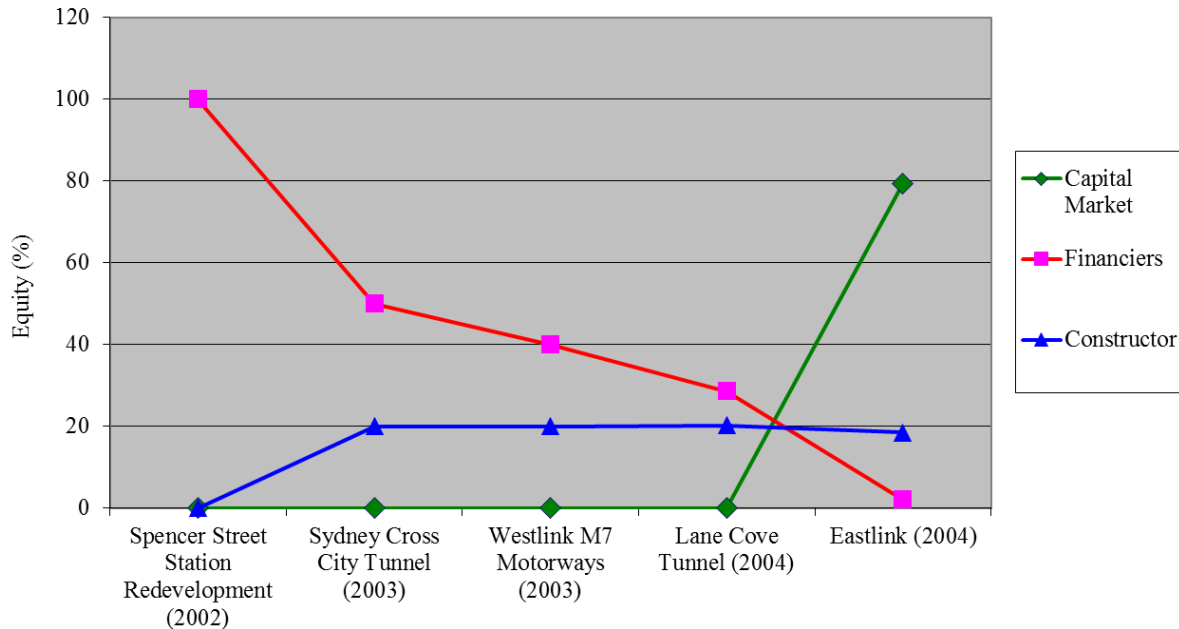


Figure 3: Equity distribution of PPPs transportation projects

The chart shows the fluctuation of equity stake by the parties involved in PPP transportation projects under study that the financial closing of the contract between year 2002-2004. Initially the financiers took the lead by accepting 100% of the equity. Following that, role of the financiers is reduced since other equity providers were starting to play their role in providing equity. Those include superannuation and financial firms. At the latter stage, the equity provision totally transferred to the public via the capital market. At this stage, the financiers' role is only as the Initial Public Offering (IPO) underwriter of the shares and accept only minor sum of deferred equity, for example in Eastlink project. However, the role of the financiers as a leader of the PPPs transport arrangement remains unchanged. Constructor's role in the equity stake is relatively constant at the level of $\pm 20\%$. In some cases, the equity, $\pm 20\%$, is shared by two companies, either from one parent company or divided equally by two separate constructor such as in Westlink M7 project. There are two forms of contractors' involvement in the equity provision of Australia's transport PPPs projects: initial equity investors (i.e. Sydney Cross City Tunnel and Westlink M7 Motorways) and deferred equity investors (i.e. in Lane Cove Tunnel and Eastlink).

The above fact shows that type of contractor's investment is also changed from initial equity investor toward the deferred equity provider. Even though that the type of involvement is changed from initial equity provider to deferred equity provider, the total investment of contractor remains constant at the level of $\pm 20\%$ of equity.

Revenue and Payment Arrangement

In general, there are two types of revenue arrangement in the PPPs transportation projects in Australia i.e. service payment and tolling system. The difference is due to the nature of the

service provided. Service payment is applied on terminal building provision (Southern Cross station redevelopment) while the tolling system is applied in the toll road or tunneling projects. The summary of the revenue and payment arrangement of the PPPs transportation projects in Australia is presented in the following Table 3.

There are some findings derived from Table 3 as follows:

- For the all the toll road projects, the revenue are collected from the users by using electronic tolling system. Generally, the subscriber users' vehicles are equipped with the transponder. Some contracts require the system must be able to recognize the non-transponder equipped vehicle.
- Some differences were observed in terms their excess revenue arrangement. If the revenue is exceeding the 'economic base case model' proposed by the company/trustee in the project deed, the government has a right for a share of the exceeding revenue. For tunnel project (i.e. Sydney Cross City Tunnel & Lane Cove Tunnel), the arrangement were similar (Figure 5). For toll road projects, each of them has its own specific arrangement. In M7 Motorway project, the excess sharing is similar throughout the contract period (Figure 4). While for the Eastlink project, the contract period is divided into some periods with its own excess sharing arrangement (Figure 6). This implies that there was an optimist projection that revenue from the PPPs transport project would exceed the base economic model proposed by the company/trustee. That could be seen also as opportunity from the perspective of the public sector to be actively involved in arranging the transport network to ensure the traffic inflow exceeding the proposed model.
- Since the biggest risk of PPPs transportation project is revenue risk, the private sector will likely to be cautious in regard to the surety of traffic inflow. The public sector/government involvement is still required to ensure that the traffic network is properly arranged.
- Another important issue in regard to the traffic arrangement is the main stakeholder interest, the public/the users. Prior to implement certain traffic network arrangement (such as merging, closing, widening, etc.) in the contract, both parties have to consider the resistance of public on the arrangement. This resistant will significantly influence the revenue for the private sector and the image of the project which in turn give a bad effect to the project success.
- Since the PPPs contract is normally for more than 20 years, it is imperative that the arrangement is discussed in detail before the contract effected in order to avoid dispute and prolonged renegotiation.

Table 3: Revenue and payment arrangement

No.	Projects	Revenue	Re-payment to the Government	
			Land Lease	Excess Revenue
1.	Southern Cross Station Redevelopment (July 2002)	Service payment paid quarterly of a year	None	None
2.	Sydney Cross City Tunnel (June 2003)	Toll	<ul style="list-style-type: none"> \$1, plus 35% share of Gross revenue from no-toll business 	Progressive increased share for excess more than 10% of the 'base case financial model' every period
3.	Westlink M7 Motorways (August 2003)	Toll	<ul style="list-style-type: none"> \$1, plus A share of Gross revenue from no-toll business. 	Progressive increased share for excess more than 5% of the 'base case financial model' after six years of completion stage 1 of the project.
4.	Lane Cove Tunnel (July 2004)	Toll	<ul style="list-style-type: none"> \$1, plus A share of Gross revenue from no-toll business. 	Progressive increased share for excess more than 10% of the base case financial model every period.
5.	Eastlink (November 2004)	Toll	\$ 20 Million Freeway leases and land licenses	Progressive increase in share of excess revenue varied periods.

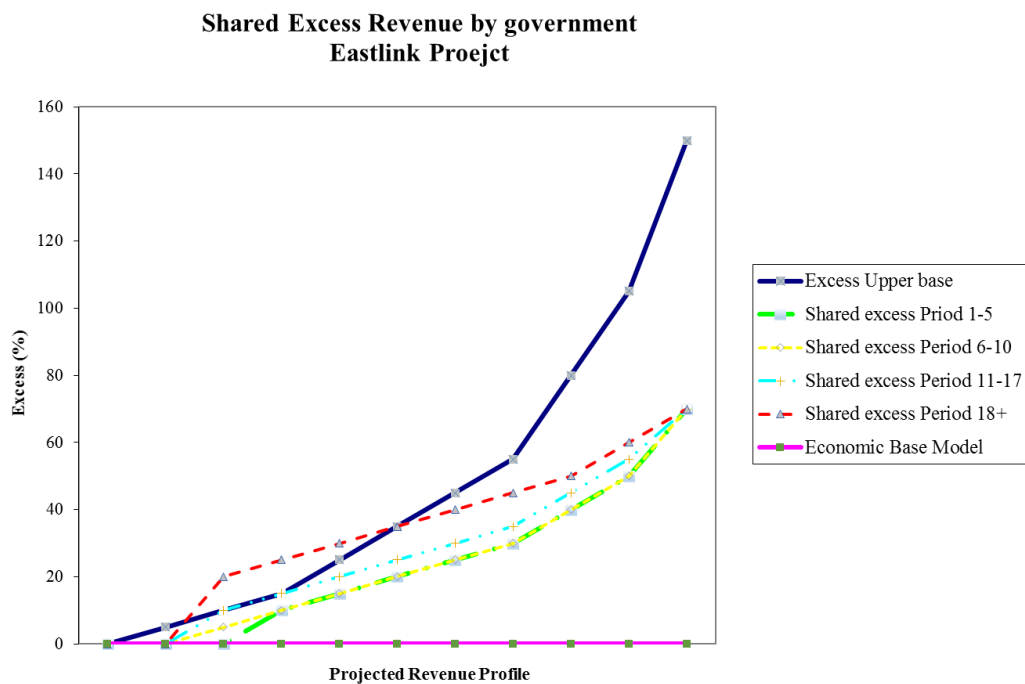


Figure 4: Shared Excess Revenue for Eastlink

Excess Revenue Sharing Sydney Cross City Tunnel & Lane Cove Tunnel

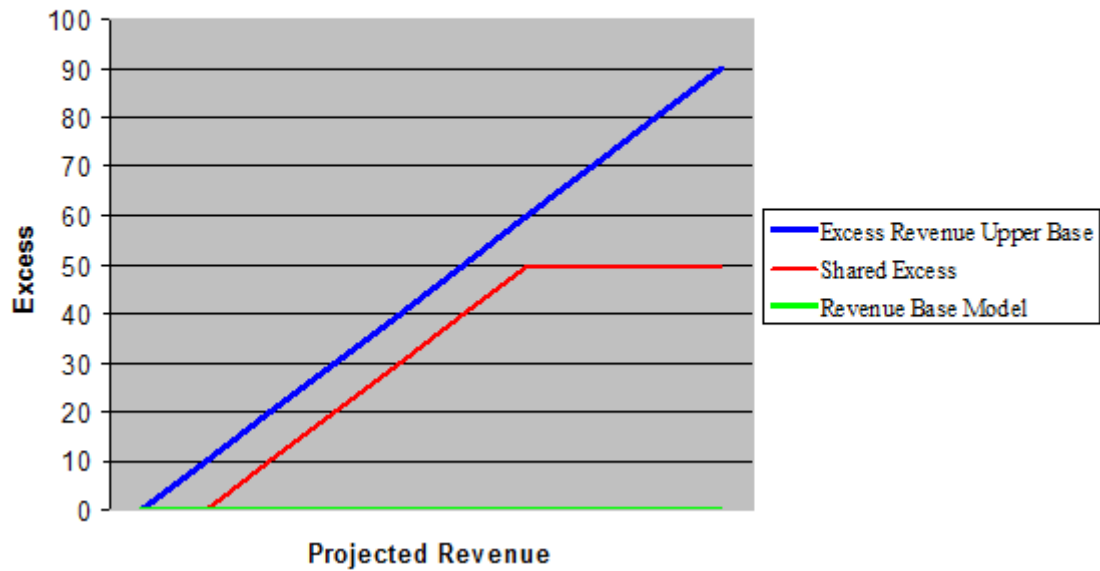


Figure 5: Shared excess revenue for cross city tunnel & lane cove tunnel

Excess Revenue Sharing Westlink M7 Motorway

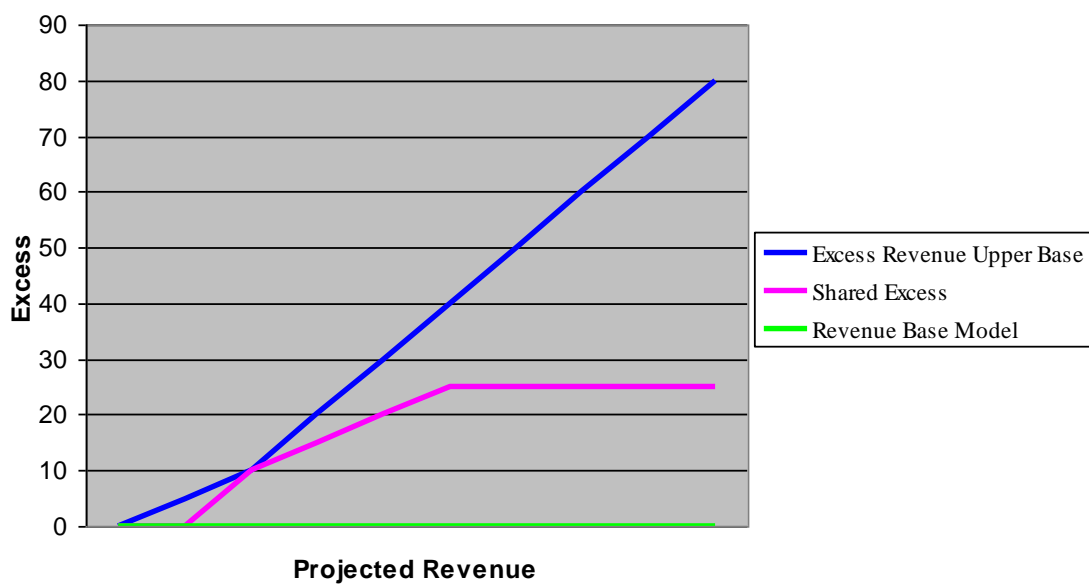


Figure 6: Sharing excess revenue for Westlink M7 motorway

Latest Progress and Information on the Case Study Projects

From the five case study projects, three of them (i.e. Sydney Cross City Tunnel, Lane Cove Tunnel, and Eastlink) had faced commercial burden. The main reason is because the highest

risks which is the demand risk is materialized that in all cases the projected traffic demand is not achieved. The worst case is experienced by the Sydney Cross City Tunnel that asset has to be sold to other investor. Clearly evident that traffic demand is a crucial risk that failing to meet the projected traffic flow will affect the revenue which eventually influence the equity.

The latest analysis on Australia’s PPP transportation projects was presented by Hodge and Duffield (2010) where two projects were highlighted: the CityLink and Southern Cross Station projects (both in state of Victoria). In CityLink Project, most risks including construction, design, operation, financing and market risk, are transferred the private sector. In this CityLink project, a bank which is Macquarie Bank via its Infrastructure Investment Group, took the lead in the financial and project arrangement. The Southern Cross Station Project is an upgrading project of an existing railway station. A similar risks arrangement was observed. The biggest risk in this project is borne to the private sector which is the operational of the existing station risk that the private sector must ensure that the station remains operational during upgrading work. In terms of financing, ABN Amro leads the arrangement by contracting Leighton Contractors, Honeywell and Delaware North Australia to deliver and operate the development, via SPV named Civic Nexus (DTF Victoria 2016). These two transportations projects again highlight the major involvement of banks (financial sector) as the leader or the biggest equity taker in the arrangement. A recent study by Carbonara et al. (2015) in the study of motorway PPP projects in Europe had identified five major risks: construction risks, revenue, financial risks, force majeure risks, and regulatory/political risks. Similar with the finding of the presented paper, the research by Carbonara et al. (2015) also indicate that the most critical risks in PPP motorway projects demand or usage risk which is correspond to the revenue risks that occurs during the operation phase. Further, he also suggestion for a kind of risk sharing between private and public sector with regards to this risk through revenue sharing mechanism and revenue distribution mechanism. This recent finding confirms the findings that are presented in this paper.

CONCLUSIONS AND RECOMMENDATION FOR FURTHER RESEARCH

From the perspective of equity arrangement, risk allocation and revenue/payment arrangement, the PPPs transportation project in Australia experiences a consistent arrangement which shows the maturity of this market sector. Inconsistency is observed only on the initial equity provision where the amount of financier percentage is reduced. However, the role of the financier remains unchanged as the leader of the project entity. In term of risk; in transport projects, the most sensitive issue that has been given most concern by the contracts is the revenue or traffic arrangement risk.

There are some recommendations for further research extended by this report, as follow:

- In regard to the PPPs transportation project, a deeper research should be conducted in order to find out the motivation of parties behind the willingness to put equity on the project. Firstly, from the contractor point of view whether the willingness is motivated by ownership interest, controlling interest, or just an obligation to show a commitment to the success of the project. Secondly, from the point of view of financiers, the focused is on the motivation to bear whole equity of the project or to share it with others.

- Another research needs to be conducted is to find out whether the excess revenue is experienced by the PPPs project and to find the effectiveness of the excess sharing revenue arrangement. This is important to ensure a fair arrangement is achieved, since the private sectors bear the revenue risk and whether this can be considered as an opportunity of both parties.
- The same research should also be conducted in other PPPs’ sectors. The purposes are to find whether the consistency of the arrangement has been achieved, to investigate the maturity of the market, and to obtain unique features of PPPs arrangement in other sectors compared with transportation projects. Thus, the most sensitive issue which could likely to create a dispute can be identified.
- The main objective of PPPs contract is to achieve value for money. Since the PPPs contract period is relatively long (more than 25 years), there should be an empirical method suggested on measuring whether the project has successfully deliver value for money. Thus, the lesson learnt can be immediately implemented on the foregoing project.

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ORGANIZATIONAL FACTORS, CONSTRUCTION RISK MANAGEMENT AND GOVERNMENT REGULATIONS IN NIGERIAN CONSTRUCTION COMPANIES: DATA SCREENING AND PREMILINARY ANALYSIS

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ABSTRACT

The aim of this paper is to investigate the accumulated data pertaining to the organizational factors, construction risk management and government regulations in Nigerian construction companies. A total sample of 238 were selected from the total population of 338 contractors (i.e., contract manager, executive director, marketing manager, project manager and engineers) operating in Abuja and Lagos State construction companies in Nigeria. Therefore, a proportionate stratified random sampling approach was employed for this study to further divide the companies into different strata, and they were all picked randomly from each stratum. Furthermore, data cleaning and screening were conducted with the intent to fulfil the multivariate analysis assumptions. Hence, this study carried out various tests like missing data analysis, outliers, normality, Multicollinearity, non-response bias and common method variance with the use of Statistical Package for Social Science (SPSS) v21. Lastly, it was discovered that the data fulfil all the requirements for multivariate analysis.

Keywords: Construction risk management, Organizational internal factors, Organizational external factors, Government regulation, Nigerian construction companies.

INTRODUCTION

Proper planning, editing and screening of preliminary data are paramount procedures before conducting multivariate analysis. Data screening is also important in order to ascertain any possible violation of the main supposes pertaining to the application of multivariate techniques (Hair et al., 2010). Furthermore, preliminary data investigation makes the researcher to have a deep knowledge about the data collected.

Yet, this paramount pace of data screening and cleaning are being evaded by researchers in most cases (Hair et al., 2013). Evading this pace, will definitely affect the quality of the results rendered by the research. Hence, there is a need to measure the data with series of statistical techniques to ensure the data is error free.

This paper employed an independent samples t-test to ascertain any likely non-response bias on the actual study variables comprising management risks, material risks, design risks, finance risks, labour and equipment, effective communication, team competency and skills, active leadership, political factor, organizational culture, technology factor, economic factor and rules and regulations. Common method variance, missing data, outliers, normality and Multicollinearity were also deeply investigated.

LITERATURE REVIEW

The word “risk” has been defined in several ways. While (Porter, 1981; Perry & Hayes, 1985) have perceived risk as an experience to economic loss or gain growing from participation throughout the construction process; Moavenzadeh & Rosow (1999) and Mason (1973) have viewed this as an experience to only loss. Bufaied (1987) and Bothroyed & Emmett (1998) defined risk that is related to construction as a condition through which the process of the construction project leads to uncertainty in the last cost, time and quality of the project (Adeleke et al., 2017; Arditi et al., 2017; Ansah et al., 2016). In this study, construction risk is defined as the probability of occurrence of some uncertainty, that hinders the achievement of project objectives, which it can be from management, materials, design, finance and labour and equipment risks.

The construction industry, compare to other industries, is risky (Adeleke et al., 2016). However, construction project is comprehended to have more underlying risks due to many contracting parties involved such as contractors, subcontractors, clients, designers and engineers. There is uniqueness in construction projects because they are built only once. The parties also include irregular project team, which is accumulated from different companies, countries and cultures. Moreover, the complexity and size of construction projects are growing higher, which add to the risks. This is because of the social, cultural, political and economic situations where the project is to be contracted (El-Sayegh, 2008). Risk in construction has been the mark of attention by most of the construction parties because of cost, and time overruns that are connected to the construction project.

According to Sambasivan & Soon (2007), twenty-eight major construction risk factors, which lead to delay due to improper effective construction risk management with their effects on the construction projects in Malaysia were identified such as inadequate finance and payments for

the completed project; lack of materials; labour supply; failure and equipment availability; poor communication between parties; and misapprehensions during the construction stage were the leading factors. Consistent with study of Aibinu & Odeyinka (2006) that identified forty-four risk factors that leads to delay due to deficiency of effective construction risk management among construction projects in Nigeria, the study revealed major risk factors such as; management, material, finance and design risk factors. Frimpong et al., (2003) and Sweis et al., (2008) affirmed a positive relationship between internal and external organizational factors and construction risk management, Consistent with the study of Ahmed et al., (2002) in USA, which revealed a positive relationship between internal, external organizational factors and construction risk management.

Similarly, the study of Doloi (2009) affirmed effective communication as an organizational internal factor that reduces conflicts, improve decision making and effect on team member performance to their project manager, so lack of all these attributes will influence or affect effective construction risk management within the organization. The empirical investigation of (Karim Jallow et al., 2014, Moe & Pathranarakul, 2006), also confirms that effective communication positively influenced construction risk management. Furthermore, Geraldi et al., (2010) perceived team competency and skills to be seen in terms of skills, knowledge and attitude. Team dynamics are also connected with team competency; that is what type of characteristic team has and what are the characteristics required in the project execution, thus, any organization that lacks team competency and skills, will definitely affect effective construction risk management. Moe & Pathranarakul (2006) highlighted a positive relationship between team competency and skills with effective construction risk management.

Jaafari (2001) revealed the influence of environmental variables such as safety, community perception, and legal acceptability, political and social impacts on the project is mostly high. It was further explaining by the author that political factors include, discriminatory legislative, covering tax regimes, riots, strikes, civil unrest, wars, terrorism, invasions and religious turmoil will positively influence effective construction risk management in an organization. Hofstede et al., (1990) and Schein (2004) also perceived organizational culture as the elementary assumptions, values, beliefs and models of behavior, practices, rituals, heroes, symbols, technology and artefacts. In addition, Hartog & Verburg (2004) indicated that organizational culture is a strong variable that is associated with “behavior and attitude” of contractors, project managers and team members during execution of the project, which significantly influenced effective construction risk management, and in most cases when government regulations are not implemented in the organization.

Therefore, rules and regulations as government tools are enacted to control the risks' occurrence on the construction project caused by management, material, design, finance and labour and equipment. Construction industries are mandated to operate under the requirements of rules and regulations (Gibb, 2011). Previous researcher's results have shown that rules and regulations that are focused on the construction industry have a set of positive influence on construction projects and performance of the construction industries (Niu, 2008). In the presence of an immense attention of clients, stakeholder's pressure and the top management allegiance, a suitable rule and regulation is the best approach to reduce risks' occurrence on construction projects. Rules and regulations strengthen the implementation of internal and external organizational factors by providing standard requirements for organizational conformances. Thus, there is need for rules and regulation's compliances to strengthen the

dedication of construction industry to minimize risks' occurrence on projects (Adeleke et al., 2016). In the same vein, Ismail (2001) revealed that in the Malaysian context, rules and regulations on housing stated that, there must be a replacement for the traditional building practices by an industrialized building system (IBS), which, on the long run, might save labour, cost, confer quality and durability and time of construction in Malaysian construction companies as cited by (Alaghbari et al., 2007). Figure 1 shows the proposed research framework.

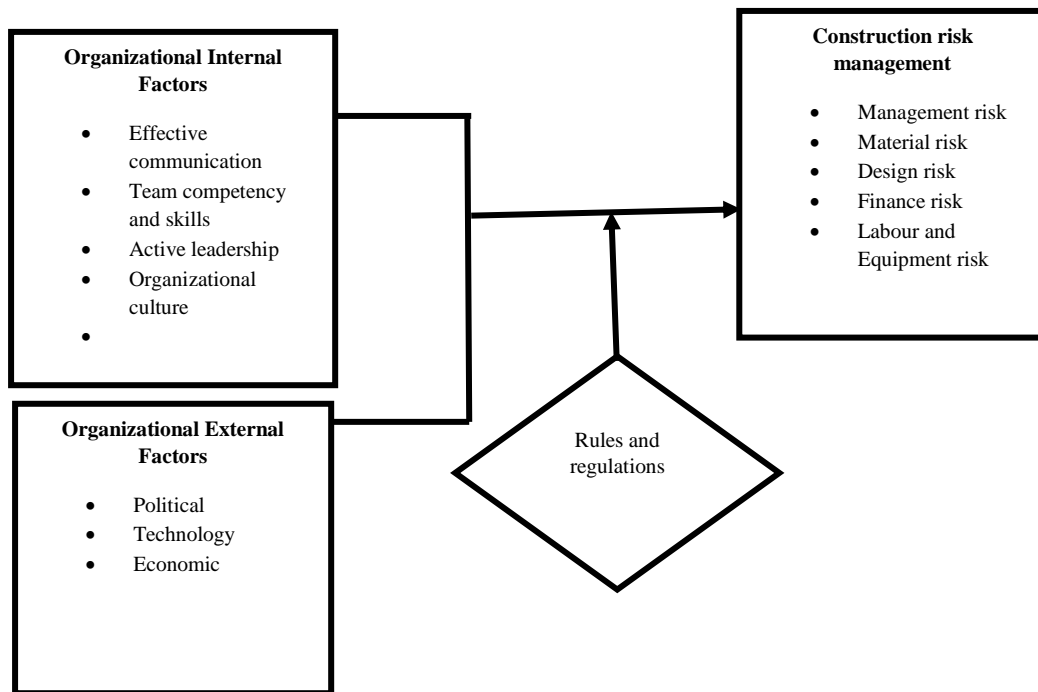


Fig1: Conceptual framework

METHODOLOGY

This study is a cross-sectional research design. Which means, data were collected at a single-point-in-time using structured questionnaire (Kumar et al., 2013; Sekaran & Bougie, 2013). However, proportionate stratified random sampling technique was also employed in the on-going research. The research approach is quantitative, which is a research approach that is mostly adopted in social sciences (Sekaran, Robert & Brain, 2001). Considering this study as the pilot test of an on-going research which was conducted in Abuja and Lagos Nigeria on 19th, June 2015, among the contract manager, executive director, marketing manager, project manager and engineer. According to Malhotra (2008), a pilot study mostly necessitates a range of (15-50) respondents. Therefore, a total number of fifty (50) questionnaires were personally distributed with the return rate of forty (40) which is suitable for the pilot study analysis.

Instrument Design

Asika (1991) affirmed questionnaire as one of the appropriate survey instruments for research. To make sure all the variables in this research framework are all measured, items for this study

were adapted from various sources in order to create item pool and content validity, which include previous research findings on the construct of this study (internal and external organizational factors, construction risks and government rules and regulations. These items were adapted and modified from preceding literatures (Kumaraswamy & Chan, 1998; Jaafari, 2001; Kamaruddeen et al., 2012; Sun & Meng, 2009; Aibinu & Odeyinka, 2006; Mezher & Tawil, 1998) with the purpose of creating the validity of the construct, including (a) create contact prior to the main study between the researcher and the organizations (b) ascertain the reliability of the constructs and (c) anticipate the likely challenges that may arise before the actual data collection of the study. Similarly, the study adopted the use of five-point likert scale rating from 0.1 = 'very low,' 0.3 = 'low', 0.5 = 'medium', 0.7 = 'high', 0.9 = 'very high', to measure the feedback to the questionnaires (Adeleke et al. 2015).

A rating scale helps the researcher in computing the standard deviation and the mean feedback on variables and also the mid-point of the scale (Sekaran, 2003; Sekaran and Bougie, 2009). Previous study of Krosnick and Fabrigar (1991) argued that any scale between 5-7 points, has a propensity of high reliability and validly measure items compare to a shorter or a longer rating. However, Dawis (1987) and Garland (1991) proposed that the choice of the measurement scale mostly depends on the taste of the researcher since there is no single superlative method of constructing a scale. An appropriate method for one research problem might be appropriate for another. It was further argued by Krosnick and Fabrigar (1991) that the conduct established by respondents is either to satisfy or optimize the survey. Thus, this study adopts the use of a five-point likert scale in order to avoid the respondents from selecting an unbiased point which may reduce the quality of the questionnaire. More so, all the constructs/variables in this study are multidimensional. The detail of the constructs and their analogous dimensions are depicted in Table 1.

Table 1: Source of measurement

S.N	Constructs	Dimensions	Source	Remarks
1	Internal factors	Effective communication Team competency and skills	Kumaraswamy & Chan (1998)	Adapted
2	External factors	Active leadership Political factor Organizational culture Technology factor Economic factor	Jaafari (2001) Kamaruddeen et al., (2012) Sun & Meng (2009) Sun & Meng (2009)	Adapted
3	Government policy	Rules and regulations	Mezher & Tawil (1998)	Adapted
4	Effective construction risks management	Management Material Design Finance Labour and equipment	Aibinu & Odeyinka (2006)	Adapted

RESULT AND DISCUSSION

Response Rate

The word response rate refers to the total number of completed and returned survey questionnaires, classified by the number of sample respondents who are qualified for the survey (Frohlich, 2002). Prior managerial studies depicted that 32% were the average response rate for survey studies (Fohlich, 2002). Thus, the author suggested some approaches to improve response rate in survey studies such as:

- 1) The respondents must be aware before the survey.
- 2) Give a sincere appeal on the cover letter.
- 3) Conduct a pilot study, and use the existing scale for survey.
- 4) Be sure the items are well formatted and managed.
- 5) Mailed the questionnaire more than once.
- 6) Provide a prepaid postage.
- 7) Make non-stop follow up.
- 8) Send the questionnaire to the appropriate respondent.
- 9) Provide the third party logo (such as construction company logo) on the survey questionnaire, and
- 10) Add more effort to get accurate result at the end of the research.

This research adopted the strategy listed above but with the exceptions of number of 5 and 6 because the questionnaires were delivered by hand to all respondents to get more response. In this study, a total of 331 questionnaires were distributed to the Local, National and Multi-national construction companies in Abuja and Lagos state of Nigeria. In an effort to attain high response rates, a lot of SMS (MacLean et al., 2005) and phone call reminders (Sekaran, 2003) were sent from time-to-time to all the respondents who were yet to complete their given questionnaires after four weeks (Dillman, 2000; Porter, 2004).

Consequently, the outcomes of this survey yielded 248 returned questionnaires, out of 331 questionnaires that were distributed to the target respondents. This gives a response rate of 75% following Jobber's (1989) response rate definition. Out of the 248 returned questionnaires, 10 were void because a substantial part of those questionnaires were not filled by the respondents; and the remaining 238 useable questionnaires were used in this study analysis. This there indicated 72% useable response rate (Adeleke et al., 2016). Therefore, a response rate of 72% is regarded appropriate for this study analysis because Sekaran (2003) proposed that 30% response rate was abundant for surveys (see Table 2), as this study followed Sekaran.

Table 2: Questionnaire distributed and decisions

Response	Frequency/Rate
No. of distributed questionnaires	331
Returned questionnaires	248
Return and usable questionnaires	238
Return and excluded questionnaires	10
Response rate	75%
Valid response rate	72%

Normality Test

Previous studies of (Haenlein, & Henseler, 2009; Wetzels et al., 2009) have conventionally presumed that PLS-SEM offers accurate model estimations in circumstances with enormously non-normal data. Nevertheless, these presumptions may change to be false. Lately, Hair, Sarstedt, Ringle and Mena (2012) proposed that researchers should carry out a normality test on the data. Extremely kurtotic or skewed data can amplify the bootstrapped normal error estimates (Chernick, 2008), which in turn undervalue the statistical significance of the path coefficients (Dijkstra, 1983; Ringle et al., 2012a). Going by Field’s (2009) proposition, in the current study, a histogram and normal probability plots were carried out to ensure that normality presumptions were not breached. Figure 2 shows that collected data for this study follow a normal rule since all the bars of the histogram were shut to a normal curve. Therefore, Figure 2 shows that normality presumptions were not breached in the present study.

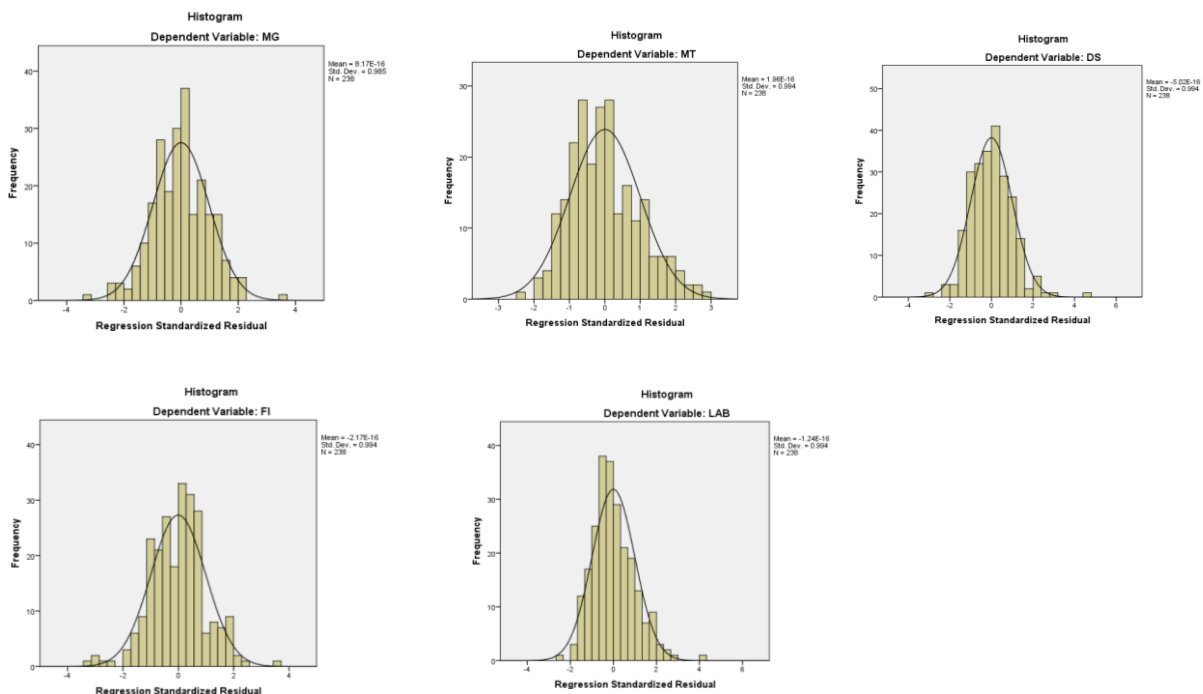


Figure 2: Histogram and normal probability plot

Multicollinearity Test

Multicollinearity is a state where more exogenous latent constructs are highly correlated. The existence of multicollinearity between the exogenous latent constructs can considerably change the estimates of regression coefficients of the tests for their statistical significance (Chatterjee & Yilmaz, 1992; Hair et al., 2006, Nawansir, Lim, Othman, 2013, 2016). Specifically, multicollinearity increases the standard errors on the coefficients, which later makes the coefficients statistically non-significant (Tabachnick & Fidell, 2007). To detect multicollinearity, variance inflated factor (VIF) with its tolerance value were examined to detect the multicollinearity problems. Hair, Ringle and Sarstedt (2011) proposed that multicollinearity was a concern if VIF value is more than 5 and the tolerance value is less than .20.

Non-response Bias Test

Non-response bias was defined by Lambert and Harrington (1990) as "the dissimilarities in the answers provided by the non-respondents and respondents." Hence, in order to eradicate the likelihood of non- response bias, Armstrong and Overton (1977) proposed a time-trend extrapolation method, that involves relating the early and late respondents (i.e., non-respondents). It was further disclosed from the author's argument that late respondents share akin features with non-respondents. To be specific, an independent samples t-test was carried out to discover any likely non-response bias on the actual study variables comprising management risks, material risks, design risks, finance risks, labour and equipment, effective communication, team competency and skills, active leadership, political factor, organizational culture, technology factor, economic factor and rules and regulations. Table 3 depicts the results of independent-samples t-test attained.

Table 3: Results of independent-sample T-test for non-response bias

Variable	GROUP	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	
					F	Sig.
EC	Early response	25	2.8640	.72277	1.182	.278
	Late response	213	2.7174	.76598		
TC	Early response	25	2.6240	.80482	.046	.831
	Late response	213	2.7362	.80941		
AL	Early response	25	2.5600	.70814	2.529	.113
	Late response	213	2.7817	.85877		
PL	Early response	25	2.3520	.66151	.123	.726
	Late response	213	2.4122	.68131		
OC	Early response	25	2.5600	.68866	.440	.508
	Late response	213	2.5282	.63340		
TG	Early response	25	2.4400	.82689	.543	.462
	Late response	213	2.4988	.87365		
EN	Early response	25	2.3000	.69970	.186	.667
	Late response	213	2.4460	.66279		
MG	Early response	25	2.6862	.60239	.219	.640
	Late response	213	2.6941	.61336		
MT	Early response	25	2.8100	.95274	1.632	.203
	Late response	213	2.7171	.79620		
DS	Early response	25	2.6200	.81155	.257	.613
	Late response	213	2.6886	.70732		
FI	Early response	25	2.1700	.75939	.044	.834
	Late response	213	2.3439	.73570		
LAB	Early response	25	2.5657	.75534	.008	.931
	Late response	213	2.7103	.76239		
RG	Early response	25	2.2800	.73711	.264	.608
	Late response	213	2.4404	.69802		

EC= effective communication, TC= team competency and skills, AL= active leadership, PL= political factor, OC= organization culture, TG= technology factor, EN= economic factor, MG= management risk, MT= material risk, DS=design risk, FI= finance risk, LAB= labour and equipment risk and RG= rules and regulations.

Common Method Variance

Common method variance can be viewed as a potential problem in behavioral research, CMV is defined as the variance which is constantly attributable to the measurement process relatively than the main constructs the measures characterize (Podsakoff et al., 2003). There has been a serious issue on how to eliminate method biases because it is one of the primary sources of measurement error detected in behavioral research.

This research has used self-reported data acquired from Local, National and Multi-national construction companies in Abuja and Lagos state Nigeria, which generate potential for common method variance (CMV). The implication of this is that the predictors (i.e., effective communication, team competency and skills and active leadership), and criterion variables (i.e., management risks, material risks, design risks, finance risks, labour and equipment) are gathered from a single rater or source (employee). Some statistical and procedural measures were therefore taken in the research process to solve the issue of CMV (Podsakoff et al., 2003).

Sample Characteristics

This part depicts the demographic profile of the respondents to the sample. The demographic features observed during this study contain positions at the company, years of experience and gender. Out of 238 respondents who participated in this survey, 10.9% are the contract manager; 3.4% executive director; 5.0% marketing manager; 31.5% project manager; 30.3% engineer and 18.9 % other employees. Their year of work experience was rated from 1 to 47. The highest (5.9%) percentage of work experience was 14 years, followed by 12 years and 13 years respectively. As for gender, the percentage of male respondents was 76.5% compared with 23.5% female. Again, a total of 36.6% of the companies specialized in building apartment, another 54.7% specialized in roads' construction, and 6.7% specialized in bridge construction, while 2.1% of the respondents are in other specializations. This was followed by company's ownership with 63.0% as the highest which were local companies; 6.3% for the national companies, 30.3% for the multi-national companies and other companies were 0.4%. The company's operational business location ranged from local markets to international markets. The local company operations represent 60.1%, which was the highest percentage. This was followed by companies operating within few states, with 3.8% of the total respondents. Companies within a region was only 2.5% of the total respondents. Companies operating across the entire Nigeria represents 16.8%, while those that operate within the international market represent 18.4%. As regards the year of company's existence, which ranged from 3 to 65 years of experience, the lowest was 0.4% of the total respondents, while the highest was those with 12.2%. Finally, the size of all the sampled company's influences the number of their employees, thus, the employees rated from 5 to 87156, where the lowest and the highest number represent 0.4% and 5.9% respectively as shown in Table 4 and 5.

Table 4: Demographic breakdown of the respondents

Respondents	Frequency	Percentage (%)
Position in the company		
Contract manager	26	10.9
Executive director	8	3.4
Marketing manager	12	5.0
Project manager	75	31.5
Engineer	72	30.3
Other employees	45	18.9
Working experience (Years)		
Lowest working experience	1	0.4
Highest working experience	47	5.9
Gender		
Male	182	76.5
Female	56	23.5

Table 5: Demographic breakdown of the companies

Parameters	Frequency	Percentage (%)
Company specialization		
Apartment buildings	87	36.6
Roads	130	54.7
Bridges	16	6.7
Others	5	2.1
Company ownership type		
Local	150	63.0
National	15	6.3
Multi-national	72	30.3
Others	1	0.4
Company business location		
Local market areas	143	60.1
Within few states	9	3.8
Regional	6	2.5
Across Nigeria	40	16.8
International markets	39	18.4
Company existence (years)		
Lowest	1	0.4
Highest	29	12.2
Company employee		
Lowest	1	0.4
Highest	14	5.9

CONCLUSION

Inclusion, this paper has evaluated the gathered data through series of statistical techniques to ensure it is error free and to fulfil the multivariate assumptions. Therefore, all the assumptions were achieved from the data cleaning and screening procedures from the response rate, normality test, multicollinearity test, non-response bias test and common method variance missing data analysis, outliers, normality and multicollinearity assessments that were conducted. Hence, this study data fulfilled all the multivariate analysis assumptions, and future studies can effectively make use of the investigated variables, which will further provide more empirical evidence to the growing body of knowledge of this domain.

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THE EFFECTS OF CORE VALUES AND SOCIAL MEDIA TOWARDS ORGANISATION’S REPUTATION RISKS

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ABSTRACT

The rise of the social media is rapidly changing how organizations go about their daily business. Reputation risk is one of the key business risks that all organizations need to deal with and it is an increasingly important area of concern in today’s business world. Due to the existence of the social media, reputation risk has expanded and become more dynamic. It is currently the priority list in the organization’s business risk. The consequences of the social media could affect the activities of an organization; and its stakeholder’s trust and expectations. It is important for organizations to be attentive of what the stakeholders mention about them in the social media. The stakeholders are looking for the truth about the organization in terms of transparency and consistency. The aim of this conceptual paper is to discuss the core values elements of transparency, trust, engagement and authenticity with regards to reputation risk between the organization and stakeholder relationship. The social media as one of the variables predictably mediates this relationship. Social media is not only about technology because from the philosophical standpoint, it is about relinquishing control, transparency, trust, engagement and authenticity.

Keywords: Reputation risk, Reputation, Transparency, Trust, Engagement, Authenticity, Social media, Stakeholders

INTRODUCTION

The advances of new technologies have changed many things, namely the way how we communicate, how we do business, how we make decisions, people’s expectations, etc. However, one thing that has not changed is the importance of an organisation’s reputation (Janson, 2014). Every organisation has a reputation whether it is large, small, established or a new-start up. Basically, when the organisation has a good reputation, everyone will be happy

especially the employees, customers and shareholders. A good reputation is a great value and it takes time to build. The most famous quotation from Mr. Warren Buffet is “It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you will do things differently.” He pointed out that an organisation can easily be damaged due to its reputation and there are always risks associated with it. Nowadays, reputation can be irreparably damaged in a minute due to the advances of technologies especially the increase use of social media. Again, it will take time to recover after the damage has been done.

Therefore, risk has eventually become more complicated and challenging compared to ten years ago i.e. before the popular of social media. Some of the risks related to the organizations are operational, employee, fraud, information, intellectual property, compliance, and strategic risk; however; reputation risk has become an increasingly important business risk that organizations need to face and manage carefully in their day-to-day activities (Gatzert, Schmit, & Kolb, 2015; Hövener & Risk, 2015). According to Aula (2010), it is an operative type of risk that involves non-functioning or poor functioning of internal operations or external events that cause reputation loss to an organisation. Examples of the internal operations could be from product problems to employee issues and the external events could include both natural and man-made disasters. Basically, it is happening when the expectation of the stakeholders was not met and this could impact the organisation’s reputation that would affect the result of its performance. When there is a bad reputation, there is a tangible impact to the organisation. Reputation risk is defined as a possible cause of threats or damage done to an organization (Soprano, Aldo, Crielaard, Bert, & Piancenza, 2010) and it can happen in any situation, in any type of organization. It is an expected threat and generally stakeholders (e.g. owners, employees, customers, suppliers, partners, governments, public, etc.) are concerned about the organization’s reputation. The existence of reputation risk is not dependent on the actual situation, but rather on the perspective of stakeholders regarding the situation (Aula & Heinonen, 2016); and they are looking for the truth about the organization itself such as transparency and consistency (Dutot, Galvez, & Versailles, 2016). Therefore, the stakeholders’ views play an important role in regards to the organization’s reputation and to minimize the threats, organizations need to be cautious of their concerns, attitudes, and belief.

Reputation risk comes from uncontrollable external and internal organizational factors (Aula & Mantere 2013). For example, through electronic word-of-mouth (eWOM), information can be manipulated and reach a larger audience in a split second. It could be a positive, negative or neutral eWOM that can spread rapidly (Majchrzak, Faraj, Kane, & Azad, 2013) and affect an organization’s reputation. Thus, the social media has changed how organizations perform their activities and communicate with their stakeholders (Aguenza, 2012). Consequently, it is important for organizations to be attentive of what the stakeholders mention about them in the social media. This is called engagement or transparency (Zolkos 2012; Jurgens, Berthon, Edelman, & Pitt, 2016).

Due to the growing importance of social media, organizations have increasingly relied on social media in regards to their business activities. Therefore, social media is the cause that increases the reputation risk of an organization due to its consequences (Hosseinali-mirza, de Marcellis-Warin, & Warin, 2015). It could have a huge impact of that organization and the impact could affect the organization externally and internally whether it is a good or bad reputation towards its stakeholders. Some of the important bad external consequences are the loss of investors and customers that led to the fall of share prices and the reduction in market size; and the bad

internal consequence is it could impede the motivation of the organization’s employees (Soprano et al., 2010). All of these bad consequences of reputation risk with the social media can easily affect the organizations’ brand or reputation and will lead to the decline in revenue and poor performance (Aula & Heinonen, 2016). It will be otherwise if it has good reputation. Reputation risk by the social media is also expanding, becoming more dynamic, and creating a bigger problem in an organization (Aula & Heinonen, 2016; Bhanot, 2011). The reputation of an organization could easily and quickly be damaged through social media, thus negatively affecting the organization’s activities and its stakeholder’s trust (Honey, 2009). Subsequently, organizations have to spend more time, money and resources to deal with these various stakeholders (McCorkindale & Distaso, 2013). Organizations are using the social media due to its functions and features of immediacy, interactivity, and transparency (Aguenza, 2012). Organizations can maintain or attract new customers for its good reputation (Wilburn & Wilburn, 2015). By using the social media, organizations can increase their business activities and reputation (Kinzey, 2010). Investors, for example, are investing in organizations with good reputation because they trust that these organizations can give them good returns (Aula & Heinonen, 2016). Likewise, customers also will increase their purchase due to high-level trust. Social media is becoming an important tool for an organization and organizations are depending on it in regards to their engagement activities (Benthaus, Risius, & Beck, 2016). Some of the activities related are monitoring (Hanna, Rohm, Crittenden, 2011), analyzing (Benthaus et al., 2016), and controlling (Aula & Heinonen, 2016).

The advances in information and communication technologies have introduced a new flagship of transparency and trust towards reputation risks (Aula & Heinonen, 2016). Previous studies done in regards to reputation in two universities in Finland have shown that reputation risk to be one of the most important issues since it is difficult to approach, comprehend, and manage due to the growth of social media. According to Aral, Dellarocas, and Godes (2013), more research is needed to study the changes at the organizational level and business activities due to the social media and the strategic use of social media at the organisational level. So far, a certain number of studies have made efforts to focus on the effects of online review on consumers (Utz et al., 2012; Vermeulen & Seegers, 2009) and only a few studies focus on the effect of the social media activities of organizations. These latter studies typically do not focus on organization reputation but on related concepts like consumer trust, emotional appeal, and brand attitude that generally show positive effects (Schivinski & Dabrowski, 2013; Coulter et al., 2012; Van Noort & Willemsen, 2012). So far, there are no empirical studies have directly tested the relation between engagements in organization’s social media activities and its reputation (Dijkmans, Kerkhof & Beukeboom, 2015).

Jiang et al. (2016) proposes a research that may link leadership development to other important aspects of social media management for example core values (authenticity, transparency, trust, engagement, etc.) for social media use, social media strategic planning and decision making, understanding of new functionalities, adoption of multi-way online interactions, and the interplay between social and tradition media. Besides, there is only little research investigating how companies should manage their social media activities and whether the social media tools are suitable to support their goals (Miller & Tucker, 2013) as well as understanding social media’s impact and potential implications of their adoption (Jarvenpaa & Majchrzak, 2010). A review of existing reputation scholarship also helped identify trust, integrity, engagement, innovation, and source credibility as functions of reputation (Huang-Horowitz & Freberg, 2016).

Reputation risk is an increasingly important area of concern in today’s business world (Cho & Wu, 2014) especially to well-known and established organizations since business is built on reputation. The results published by Deloitte (2014) global survey on reputation risk showed that reputation risk is still a “strategic business issue” since most of the executives (eighty-eight percent) said that it was “a key business challenge” in 2014 (Deloitte, 2014). It is one of the key business activities that organizations need to deal with (Hövenner & Risk, 2015). Although reputation risk is at the top “strategic business issue” of most executives, the approaches for managing reputations can present challenges due to its “abstract phenomenon” and the advances of technology have intensified the way in which reputation changes and reputation risk emerges (Aula & Heinonen, 2016). With social media, it makes the situation become even more complicated

Previously, by using traditional media channels such as television, radio, newspaper, magazine, etc., organizations were able to filter the information given to the stakeholders (Aula & Heinonen, 2016). The contents could have been modified by the organization to maintain a good reputation of the organization. Sometimes, when organizations deal with different stakeholders, the organization would adjust the information accordingly to the needs of the stakeholders (Carter, 2006). This constitutes to a decrease in trust by the stakeholders due to the lack of openness in an organization (Aula, 2010; Parris, Dapko, Arnold, & Arnold, 2016). But nowadays, the advances in information and communication technology i.e. the power of the social media i.e. Web 2.0 and mobile technologies have reduced the ability of an organization to act as gatekeeper (Aula & Heinonen, 2016). Because of this, organizations cannot control the flow of information beforehand (Aula 2010; Hekkala, Vayrynen, & Wiander, 2012). This would not be easy to control as compared to the traditional media. In addition, this technology has made a “disruptive shift in business” (Poeppelbuss & Malsbender, 2013). Therefore, the control of reputation in relation to social media was a big concern (Hekkala et al., 2012). The most important obstacles to social media use in organizations are the loss of control messages, the lack of resources and knowledge, and negative feedback from the stakeholders (Sobaci, 2016). This will increase its reputation risk as the difference between the organization’s reputation and its reality widens (Aula & Heinonen, 2016).

People are currently making use of social media to find information about the organisation where the “subjective truth become a collective truth on what the organization is and what it should be” (Aula & Heinonen, 2016). Hence, the social media has the ability to reveal the truth about the organization. Therefore, organizations need to be cautious on how their information is being posted or replied on the social media because social media has been a place for organization’s strategic communication. Traditional risk management approaches have been quite stagnant and straightforward (Aula & Heinonen, 2016) as compared to the present time. Reputation risks have become increasingly dynamic due to social media’s role of spreading the disease in the society (Shang, 2013) and it can come to the organization from many unpredictable ways including from its own employees (Aula & Heinonen, 2016).

One of the unique features of Web 2.0 of social media is the two way communications, however, it is not become fully utilised in terms of engagement, listening and collaboration (Macnamara, 2011) since it is generally used as a traditional way i.e. as a means of information for most organisations. Turban, Strauss, and Lai (2015) pointed out that social media can be used for social interactions, conversations, engagement, and sharing ideas in a variety of ways. Social media has induced an extraordinary effect on an organisation’s reputation as they have

to spend more time, money and resources into engaging and managing relationships with diverse stakeholders. This is because social media creates complex relationships and interactions between organisation and its stakeholders that either create positive or negative consequences (Reiman, 2012; Poeppelbuss & Malsbender, 2013). Ignoring negative messages about the organizations or still depending on the traditional way to communicate can put the organisation and its reputation at risk (Maskin et al., 2014). With the advances of technology, these diverse stakeholders can create and curate content as well as become a spectator (McCorkindale & Distaso, 2013). Nowadays, stakeholders often rely on social media as a source to look for information in relation to the organizations stories or updates. Benthaus et al. (2016) indicated that it is important to provide relevant content to the respective stakeholders via social media since it has the highest returns on reputation for the organisation. According to Choi and Thoeni (2016), consumers use social media mainly as a trusted source of information to give comments on organisations’ offerings. It continues to be difficult for an organisation to make a strategic decision at the right level of engagement to share messages and at the same time to improve the stakeholders perception about the organisation (Benthaus et al., 2016). Without a strategy, simply posting a message in social media can do more harm than good (Fullerton, 2011).

Reputation always originates within an organisation; this is precisely the reason why organizations should develop better tools and analysis methods of analysis for utilizing their internal big data for identifying reputation risks since the spectrum of reputation risk is expanded and risk dynamics boosted by the social media. Effortless sharing of information has also increased the potential that employees may disclosed private or sensitive information that damages the reputation of the organizations (Umphresa, Tihanyi, Bierman, & Gogus, 2013). In addition, lack of governance, including lack of policies and guidelines informing social media use by employees, lack of training, and lack of monitoring of social media pose significant security, reputational and legal risks to organizations which should be addressed (Macnamara, 2011). Reputation is the most valuable asset and often regarded as a key competitive advantage for any organizations that wants to be successful.

In today’s world, as the result of the new information and communication technologies i.e. the social media that can spread the information very quickly, organizations are increasingly facing challenges in handling their reputation especially with their stakeholders and this would be the key to their success. According to Aula and Heinonen (2016), organizations cannot afford to handle reputation risks and if the reputation risks are not identified, monitored and managed; organizations will have many unexpected and costly consequences in terms of revenue and brands. This can increase the threat to the organisation than in the past. Furthermore, to manage the drivers of reputation is not an easy task because of the conflicting interest among the different stakeholders. Therefore, management should ensure all the key drivers are applied in the organisation (Jacob, 2012). Thus, this study will help the organisation on how to minimize the threat of this reputation risk by looking at the core values or key drivers of reputation with regards to social media used. As Aula (2010), points out that executives must now consider what types of reputation risk are produced by social media, what are the consequences when these happen, how organizations should manage reputations risks emerging from social media, and whether organizations should have an “ambient publicity strategy.” This strategy can enhance a firm’s strategic goals as it builds relationships with stakeholders, to become a reputable organisation, and create value to enhance and maintain a good reputation.

Hence, organizations are now more concerned about their stakeholder activities in regard to the social media (Aula & Heinonen, 2016). In view of the above discussions, the objective of this study is to examine the relationship between the core values i.e. of transparency, trust, engagement and authenticity; and its impact on reputation risk in regards to social media.

LITERATURE REVIEW

This section reviews literature on the core values of reputation risks and social media as well as other selected constructs relevant to this research.

Transparency, Social Media, and Reputation Risks

Transparency is a key driver to reputation management and it is important for an organization to communicate effectively to its stakeholders with the right information, media and time (Parris, Dapko, Arnold, & Arnold, 2016). So, organizations rely on transparency in maintaining their good reputation. It is claimed that the social media has pushed organizations to be more transparent in their decisions (Wilburn & Wilburn, 2015) and it is said that stakeholders today request the organizations to reveal their actions i.e. transparency through social media (Aula, 2010; Chaher & Spellman, 2012) since the social media is able to meet these demands. This brings transparency to new a new level because more information about the organization’s activities is accessible to the stakeholders (Chaher & Spellman, 2012). With social media, stakeholders can benefit from being well informed (Jacob, 2012), however, this will increase the risk to organizations (Hatch & Schultz, 2010). Organizations also need to monitor how the stakeholders foresee their organizations in the social media 24/7, which will add tasks to organizations. Thus, managing transparency in the social media would not be an easy task because of the different interests by different stakeholders (Jacob, 2012). Furthermore, information is not easily filtered through the social media (Gatzert et al., 2015). Transparency should happen proactively, rather reactively whereby it should be informed to all the stakeholders before or during a reputation crisis (Turban et al., 2015). This is also to avoid the story from being manipulated as the source that is not originally from the organization itself. It would be a bad consequence when the organizations hide the truth and later is discovered by the stakeholder themselves (Turban et al., 2015). Lack of transparency creates a negative impact on the organizations’ reputation (McCorkindale & Distaso, 2013). For example, when customers launch a complaint in the social media in regards to dissatisfaction of the organizations’ product offering, the information will be read by thousands of people and this could affect the organizations’ reputation. However, organizations could not be fully transparent (McCorkindale & Distaso, 2013) because certain information is considered private to the organizations especially those that involve their clients. In addition, not all information is good to be transparent because it would give a bad consequence to the organizations i.e. could damage their reputation, increase legal risks (Chaher & Spellman, 2012), risk of losing the competitiveness, etc. Another problem is for organizations to set the limit in transparency (McCorkindale & Distaso, 2013) and this would not be an easy task in the social media. Due to the stakeholders network with many other people, the more transparent the organization will become because of the conversations and access (Hatch & Schultz, 2010). This is even more possible via the social network. Consequently, transparency creates more reputation risks to organizations.

A few researchers suggested that the way to promote transparency in organizations is by using the social media, specifically ‘Twitter’ account which can help to build relationships and trust with the stakeholders (McCorkindale, 2010; Park & Lee, 2011). It is proposed that organizations should include the social media as part of their transparency strategy as social media plays an important role in transparency (Pownall, 2015).

Trust, Social Media, and Reputation Risks

It is suggested that once transparency is successfully built, trust will eventually come into an organization (Parris et al., 2016) and trust is an important element in business activities (Grimmelikhuijsen & Meijer, 2014). Thus, in order to build trust, an organization should always give the right information to the stakeholders by strategically incorporating it with the social media (McCorkindale & Distaso, 2013; Sobaci, 2016). Many organizations have incorporated the social media in their activities including decision making (Chaher & Spellman, 2012) since it can help the organization to enhance its trust, transparency, and engagement; however, the effectiveness of this tool is still questionable. Researchers claimed that social media is a powerful tool of building trust and reputation, therefore, organizations could not avoid not using the tool (McCorkindale & Distaso, 2013; Dijkmans et. al, 2015; Chaher & Spellman, 2012). Some of the powerful and well-known social media nowadays are Facebook, Twitter, LinkedIn, Instagram, and other social networking sites (SNS).

The functions and features of the social media that allows unfiltered information to be available online such as remarks, comments, complaints, discussions, product reviews, recommendations, etc. has increased the users’ trust towards the information (Hekkala et al., 2012; Lambret, 2016; Power & Phillips-Wren, 2011; Turban et al., 2015). Thus, social media enables the establishment of trust between the stakeholders and organizations (Reiman, 2012); and it acts as a basis of an organization’s reputation (Kietzmann, Hermkens, McCarthym, & Silvestre, 2011). However, the information in social media could not be validated in terms of quality since it is based on user-generated content (Kietzmann et al., 2011). Organizations spend a long time to build their trust or reputation but suddenly it can be easily being tarnished in the social media (Aula & Heinonen, 2016). Defamatory remarks, criticisms, and false accusations are some of the common feedback nowadays for the organization to face. Not only are those, these negative feedbacks being highlighted in most of the social media sites. This could create a higher risk to the organization’s reputation due to the high level of trust in the social media (Kietzmann et al., 2011). Basically, researchers are looking for ways or techniques to filter the user-generated content for high quality information that can produce trustworthiness (Khatiban, 2012). Subsequently, organizations would still like to control the flow of information even though in the social media so as to protect themselves from reputational risks (Hövenner & Risk, 2015). In contrast, it is not appropriate for organizations to control the flow of information since they should be part of the community and become a reflective trust (Arnaboldi & Coget, 2016).

Trust plays an important role for reputation (Aula & Heinonen, 2016). The reputation of an organisation would be affected if the trust was damaged (Yousafzai et al., 2005). To re-build the trust that has been damaged, the organisation would need transparency to fix it (Jahansoozi, 2006). With transparency, organizations would be required to tell the truth about the crisis. During the crisis, the long-term relationship between the organizations and stakeholders, based on the mutual trust and loyalty that were created earlier are important for the organizations to

survive (Jacob, 2012). It is claimed that organizations can use the social media to increase the stakeholder’s trust towards the organisation’s reputation (McCorkindale & Distaso, 2013).

Engagement, Social Media and Reputation Risks

According to Carter (2006), it is important to create and sustain the desired public perception about the organisation’s activities by engaging them through information given. Engagement can be defined in three (3) parts that are cognitive, behavioral, and emotional aspects (Dijkmans et al., 2015). Cognitive relates to conscious mental activities such as thinking, learning, and remembering of being interested with the organisation’s activities, behavioral is participating or involving in the organisation’s activities, and emotional is feeling good or favorable towards the organisation’s activities. This engagement analogy presents an idea on how the relations between organizations and their stakeholder should be (Aula & Heinonen, 2016). Via this engagement, information shared or gathered can improve their relationships. Thus, an organisation needs to consider a few keys to engagement i.e. content (Fullerton, 2011), value proposition, customer experience, brand, and internal culture (Roberts & Alpert, 2013). For example, a memorable advertisement will engage into the people’s mind or feelings at times. Organizations should first understand their characters and values, sensitive to emerging trends as to increase the influence of the organisation and the level of engagement with its stakeholders (Reiman, 2012).

Nowadays organizations realize the importance of social media and increasingly depend on it in regards to their activities. With the rise of social media, organizations have made it possible to influence and control information in regards to how their organizations should be perceived by the public (Aral et al., 2013; Schniederjans, Cao, & Schnierderjans, 2013). On the other hand, Arnaboldi and Coget (2016) disagree for organizations to use the social media to exploit or control it as organisations, and individual must think of themselves as part of the community. Social media has important functions in allowing organisation to observe the users’ engagement by reading and analyzing their posts, comments, referrals or recommendation (Aula & Heinonen, 2016). Any users of the social media platform can also see and react immediately on how other people response or give feedback including the organisation and thus reinforcing engagements (Poepelbuss & Malsbender, 2013). The speedy dissemination of information on social media and promptly reacting to them can avoid negative ripple effects to other users, which helps build better relationships with them (Choi & Thoeni, 2016). Thus, an organisation needs to proactively seek a response or reactively respond to their social media users immediately. Montalvo (2011) stated that creativity is essential if an organisation wants to maintain engagement and collaboration with others.

Social media is now being recognized by organizations as a communication and collaboration tool because it can help organizations in developing and engaging customers that enables them to build deeper, long term relationships with their committed customers in order to achieve competitive advantage (Fullerton, 2011). Therefore, there is a need for a strategy for this. According to Macnamara and Zerfass (2012), there are still lack of strategy, policies, guidelines, training, monitoring, and evaluation in organisation with a low to intermediate knowledge and skills in relation to social media as reported in their research. For example, anyone can post a message in social media because it is simple to do so, however, to an organisation it could become a complex relationships and interaction between the organizations and its audiences, which could benefit or harm the organisation when using it. Indisputably,

organizations need to think about the costs and risks when they want to implement social media engagement strategy (Reiman, 2012). This is also supported by Poepplbuss and Malsbender (2013), stated that many organisation are still lack of sufficient knowledge on how to effective use of social media as part of their engagement. If the organisation is not being effective in use or adjusted to latest developments of their engagement especially in regards to its social media strategy, the desired result may not be accomplished (Benthaus et al., 2016).

Authenticity, Social Media, and Reputation Risks

In a traditional mass media, before the information is being released to the public, an organization would generally filter it through a structured process. This information then has been edited and rationalized accordingly. So, the organization’s reputation or the setting of public’s authentic perceptions is usually being reflected of what has been published by the media such as radio, television, and newspaper. Thus, in the earlier days, reputation was built by the media through the framing process and motive using the choice of content and media (Aula & Heinonen, 2016). However, with the social media, it is more difficult for organization to filter the information and unstructured.

According to Arnaboldi and Coget (2016), social media creates authenticity and passion in individuals since they can express themselves on it which tend to be more sincere, emotionally transparent and unfiltered that tend to touch the feeling of other people easily. Therefore, organizations those seen as sincere, accurate, reliable and trustworthy are more authentic because these values and behaviors are being more appreciated by its stakeholders (Stacks, Dodd, & Men, 2013). Due to this, organizations must participate in making conversation with various stakeholders transparently and authentically in order to build their reputation (McCorkindale & Distaso, 2013). For example, Beckman et al. (2009) and Brusseau et al. (2013) found that stakeholder views of authenticity are essential to the accomplishment and recognition of CSR programs. Top management in the organization is expected to become as authentic leaders by presenting themselves through transparency, open sharing information and feeling as appropriate. However, many of them not dare of doing these due to the fear the loss of control and they believe that more transparent and authentic communication will make them more vulnerable (Richter & Wagner, 2014).

It was believed that users feel more authentic and stronger towards the organizations because they can obtain something unique value from the organizations (Reiman, 2012). Macnamara and Zerfass (2012) argued that the views of employees are usually more authentic and credible than organization communication circulated from controlled departments such as public relation and corporate communication. From a survey conducted by Ismail and Latif (2013) on issues and challenges among Malaysian social media users, authenticity appears as one of the key reasons ‘that causes and is caused by other factors.’ By removing some controls, organizations can allow users to protect them in more authentic ways than from corporate statements (Ott & Theunissen, 2015). For example, by deleting a sensitive post or message are likely to create suspicious to the users that the organization is hiding something or not telling the truth. Thus, authenticity and transparency were important aspects for success in an organization, but involving with emotional users could potentially escalate an issue (Ott & Theunissen, 2015).

In conclusion, managing the drivers of reputation is not an easy task, because it contains the

conflicting interests of different stakeholders groups, therefore, the organizations should ensure transparency, trust, engagement, and authenticity (core values) throughout all the activities of the organization (Jacob, 2012) especially with the social media.

THEORETICAL FRAMEWORK

This study will draw upon on a methodology called a strategic objective at risks (SOAR) and two well-known and accepted theoretical frameworks, namely the stakeholder theory and resource-based view (RBV) theory. It begins with an explanation of SOAR and follows by stakeholder theory and RBV in order to provide a clear understanding of how these methodologies and theories can achieve the objectives of this research.

Strategic Objectives at Risks (SOAR)

A strategic objective at risks (SOAR) methodology is chosen for this research because it involves risk. Since the SOAR methodology can be applied to managing any desired (and uncertain) outcome (Monahan, 2008), reputational risk can be applied using this methodology in this research as shown in figure 1 below. Furthermore, since the methodology for managing risks related with strategic objectives as a “desire outcome”, it will navigate the organisation toward attaining its strategic objectives (Monahan, 2008). According to him, that SOAR methodology views risk as risk increases on risk drivers or causes and shows itself in events that have consequences (outcomes). Once a particular risk has been recognizing (i.e. in this case would be social media risk), organisation has to accept the fact and event can happen (i.e. reputational risk) and that it will have consequences (i.e. bad or good reputation). The risk drivers or causes for this case would be the core values such as transparency, trust, engagement, and authenticity. As for the element of risk controls (or mitigation), it will not be considered in this research.

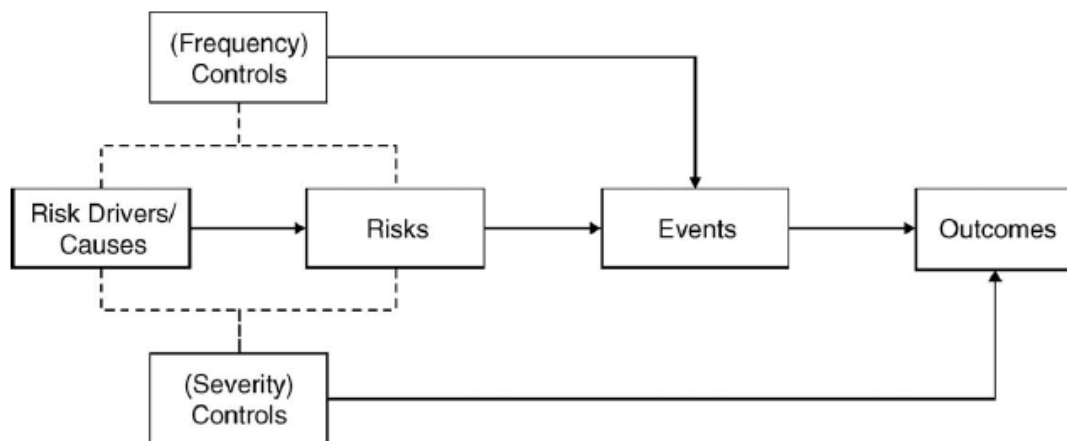


Figure 1: SOAR methodology

Stakeholder Theory

According to Verbeke and Tung (2013), stakeholder theory supports the proposed relationship between a stronger a resource based provided by the stakeholders and firm performance, as successful organizations usually depend on characteristic stakeholder networks for resources selection, access, combination, and accumulation. All of these will create reputation risks to the organisations. Therefore, when mentioning about reputation risk, risk with stakeholders should also be considered. Since stakeholder determines reputation, stakeholder theory would be taken into consideration. Thus, stakeholder theory is used for this conceptual paper. Edward Freeman in 1984, has had initially elaborated out this theory in his book called ‘Strategic Management: A Stakeholder Approach’. According to him, stakeholder is about identifying the groups who are stakeholders internally and externally in organisation; and managing them via the strategic planning. In other words, it could be an individual or organisation that could have interest with the organisation. Thus, the organisation should take into consideration of stakeholder’s interest first as it could affect its reputation. In addition to this Crane and Ruebottom (2011) stated that this theory give organizations other ways of understanding in particular how decision should be made i.e. it is about who can affect organisations, who is affected by them, and what sort of rights do they have in respect to the stakeholders, how should they be consulted, how should they be involved in the decision making as well as the value created by them. Usually when discussed about stakeholder theory, mostly it would be on the corporate governance but here the focus would be in the reputation risk area and its connection to social media.

In an interview with Professor Andrew Crane (Pearson, 2015), he mentioned that stakeholder theory provided a framework of connecting up the stakeholder theory and social media because it has a strong instrumental approach which organizations will care about stakeholders those that have power, legitimacy, and urgency. The stakeholder typology that was developed by Mitchell, Agle & Wood in 1997 is shown below in figure 2. It looks at three (3) factors that determine stakeholder salience which are power (control), legitimacy, and urgency. According to Professor Crane, social media is all about power in many respects because it is about who you can influence, whom you can connect to, how many people in your list of Twitters followers and what have you.

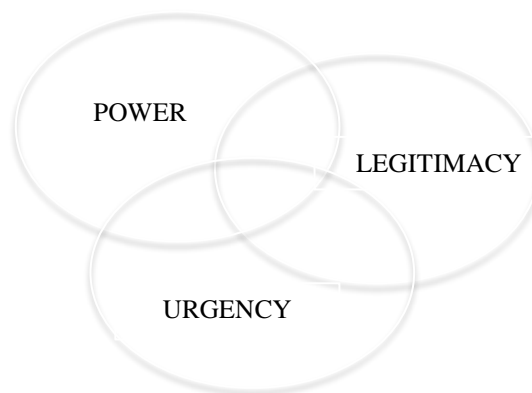


Figure 2: Stakeholder salience
(Mitchell, Agle & Wood, 1997)

Professor Crane also said that most people think of stakeholders in terms of a hub with spoke because organizations tend to differentiate the group i.e. the employees, the consumers, the suppliers, etc. since stakeholder theory has limits in its traditional view and understanding it (refer to figure 3).



Figure 3: Stakeholder Theory of the Firm

In social media, it is all about connections between different groups and towards a much more networked (refer to figure 4) and nuanced kind of understanding of the types of environments that organizations are interacting with. To him, it is a very unruly phenomenon. He also stated that it could become very effective tool if academicians can help organizations prepare for identifying the various constituencies and how can organizations predict what type of response will be from those constituencies. Therefore, an organisation needs to understand the network amongst stakeholders so as to design proper strategies and methods to maximize reputation value amongst them using or based on stakeholder theory. Generally, with social media, stakeholder theory can provide a new view on reputation risk management.

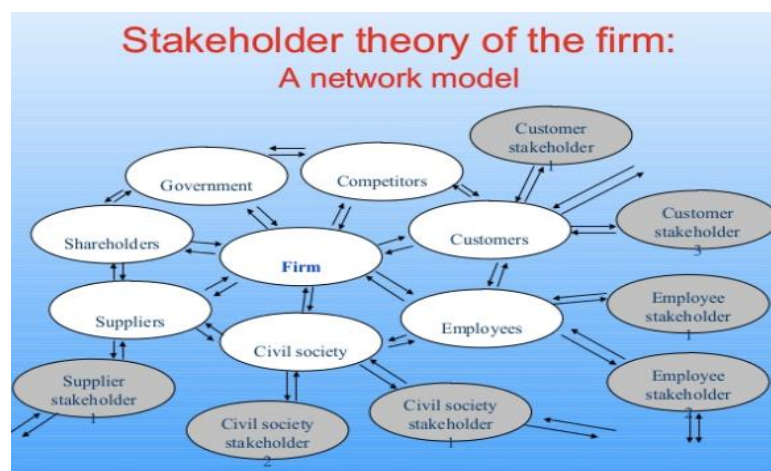


Figure 4: Stakeholder theory of the firm - A network model

Resource-based View Theory

This section will provide a brief review of resource-based view (RBV) theory. In 1980, Caves has differentiated the resources into tangible (physical assets) and intangible (e.g. human skills, knowledge, and experience). Then in 1984, Wernerfelt has distinguished the organizations in terms of the resources they have rather than in terms of products and or services they offer to their customers. He also mentioned that resources could be “anything which could be thought of as strength or weakness of a given firm”. Barney in 1991, had examined “the link between firm resources and sustained competitive advantage” using the four indicators i.e. rare, valuable, imperfectly imitable and non-substitutable. Many theoretical papers then have had used the different resources to reveal how beneficial of a resource might be. In 1992, Chan and Huff cited that the researchers could leverage on RBV theory to advance IS strategy research. In regards to information systems, Wade and Hulland (2004) has compiled all the studies done in relation to RBV. According to them, the RBV has become popular in mid of 1990s and “much works has attempted to identify and define either a single IS resource or sets of IS resources.” They also stated that Bharadwaj (2000), has included IT infrastructure, human IT resources, and IT-enable intangibles which are applicable to this study. In RBV, reputation is characterize as an intangible asset that contributes to organisation performance as a basis of sustained competitive advantage due to its imitable nature (Barney, 1991; Fombrun & Shanley, 1990). Rao (1994) also indicated the same characteristic for reputation because of its rare, socially complex, difficult to trade and imitate. Then, organisation must consistently maintain its reputation, therefore, it is important for that the building and maintenance of a organisation’s reputation be part in its business and strategic plans (Michalisin, Kline, & Smith, 1997). They also stated that by having strategies of RBV that “owning or controlling strategic assets leads to a sustainable competitive advantage.” The rational of RBV implies that the organisation’s competitive advantage will be sustained for as long as its resources are valuable and its competitors fail to acquire, imitate, or find substitute for them (Wade & Hulland, 2004). In addition, all of the organisation’s activities must align with its good reputation i.e. the employee know-how, organisational culture, and reputation would increase organisation performance over short, intermediate, and longtime horizons (Smith, 2008). Hence, the RBV suggests that reputation is a resource leading to competitive advantage. According to Smith (2008) also, application of RBV strategy also proposes that organisation’s competitive advantage originates from its ability to construct and manipulate an appropriate combination of tangible and intangible resources. In the RBV approach, internal and external factors would have complementary relationships that create causal ambiguities that contribute to a valuable reputation and competitive advantage (Boyd, Bergh, & Ketchen, 2009).

Conceptual Overview

By integrating the SOAR methodology with stakeholder and RBV, it can address the problems in this research. While the RBF framework often concentrate on internal resources of an organisation and how the organisation can influence those competences towards sustainable competitive advantages, the instrumental stakeholder approach comprehends that organization is a “social” entity whose activities and performances can affect (and be affected) by various stakeholders (Freeman, 1983). Next, the RBV offers a comprehensive explanation as to the driving forces underlying firm-level competitive advantage, however, stakeholder theory is regarded as secondary set of frameworks that usually related with business ethics and corporate social responsibility (CSR) type of research (Verbeke & Tung, 2013).

By incorporating the stakeholder view in its strategic decision-making, it will increase the benefits of the organization. For example, close relationship with primary stakeholders such as employees, customers, suppliers, and communities creates intangible resources such as reputation, a socially complex resources that may increase organization's ability to surpass its competitors in terms of value creation (Hillman & Keim, 2001). Inside the organization, the RBV suggests valuable resources such as internal stakeholders (e.g. employees) can be motivated by making specific investments via organizational learning that can enhance organization's competitiveness. One of the limitations of RBV is the lack of prescriptive capacity because RBV does not explain how organizations should manage its resources to maintain their competitive advantage (Priem & Butler, 2001). Hence, the stakeholder theory describes into how organizations should manage their stakeholders to access resources, and further develop competitive advantage (Verbeke & Tung, 2013). Basically, according to the RBV needs stakeholder theory to be complete or complement. The conceptual framework integration of SOAR methodology, stakeholder, and RBV theory is shown in Figure 5 below.

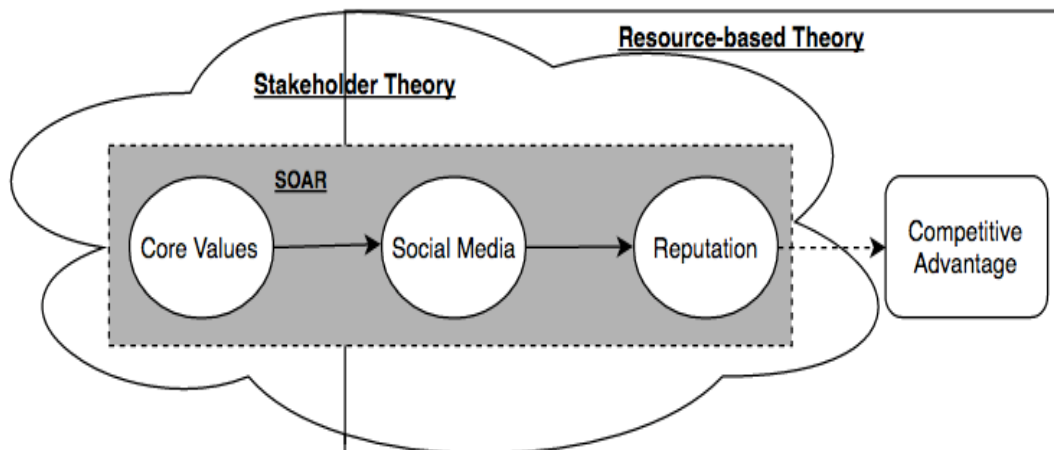


Figure 5: Conceptual Framework

CONCLUSION

Reputation risk is considered as part of the business activities that an organisation will have no choice but to handle it (Hövenner & Risk, 2015). Organizations need to have an on-going strategic process management on how to deal with reputation risk since it is an on-going threat and this threat can only be minimized. With the social media, it is mentioned that the scope of reputation risks has been expanded and has become more dynamic (Hövenner & Risk, 2015; Bhanot 2011). Due to this, an organisation has to change the way of how they do business. Reputation risk is currently the top priority list in the organisation's business risk (Deloitte, 2014). In reputation risk, the most concerned issue is the control of reputation (Hekkala et al., 2012). Organizations have to build, monitor, and manage reputation 24/7 because of the consequences of social media that could affect the organisation's activities; and its stakeholder's trust (Honey, 2009) and expectations. Therefore, it is important for organizations to be attentive of what the stakeholders say about them in the social media (Zolkos, 2012; Jurgens et al., 2016). The stakeholders are looking for the truth about the organisation itself such as transparency and consistency (Dutot et al., 2016).

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Concurrent Session IV B
**Corporate Social Responsibility and Research
Governance**

EMPOWERING STAKEHOLDER MANAGEMENT IN MALAYSIAN NATIONAL CARRIER IN THE AFTERMATH OF TWIN TRAGEDIES

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ABSTRACT

This article presents a theoretical proposition based on stakeholder theory for better business restructuring strategy, particularly in the context of Malaysia Airline Systems Berhad (MAS). Besieged by high operating costs and fierce competition, the national airline has been steadily bleeding cash for years. To compound matters, the airlines saw its losses deepened in 2014 following the disappearance of flight MH370 in March and the downing of MH17 in July. The aim of this article is to argue the need for stakeholder engagement practices in order to revive MAS's damaged brand and losses. Stakeholder engagement can strategically enhance organizational legitimacy and profitability by winning the support of powerful stakeholders such as employees, customers, shareholders, government, supplier and employees' union. This article contributes to the literature by providing a fundamental explanation of how the stakeholder engagement such as through employee, customer, shareholder, government, supplier, and employees' union, can be considered to be a vital part of MAS's business strategy in the aftermath of those misfortunes. As the drastic overhaul process required a range of stakeholders within and beyond the airline itself, stakeholder engagement can be a silver lining to this national carrier which currently being in the restructuring process.

Keywords: Corporate social responsibility, Stakeholder engagement, Strategic management, Malaysia airlines, National carrier

INTRODUCTION

Malaysia Airline Berhad (MAS), the flag carrier of Malaysia was incorporated during the early days of travel in 1937. Since its inception, MAS has developed into a renowned international airline with award-winning product and service. Among the awards that has been conferred were the five-star rating from Skytrax (2005-2007, 2012-2013; one of just seven airlines in the world with this rating in 2013) and recognition from the World Travel Awards as the leading airline in and to Asia (2010-2011, 2013) (See Malaysia Airline Story at www.malaysiaairlines.com). Furthermore, this national carrier has built a reputation for high-standard safety and services and bagging an array of industry awards in recent years for its cabin crew, food and overall services since being founded in 1937 (Chan, 2014). MAS is one of a few airlines have been rated five-star by Skytrax, as well as honoured for having the World’s Best Cabin Staff. MAS also have joined “oneworld” alliance in 2013. This alliance brings together fifteen of the world’s leading airlines (e.g. American Airline, British Airways, Cathay Pacific, LAN, Qantas) which operate more than fourteen thousand daily flights to some one thousand destinations across the globe.

Despite those numerous awards, MAS struggled to cut cost to compete with new low-cost carriers (LCC) in the region since the early 2000s (Rosnan & Mahmod, 2012). In 2013, the airline started a turnaround plan after huge losses beginning in 2011 and cut routes to prominent, but unprofitable, long-haul destinations, such as South Africa, Buenos Aires, and Los Angeles (Thomas, 2011). This airline last made an annual profit in 2010, since when it has lost a total of RM 4.9 Billion (BBC, 2014).

Due to prolonged unimpressive performance, MAS have implemented several restructuring exercise since 2002. After being hit by two aviation disasters in 2014: the unexplained disappearance of flight MH370 on March 8, with 239 people on board; and the shooting down of MH17 over Ukraine on July 17, with 298 people on board, the financial situation of this national carrier worsens even it was already in serious financial difficulties long before. Immediately after the twin tragedies, MAS’s average weekly bookings have decreased dramatically (CAPA, 2014).

In response to that, MAS’s largest shareholder, Khazanah Nasional Berhad which is the government-linked investment corporation, has undertaken restructuring process to save this national airline. Among the key points taken in this restructuring process are 1) Governance and financial framework; 2) Operating business model; 3) Leadership and human capital; and 4) Regulatory and enabling environment (Khazanah Nasional Berhad, 2014). History shows that MAS has several times undergone some restructuring process. The first restructuring process was undertaken in the form of a widespread asset unbundling. The second restructuring process was in 2006 aimed at stemming losses with steps such as axing loss-making routes. Six years later, this airline again has restructured their business plan after recorded the largest net loss in the airline history. MAS suffered a net loss of RM 2.53 Billion on that year due to rising fuel costs and mismanagement (BBC, 2012). Among of the part of their restructuring plan in 2012 was to focus on the premium sector as well as Asian market.

In the aftermath of MH 370 and MH17 tragedies, Khazanah Nasional Berhad have commenced new restructuring plan which focus on returning MAS to sustained profitability and revive Malaysia’s national flag carrier. This MAS’s largest shareholders also have urged all

stakeholders to work together to save the company through a “complete overhaul of the national carrier on all relevant aspects (including) the airline’s operations, business model, finances, human capital and regulatory environment” (AFP, 2014). This claim highlights the importance of stakeholder engagement in airline industry. Stakeholder engagement has been regarded as one of the integral part of Corporate Social Responsibility (CSR). This is because CSR extends firms’ responsibilities to stakeholders other shareholders, including community, society, and the environment. Effective stakeholder management has been found to be a key success factor in implementing CSR (O’Riordan & Fairbrass, 2008) since a primary aspect in implementing CSR is distinguishing key stakeholders (Dobele, Westberg, Steel, & Flowers, 2014). More importantly, it has been found that stakeholder engagement can provide the companies with a competitive advantage (Rodriguez-Melo & Mansouri, 2011).

Stakeholder engagement can be considered to be a vital part of the MAS’s contemporary business strategy which focus on recovery from the impact of the tragedies MH17 and MH370. Our study explores how stakeholder engagement could be applied to enhance MAS’s business strategy, particularly in wake of twin tragedies. The contribution of this article is twofold. First, it provides a practical framework to foster the link between stakeholder engagement and the airline facing restructuring process due to the tragic incidents that affected them. Second, it reinforces the role stakeholder engagement could play in the improvement of operational efficiency and image benefits particularly in the case of airline which has been hit by tragedy. The paper starts by arguing the theory which explains about stakeholder engagement from the perspective of stakeholder theory and how stakeholder engagement can be an important mechanism for MAS’s business strategy in the aftermath of the twin tragedies. The implications of the framework are also discussed.

STAKEHOLDER THEORY

Stakeholder theory explained that organizations are at the nexus of stakeholders engaged in valued creation and trade as their primary objective (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010). Stakeholder theory connotes that managers create value for stakeholder groups in order to retain their contribution to organization objectives. Based on stakeholder theory also, organizations need to satisfy a multiplicity of stakeholders, and focusing on shareholder alone is insufficient. The management is expected to consider and respond to stakeholder needs and to report on its activities to the stakeholders (Freeman, 1984). Stakeholders can be classified into two main categories: 1) Direct; and 2) Indirect stakeholders (Freeman, 1984). In the same fashion, it also can be regarded as business and social stakeholders (Lepineux, 2005) or primary and secondary stakeholders (Clarkson, 1995). Freeman et al. (2010) classifies primary stakeholders such as customers, competitors, suppliers, employees, and shareholders, while secondary stakeholders including government, communities, media, universities, unions and NGO. As the creation of sustainable value are reliant on relationships with crucial stakeholders requiring top management team to identify mutual stakeholder interest and develop consistent approaches to balance stakeholders interest, the integration of the interests of a broad group of stakeholders into organization strategy are important, even critical (Freeman, 2010).

Stakeholder theory provides the explanation pertaining to ‘partnership’ between the organization and stakeholders. Stakeholder engagement is principally how firms relate to their

stakeholder which it is a process that creates dynamic context of interaction, mutual respect, dialogue and change, not one sided management of stakeholders (Andriof & Waddock, 2002). Additionally, Amaeshi and Crane (2006) conceptualized stakeholder engagement as stakeholder dialogue, stakeholder consultation, or stakeholder participation. Engagement to stakeholders is crucial in order to deal with crisis such as airline tragedies. During this hard time, stakeholder will demand more information and airlines can satisfies this need in a satisfactory way to fulfil the stakeholder expectations and gain legitimacy (Hansson & Vikström, 2010). In fact, stakeholder engagement can be regarded as a possible non-market and non-regulatory mechanism that could complement both market instruments and regulations (Amaeshi & Crane, 2006).

STAKEHOLDER ENGAGEMENT: A MECHANISM FOR MAS'S RESTRUCTURING PROCESS

In the wake of MH370's and MH17's Tragedy, engaging with stakeholders can be considered to be a vital part of any contemporary business strategy for MAS. In our mind, focusing on stakeholders can provide MAS with the improvement of both operational efficiency, as well as image benefits. Among the key stakeholders in the airline industry are employees; customers; shareholders or investor group; government and regulators; community groups; unions; suppliers; and NGO's or sustainability experts or the academia. The suggestion of stakeholder engagement framework to support MAS in their restructuring process in the aftermath of twin tragedies is shown in Figure 1. This framework is very useful to MAS as their stakeholders desired information and transparency, particularly in the wake of these twin tragedies. Perhaps this framework may assist MAS to regain back their reputation and legitimacy which subsequently increases their performance.

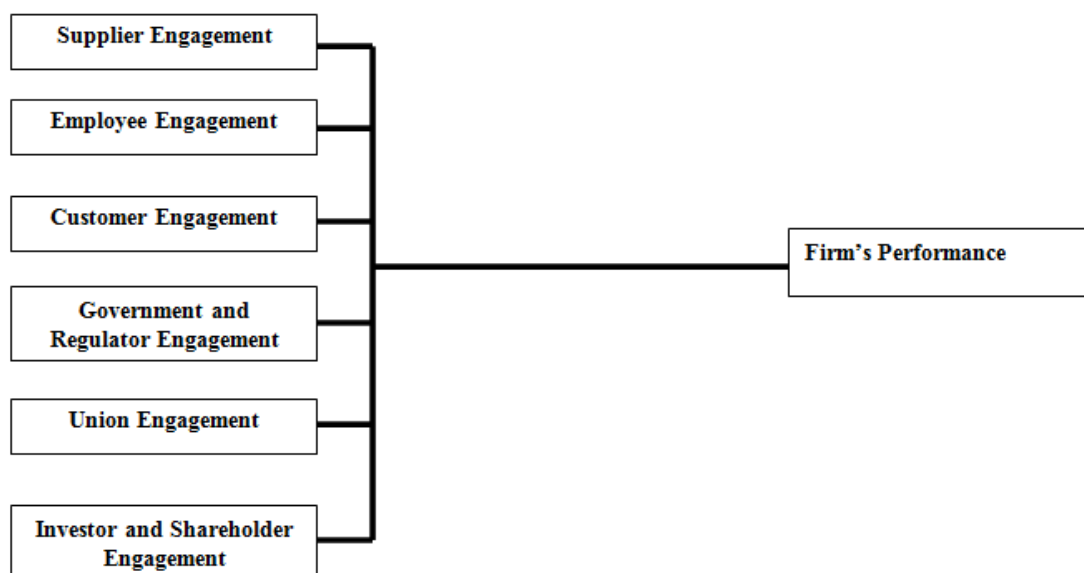


Figure 1: Stakeholder engagement

Employee Engagement

In the wake of MH370's and MH 17's tragedy, MAS must maintain and enhance strong employee relations or in other words relational reserves during crisis to ensure commitment, trust and productivity since employees can be regarded as the backbone of the airline. As they are no production lines which could be automated or outsourced and most jobs are customer jobs in the airline industry, MAS needs to take care of employee well-being issues seriously. Gittell, Cameron, Lim, and Rivas (2006) in their study on relationships, layoffs, and organizational resilience in the USA airlines industry in response to September 11's tragedy found that organizations are better able to survive with a crisis when they maintain strong employee relationships (relational reserves) and financial reserves and when they have business models that fit the needs of the existing competitive environment. Layoffs which is one of the common ways by corporations to respond on crisis, tend to deplete the relational reserves that help corporations survive during periods of crisis (Gittell et al., 2006). Employee's engagement may play a role to reduce negative effects stemming from layoffs as this kind of engagement leads to caring and compassionate relationships between co-workers (Cameron, Bright, & Caza, 2004). Engagement with employees through direct employee communications (email and intranet); an annual staff engagement survey and staff sustainability survey; quarterly employee road shows; internal team meetings such as consultative committees and staff forums; and internal training and development will promote retention of talent, foster customer loyalty and improve organizational performance and stakeholder value (Lockwood, 2007). This article proposes that in the wake of these twin tragedies, among the important issues that should be emphasized by this national carrier to their employees are: 1) employee relations and labour standards; 2) staff benefits; 3) training and development; 4) safety and fatigue management; and 5) adopting best international labour and contractual practices.

Customer Engagement

In the airline industry, customer image and higher profitability have a very close relationship (Vincent, Stancik, Strik, & Polizzi, 2010). The Airport Council International (ACI) forecasted a rise from five billion passengers in 2010 up to over nine billion passengers in 2025, making Asia the world's largest aviation market due to fast growing economies such as China and India (Airport Council International, 2007). In response to that, MAS needs to create value through additional or improved services as well as abide to laws concerning customer protection issues. MAS should take a lesson from Ryanair which neglected their customers and defied European regulations, and resisted to compensate for customers which were severely affected by the volcanic ash cloud in 2010 (BBC, 2013). As a result, Ryanair gained negative publicity from such events and cost them more in the long run. Returning to the case of MAS, although those tragedies give negative publicity to them, but all this was happening beyond their control.

With respect to MH370's tragedy, MAS needs to regain back the trust of their customers from China as the majority of 239 people on board are Chinese citizens. The mass media have widely reported that the anger and frustration of MH370's passengers' next of kin, which majority from China to MAS and government of Malaysia in how they manage this tragedy (Li & Sui-Lee, 2014). On the other hand, in the case of MH 17's, the bulk of the passengers were from the Netherlands (154 people), next highest was 43 from Malaysia and 27 from Australia (Malaysia Airlines, 2014). Thus, through customer engagement, MAS can communicate their serious effort to their customers to improve their flight safety. This effort can be perceived as

an integral part of upholding MAS's legitimacy and reputation after those twin tragedies. The implementation of the crisis communication strategies will regain back MAS's reputation and legitimacy, particularly from China and Dutch customers. This article proposes three types of communication strategies which can be employed by MAS as a part of their customer engagement initiatives.

Communication after the tragedy via annual report

Corporate disclosure can be useful; tool for MAS to improve their reputation and legitimacy in the aftermath of those twin tragedies. Previous research revealed that disclosure can be as important channel to increase reputation and legitimacy (Hahn & Kühnen, 2013). It has been proven that the airline involved in tragedies has used disclosure in order to restore their image of being safe through an annual report from the years of accidents (Hansson & Vikström, 2010). For example, SAS Airline and Air France have communicated the crash of their plane openly and meticulously as the important event of the year and express continuous condolences and expressions of sadness over what has happened (Air France-KLM, 2010; SAS Group, 2008). In the case of MAS, this airline can disclose the same thing that was done by SAS Airline and Air France. For instance MAS need to disclose information with regard to the connection between the accident and their endeavours to improve safety routines and systems. This suggestion implies that communication can be seen as an integral part of the MAS's work to build up an image of safety which subsequently increase their reputation and legitimacy (Hansson & Vikström, 2010).

Communication today through the airline website

Apart from disclosure in annual report, the airline communication strategy in the aftermath of tragedy can be performed through the website. For instance, based on Air France's corporate website until today (2017) still paid attention to the AF 447's tragedy which crashed on 1 June 2009 (Air France, n.d.). Access to press information is easily found and an organized compilation of press releases pertaining to this accident can be downloaded. Furthermore, Air France has communicated all key points and facts surrounding the accident of flight AF 447 such as 1) contact with relatives; 2) compensation to relatives; 3) the safety information of the ill-fated aircraft; and 4) the reports from French Civil Aviation Accident Investigation Bureau; in their websites until today and the pages are continually updated with the latest information. The prolonged disclosure pertaining to tragedy will demonstrated that MAS giving particular attention to safety matters (Hansson & Vikström, 2010).

Communication of the tragedy through social media

Customer services and crisis management can be manoeuvre through social media. This is evidenced by SimpliFlying which found that the social campaign has been selected as the main marketing campaign techniques (Shubhdeep Pal, 2014). The main examples, is Virgin Atlantic. The airline has integrated their communication strategy very well in facing major snow event in December 2010. This major snow event affected closing of Gatwick, extended closing of Heathrow, and closing of JFK and the heavy snow on the US eastern seaboard. Virgin Atlantic posted major updates on their website every few hours as well as handled individual queries through Facebook and Twitter (The Transport Committee, 2010). While, Qantas Airline has experienced the biggest disruption ever which affecting over 120,000

customers caused by the ash cloud from the Chilean Volcano Ashcloud. Evidence shows that the airline used social media such as Twitter and Facebook to provide information pertaining to ash cloud updates or information or responses (Qantas Airline, 2011). As a result, the airline initiatives has reduced the number of calls to customer services and ease the emotional stress of their customers. As marketing is now more social than ever, MAS must engage themselves in social campaign through Facebook or Twitter-based campaign as well as experimenting with new social media platform as a mechanism for them to improve their customer services and crisis management. Moreover, the airline can satisfy and gain back customer expectation particularly regarding to safety and crisis handling and customer relations.

Investor and Shareholder Engagement

Previous study revealed that engagement in institutional CSR activities represents a potential mechanism of creating values for shareholders when firms face certain types of negative events (Godfrey, Merrill, & Hansen, 2009). Investor and shareholder are economic stakeholders who risk their capital to gain dividends (Jeurissen, 2007). In the context of MAS, Khazanah Nasional Berhad constitutes the airline institutional investors which owned largest share nearly 70 percent stakes (Malaysia Sun, 2014). In the wake of those twin tragedies, MAS need to improve their engagement with their institutional investor such as Khazanah Nasional Berhad since participation in some types of CSR initiatives creates a form of goodwill or moral capital for the airline when negative events such as those tragedies occur that preserves shareholder value (Godfrey et al., 2009). In the similar meaning, investor and shareholder engagement will be complementary to employee and customer engagement initiatives which hinge on rebuilding the airline's tarnished image due to twin tragedies. MAS need to increase their engagement with an investor or shareholder through investor briefings; annual general meetings; annual reports; and sustainability reporting. Indeed, the active investor and shareholder engagement, particularly to pro-social issues increase the profitability of the corporation (Dimson, Karakas, & Li, 2012; Lee, 2013). As the largest institutional investor, Khazanah Nasional Berhad, have been proactive by taking various measures to instil better governance practice in their investee companies. For example, they always conduct regular engagement with their top management team of companies and vote on key issues at general meetings.

Government and Regulator Engagement

As the MAS faced new airline regulation such as the open skies policy in 2015, the airline must equipped themselves with strategy for this new regulation (Sidhu, 2012). This new policy will give customers more choices when flying across the tenth ASEAN countries with there is no restriction on international rights, number of designated airlines, capacity, frequencies and types of aircraft. Engagement between government and regulator is very important to MAS since this new skies policy involves existing civil agreement including 1) free market competition; 2) pricing determined by market forces; 3) fair and equal opportunity to compete; 4) cooperative marketing agreement; 5) provision for dispute settlement and consultation; 6) liberal charter agreement; 7) safety and security; and 8) optional seventh freedom all-cargo rights. Engagement with governments and regulators can be implemented through participation in consultation process policy forums and advisory group with governments and regulators in order to get benefit from this open skies policy.

Supplier Engagement

Another important stakeholder of an airline industry is supplier, which are often encouraged to commit responsibility plan of an airline (Cowper-Smith & de Grosbois, 2011). Moreover, it has been found that ideas for major innovations for airline industry such as Singapore Airlines emerge from the supplier (Heracleous & Wirtz, 2014). Suppliers have the power to influence the airline company to involve in sustainability activities. Among the engagement with supplier should be exercised by airline including 1) engagement through procurement, 2) contract execution; 3) ongoing contract management; 4) supplier questionnaire; 5) sustainability newsletters; and 6) focus group. British Airways has engaged their procurement business units, suppliers and other internal stakeholders to generate ideas on how cost can be taken out of the supplier base (Supply Management, 2011). As a result, the procurement business units have been coming up with process change ideas that reduce cost for suppliers and will be key to saving for British Airways until 2016. In the different vein, Singapore Airlines proved that ideas for major innovations are transpired from the supplier. As result from supplier engagement with Airbus, Singapore Airline had the capability and credibility to launch a breakthrough cabin product and in-flight experience for the A380, creating the necessary buzz for Singapore Airline Airbus (Heracleous & Wirtz, 2014). Thus, supplier engagement will be beneficial mechanism to MAS to save costs as well as become a pool of major innovations in their endeavour to rebuild their image in the aftermath of those twin tragedies.

Union Engagement

Union are major stakeholders for the company such as MAS because they are both directly affected by the change in airlines' strategies and management practices. Indeed, it has been evidenced that union play a role as external stakeholders and may thus exerts pressure on corporations as well as influence the broader political debate and even legislation (Sobczak & Havard, 2012). Trade union also play important role in supporting company's mission and vision and act as a conduit to harness members' to deliver on the business objectives. MAS has recognized nine active unions and associations, representing a diverse group of employees ranging from general workers to pilots (Blemin, 2015). Recently, the union of MAS has been reported will hold mass protest with respect to show their frustration on MAS decision to cut 6000 jobs of their employees. As the reduction of 30 percent of the workers enshrined in MAS's restructuring plan in the aftermath of those twin tragedies, MAS must find a way to increase their engagement with the union in order to ensure this latest restructuring plan yield a good result. Among the steps that can be taken by MAS are engaged directly and regularly with the union leaders on topics how to 1) rebuild the airline images in the aftermath of those twin tragedies; 2) health and safety; and 3) negotiating awards and enterprise bargaining agreements. Singapore Airline has proved that the successful engagement between employees 'union and management has yield mutual understanding between the need to be flexible and try to keep the cost structure competitive (Heracleous & Wirtz, 2014).

DISCUSSION AND CONCLUSION

This paper attempts to present a conceptual framework that describes the relationship between stakeholder engagement and performance. This paper proposed that stakeholder engagement including 1) employee engagement; 2) customer engagement; 3) investor and shareholder

engagement; 4) government and regulator engagement; 5) supplier engagement; and 6) union engagement could create positive influence to MAS's performance since stakeholder engagement would assist them to restore their reputation and legitimacy hit by MH370 and MH17 tragedy. Some of the benefits of this framework amongst others, include that it will assist misadventure airline such as MAS to improve their performance through stakeholder engagement since effective stakeholder engagement can provide companies with a competitive advantage (Rodriguez-Melo & Mansouri, 2011). Correspondingly, this framework sheds light on how stakeholder engagement will be integrated along with the airline's strategy particularly in business restructuring process. The limitations of this framework, however, are primarily tied to the general explanations of stakeholder engagement process rather than provide the detail components of stakeholder engagement process such as: 1) issue or stakeholder identification and prioritization; 2) execution (preparation, during and posts); 3) evaluation; and 4) an on-going relationship management (Amaeshi & Crane, 2006). As Porter and Kramer (2006) highlighted the importance of stakeholders in firm business strategy, this framework is very relevant to MAS in the aftermath of MH370 and MH17 tragedies.

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PROMOTING ETHICS AND INTEGRITY IN MANAGEMENT ACADEMIC RESEARCH: RETRACTION INITIATIVE

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ABSTRACT

In management academic research, academic advancement, job security, and securing of research funds in the university are judged mainly by the outputs of publications in high impact journals. With bogus resume filled with published journal articles, the university and other allied institutions are keen to recruit or sustain the appointment of such academics. This often leads to undue pressure on the parts of the intending academics or those already recruited to engage in research misconducts. This structured review therefore focuses on the ethics and integrity issues in management research via the analysis of retracted articles within a period of 2005-2016. This study employs a literature review methodology. In 2017, the database (Crossref and Google scholar) of retracted articles published between 2005 and 2016 in the field of management science were searched by using Boolean strings such as retracted articles in management, notice of retraction in management science, research ethics, and plagiarism in management research. The searched articles were subsequently streamlined by choosing the articles based on their relevance and content in accordance with the inclusion criteria. Based on the analyzed retracted articles, the study shows that there are evidences of unethical issues among researchers in management science. The unethical issues identifies include data falsification, duplication of submitted articles, plagiarism, data irregularities and incomplete citations. Interestingly, the analyzed results indicate that knowledge management has the highest number of retracted articles with plagiarism as the predominant ethical issues. Also, the findings from this study indicated that unethical misconducts are not restricted to a particular geographical location but cut across different countries. However, it is more prevalent in some countries compare to others.

Key Words: Ethics; Integrity; Misconducts; Knowledge management; Structured review analysis

INTRODUCTION

Ethical principles and integrity culture development are not new in management academic research (Robertson, Blevins, & Duffy 2013). According to the editorial comments of Kacmar (2009) in *Academy of Management Journal* and Schminke (2009) in *Academy of Management Review*, unethical research misconduct is a mounting concern among academic management researchers. Academic research integrity and ethics points to the trait of possessing and faithfully sticking to high moral values and professional requirements, as outlined by professional organizations, research institutions and, when relevant, the government and public (Steneck 2006). Drawing from Anderson, Shaw, Steneck, Konkle & Kamata (2013), both are the motives for continued investment in management research and reliance on its scientific findings for respective management decision-making purposes. Nevertheless, there have been confirmed cases of research misconduct in management academic research (Schminke & Ambrose, 2011). According to Federal Policy on misconduct (2000), research misconduct is referred to as the fabrication, falsification, or plagiarism in putting forward, carrying out, or evaluating research, or in stating research results. As further buttressed by Anderson et al. (2013), uncovering research misconduct entails a meaningful deviation from accepted practices of the relevant scientific community in any article. Retraction of the affected article(s) in most cases is one of the consequences of confirmed and duly investigated questionable research practices or misconduct. Thus, in this study, retraction of articles resulting from research misconduct is seen as a way of fostering responsible conduct of academic research in management.

Retraction initiative by journal publishers is poised to promote good research ethics among authors, enhance integrity in the publishing business, aid future authors' from facing consequences of retraction and also to minimize the risks associated with basing decisions on unretract articles that violates research ethics by users. However, ethics and integrity issues culminating in retraction of articles are unresolved issues in management sciences (Honig & Bedi, 2012). Moreover, unlike basic medical sciences, little attention has been paid to research misconduct issues in management academic research and publications employing structured analysis (Pinho, Rego, Pinae & Cunha 2012). Hence, this paper focuses on management academic research ethics and integrity issues using a structured analysis based on retracted articles. The study is structured to begin with a predetermined question as follows:

RQ1. How is academic ethic and integrity issues in management research developing?

RQ2. What is the future direction for academic ethic and integrity issues in management research?

Followed by overview of research misconducts, next is the research methods, then results and discussion, the implications from the study and lastly, the conclusion.

OVERVIEW OF RESEARCH MISCONDUCTS (ETHIC AND INTEGRITY ISSUES)

According to Steneck (2006), research is mainly an expert activity as it is carried out and in part guided by individuals who have been specially taught to conduct research. One of the primary functions of the university is to inspire the quest for research. This obligation can be achieved through the cooperation of individual member of the academic community to conduct

oneself in an ethical manner devoid of misconducts. Hence, every member of the university community (staffs and students) is obliged to promote an environment which does not tolerate misconduct but encourage intellectual honesty and integrity. According to Fang, Steen, and Casade, (2012) research misconduct accounted for majority of the retracted journal articles. Based on the definitions proposed by the Federal Policy on misconduct (Bird & Dustira, 2000), the three main components of research misconducts include fabrication, falsification and plagiarism and they are further explained as follows: Fabrication refers to an act of making up data or results, and recording or reporting them; Falsification refers to a process of manipulating research materials, equipment, or procedures, or changing or omitting data or results such that the research is not accurately represented in the research record; Plagiarism means the appropriation of another person's ideal, processes, results, or words without giving appropriate credit. However, the definitions do not include honest error or honest differences in interpretations or judgments of data (Anderson et al., 2013).

Stemming from the work of Robertson et al. (2013), research misconduct in the university is awfully disturbing and has become a worrisome issue among stakeholders and educational policy makers. This is due to the adverse effects of its occurrence on standard and integrity of research outputs as well as the degrading reverence in which academics is viewed by the public, government and the sponsors of academic research. Nevertheless, some of the flimsy reasons adduced for such unethical conduct by researchers like Harley et al. (2014) are work pressures and the eagerness to meet key performance index (KPI) in the field of academia. Besides, the increased pressure on academic researchers to publish in highly-ranked journal is another excuse as further indicated in Harley et al. (2014). Consequently, a stiffen competition and pressure to publish according to Corbett et al., (2014). It is worthy to emphasize that all these plausible excuses aforementioned are not justifiable for research misconduct. Even though research success is attached to the number of publications in highly-ranked journal, researchers should not engage in unethical conducts and rationalize their engagement in such act.

METHODS

Journal Searching

In this paper, literature searching adhered strictly to the selection criteria already set out to answer the pre-determined questions and to minimize selection bias. Electronic database such as Crossref and Google scholars were searched using the following Boolean string as inclusive criteria in accordance with Fanelli (2009): Retraction journal in management science; notice of retraction of journals in management science; misconducts in management; research integrity in management science; fabrication and falsification of results in management science. During the first search, a total of 8,599 journal articles were displayed. The search was further streamlined to article published between 2005 and 2016 with the main captions reflecting retractions in different aspect of management science such as accounting, business ethics, supply chain management, knowledge management, project management, human resources management and quality management with the search results yield a total of 272 articles. The 272 articles were further streamlined using the key focus of the manuscripts as indicated in the title and the abstract. A total of 50 articles which cover accounting, business ethics, supply chain management, knowledge management, project management, human resources

management and quality management were obtained. These articles were subsequently categorized as shown in the next session.

Grouping of journal article

A total number of 50 journal articles with focus on accounting, business ethics, supply chain management, knowledge management, project management, human resources management and quality management were found to contain retraction or retraction notice between the year 2005 and 2016. These journals were subsequently grouped to reflect the focus of the retracted articles, the theme and the location of the university in which the studies were carried out as shown in Table 1.

Category 1-Focus of the retracted articles

Each of the 50 retracted journal articles were analyzed in order to identify their focuses. In all, seven focuses, namely, accounting, business ethics, supply chain management, knowledge management, project management, human resources management and quality management were identified from the analysis of the retracted journal articles.

Category 2-Theme of the retracted articles

The articles were also analyzed based on the retraction theme (i.e. the main reason for the retraction of the published articles). The main themes identified from the retracted articles are data falsification, duplication of submitted articles, plagiarism, data irregularities and incomplete citations as well as technical errors in the articles.

Category 3-The location in which the studies were carried out

The retracted articles were further analyzed in order to identify the location of the university in which the studies were carried out. Based on the analysis, the following country countries were identified: Germany, China, Iran, Libya, Malaysia, Taiwan, Thailand and the United State of America (USA).

Table 1: Categorization of the retracted journal articles

Focus	Number of articles	%
Accounting	4	8
Business ethics	2	4
Supply chain management	3	6
Knowledge management	36	72
Project management	2	4
Human Resources management	1	2
Quality management	2	4
<i>Total</i>	50	
Theme	Number of articles	%
Data falsification	3	6
Duplication of submitted articles	4	8
Plagiarism	40	80
Data irregularities and incomplete citation	2	4
Technical errors in the article	1	2
<i>Total</i>	50	
Location	Number of articles	%
Germany	2	4
Iran	2	4
Libya	1	2
Malaysia	2	4
Taiwan	4	8
Thailand	1	2
USA	4	8
China	34	68
<i>Total</i>	50	

RESULTS AND DISCUSSION

Figure 1 depicts the focus of the analyzed retracted articles. The focus of the articles understudied include accounting, business ethics, supply chain management, knowledge management, project management, human resources management and quality management. Out of the total number of articles analyzed, four articles representing 8 % focused on accounting (Wier et al., 2005; Deng & Qing, 2007; Tan et al., 2010; Lai et al., 2010), two articles representing 4 % focused on business ethics (Tseng et al., 2010; Schminke & Ambrose, 2011), three articles representing 6% focused on supply chain management (Salam, 2009; Wang et al., 2010; Karami et al., 2015), 36 of the articles representing 72 % focused on knowledge management while five articles representing 10% focused on project management, human resources management and quality management respectively. Interestingly, it is obvious that most of the authors of the retracted journals analyzed within the period understudied focused on knowledge management. Knowledge management as an emerging field in

management science is fast gaining wide acceptance and popularity. Therefore, every researcher within this emerging field of research strives to make remarkable contributions through publications of their research outputs. This in itself is enough pressure on the researchers to “cut corners” and hence engage in unethical misconducts as reported by Finalli (2009).

A further analysis of the retracted articles that focused on knowledge management was done based on their theme and location in which the study was carried out (Figure 2). Interestingly, unethical research misconducts such as data falsification, duplication of submitted articles, plagiarism, data irregularities and incomplete citations were identified from the retracted articles that focused on knowledge management. Among all these unethical research misconduct, it can be seen that plagiarism was predominant (Figure 2a). This is consistent with the work of Bebeian, Taylor & Miller (2010) who reported that plagiarism is one of the most common forms of ethical violation within the management discipline. Moreover, the location of the university where the retracted articles that focused on knowledge management was investigated was also analyzed as shown in Figure 2 (b). Eight countries namely Germany, China, Iran, Libya, Malaysia, Taiwan, Thailand and USA were identified as the locations of the studies investigated in the retracted articles on knowledge management. It can be seen that the China has the highest numbers of retracted articles that focused on knowledge management compare to other countries. Although, Russikoff, K., Fucaloro, L., & Salkauskiene (2003) has reiterated that plagiarism is a cross cultural phenomenon, cases of research misconducts are more predominant in some countries than other. It can be deduced from Figure 2 (b), that plagiarism cases identified from the retracted articles in knowledge management is more in China compare to other countries within the period understudied (2005-2016). This can be attributed to the fact that universities in China inculcated incentive pay system as means of rewarding publications in high-impact journals (Chen & Macfarlane, 2016). In view of this, academics tends to compromise quality of papers for quantity in order to get more incentives.

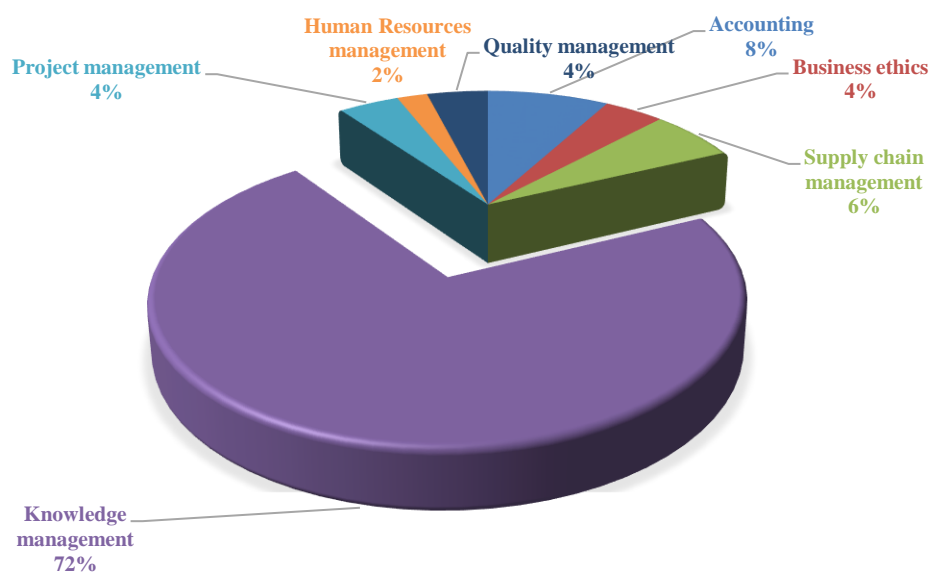


Figure 1: Focuses of the analyzed retracted articles

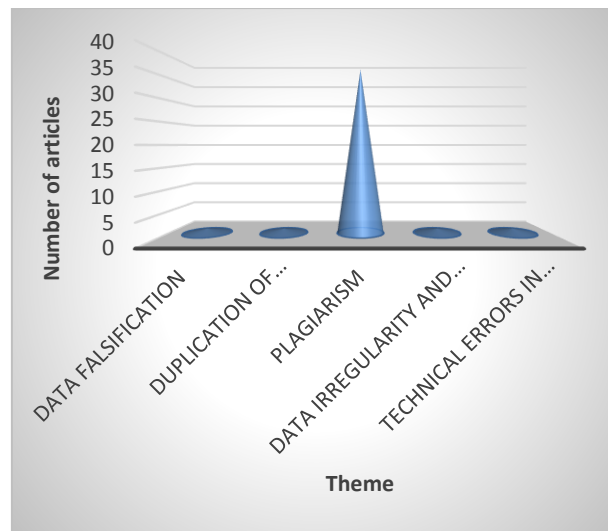


Figure 2 (a): Theme of the retracted articles

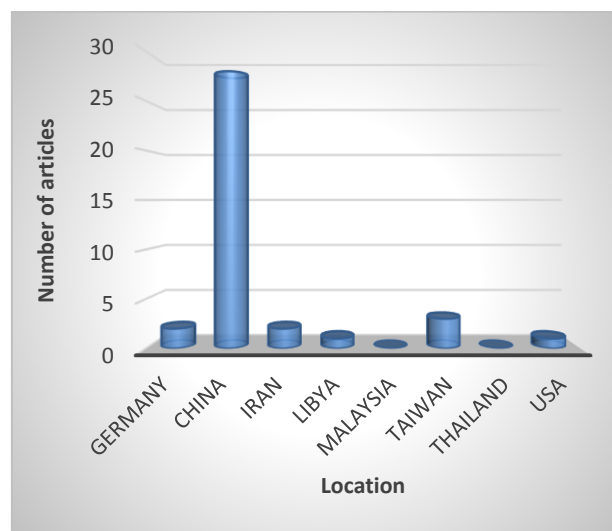


Figure (b): Location in which the studies were conducted for the retracted articles that focused on knowledge management

The representations of the different themes of the retracted articles understudied are depicted in Figure 3. It can be seen that the themes of the retracted articles cut across different unethical conducts such as data falsification, duplication of submitted articles, plagiarism, data irregularities and incomplete citation and technical errors in the article. The analysis of the different articles show that, data falsification and duplication of submitted articles with three and four articles respectively represent 14 % of the total article analyzed (Wier, 2005; Salam, 2009; Tan et al., 2010; Vahedi & Irani, 2011; Karami et al., 2015). Interestingly, plagiarism which features in 40 articles representing 80% of the total articles is the most reported unethical conduct (Song & Wang, 2009; Yao & Zhu, 2009; Lai et al., 2010; Tseng et al., 2010; Tohidi & Jabbari et al., 2012; Nicolae, 2014). The remaining 6% of the total retracted articles represents articles with technical errors as well as those with data irregularities and incomplete citations. A further analysis of the retracted articles which focused on knowledge management shows that plagiarism is the most reported case of research misconduct as depicted in Figure

4. The cases of research misconduct involving plagiarism most especially among researchers in the field of knowledge management in on the increase and can be liken to a monster that is capable of destroying academic integrity according to Batane (2010). The high rate of cases recorded for plagiarism within the period understudied agrees with the work of Pupovac & Fanelli (2015) who reported that academic misconducts involving plagiarism is higher compare to others. Further analysis was made based on location of studies of retracted articles that have plagiarism as their themes as well as the types of journals that published the retracted articles (Figure 3). From Figure 4 (a), the study locations for retracted articles with plagiarism cases cut across different countries such as Germany, Libya, Malaysia, Taiwan, China, Romania, Iran under the period understudied. This observation is consistent with the report of Farthing (2014) who stated that research misconduct most especially plagiarism is a global challenge for 21th century. However, the trend between the period understudied shows that most of the locations of the retracted papers with plagiarism cases were in China. This trend is consistent with observation of Chena and Macfarlane (2016) who highlighted that the number of Journal articles from China involving misconduct cases increased astronomically between 1999 to 2013.

As earlier stated, this could be as result of the incensitive system put in place to reward publications in high impact journals. This does not implies that there were not measures in place by the Chinese Minidtry of Education to discipline those that are cut in cases of research misconduct. In 2009, the Ministry of Education in China released six separate policies on academic misconduct to discipline those that default. Moreover, the distribution of the retracted papers with plagiarism cases according to the publishers are shown in Figure 4 (c) and 6. All the papers listed are index in Scopus, which is one of the reputable indexing organization. However, most of the retratcted articles were published in different journals of IEEE. IEEE is the world largest professional organization known for the publication of high quality papers.

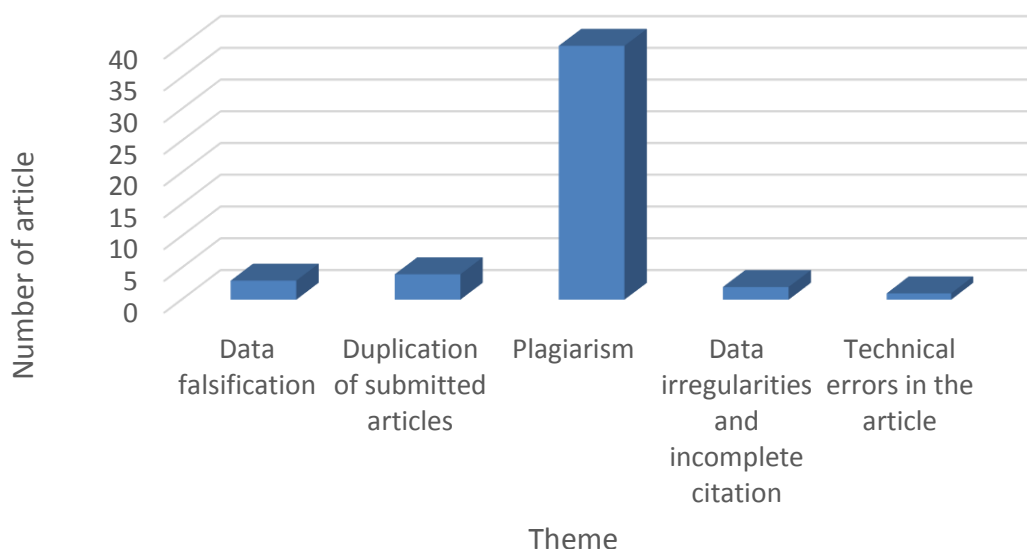


Figure 3: Themes of the retracted articles from the different field of Management science

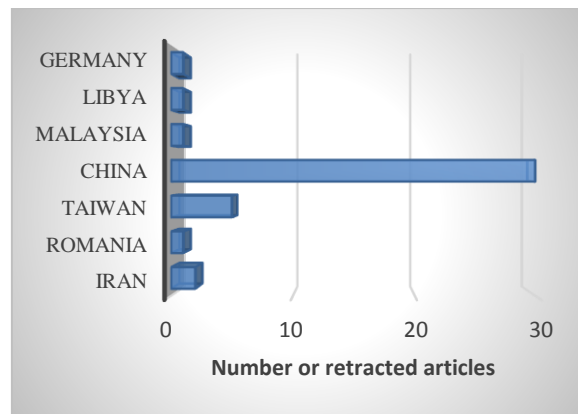


Figure 4: (a) Location of retracted article in KM

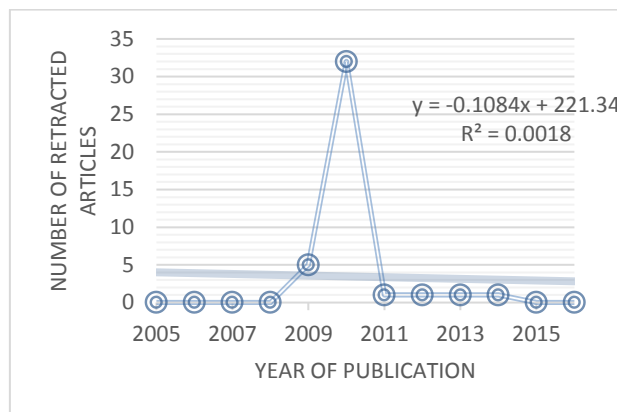


Figure 4: (b) Trend of retracted articles in KM

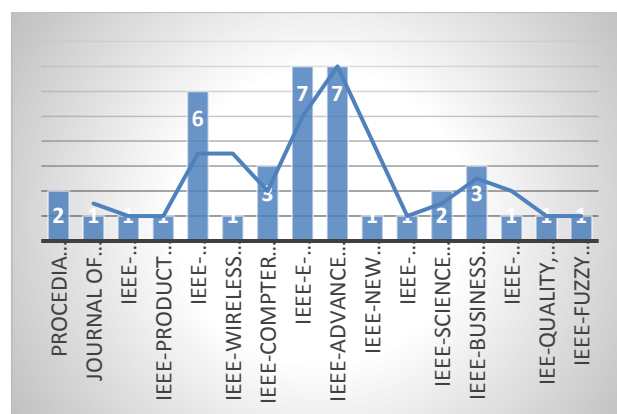


Figure 4: (c) The Journal distributions of retracted articles in KM

Figure 5 depicts the location in which the studies were conducted. Interestingly, it can be seen that research misconducts is a global issue which cut across different universities across the world. Based on the analysis of the retracted articles, the study from two retracted articles were conducted in Germany representing 4% of the total article, the study from three retracted articles representing 6% of the total article analyzed were conducted in Malaysia and Thailand, studies from seven articles representing 14% of the total article analyzed were conducted in

Iran, Libya and Taiwan. Surprisingly, the studies from thirty four retracted articles representing 68% of the total article analyzed were conducted in China while the studies from four of the retracted articles representing 8% were conducted in USA. Moreover, the analysis of the retracted articles that focused on knowledge management also showed similar trend as depicted in Figure 5.

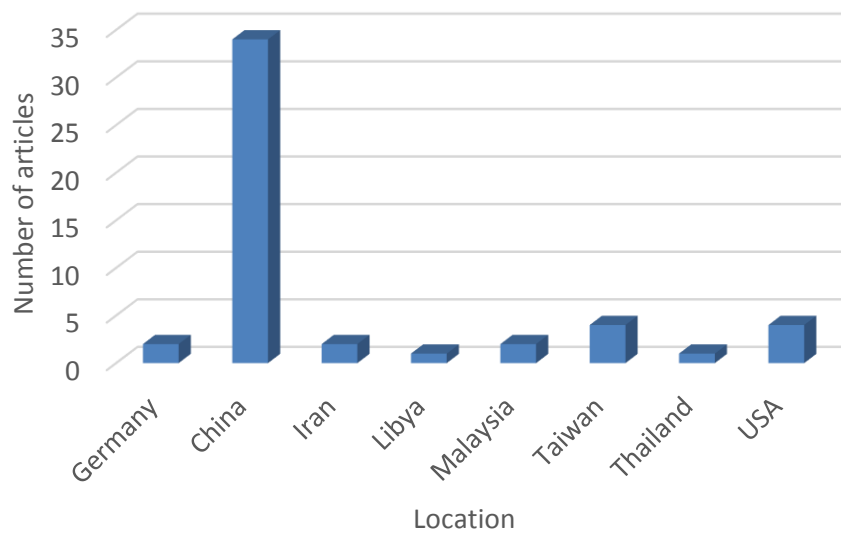


Figure 5: Location in which the studies were conducted for all the articles understudied

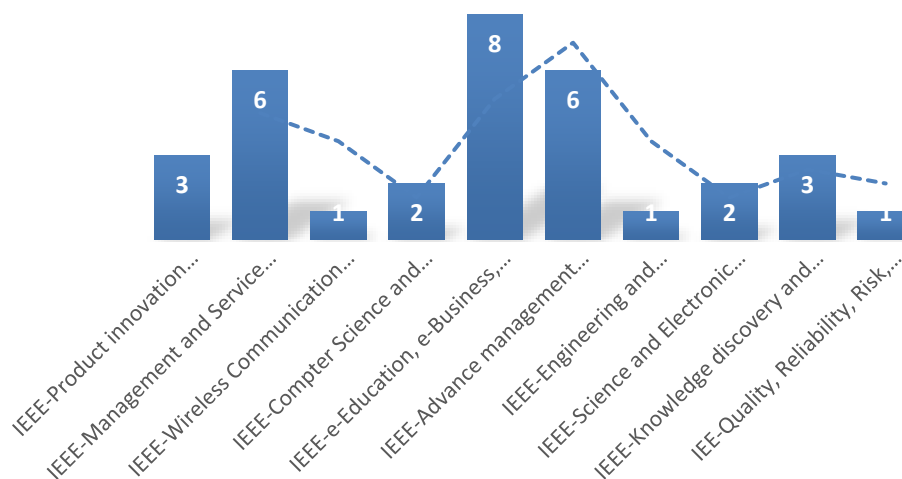


Figure 6: Location in which the studies were conducted for the articles that focused on knowledge management

Implications from the study

Academic researchers are often faced with different pressures which might arise from both career advancement and the capability to attract funding which to a large extent is hinged on the author's successes in publication. In the present study, we have established from the analysis of retracted articles in the field of management sciences (with a particular emphasis on knowledge management) within a period of 2005-2016 that academic misconducts most especially plagiarism is a prevalent unethical issue which should not be overlooked. Also, based on our findings, the identified unethical practices were not restricted to any geographical locations even though study show that they are more concentrated in some countries compare to others. Also, it appears that unethical issues are on the rise in KM academic research stream as it has the highest amount of retracted articles in the period investigated. Different authors have agreed that article retraction is a sure source of evidence for research misconduct and should be upheld. Article retraction as an evidence of academic misconducts is an awful experience which is very hurting for both publishers and authors. Its consequences are enormous in that it often resulted in embarrassment to both editors and authors. In order to ensure and enforce ethical research and publishing, the following steps have been recommended as stipulated in the retraction statement of the Editor-in-Chief of Management and Organizational Review in the follow up letter to the retracted articles titled “Ethics and integrity of the publishing process: myths, facts, and a roadmap” in Schminke & Ambrose (2011).

Firstly, the extent for plagiarism should be determined. In order to implement this, reports have shown that most prominent publishing organizations usually check the overlapping degree of submitted manuscript using diverse similarity detector softwares. For instance, Elsevier and Springer use EES (Elsevier Editorial System) and Editorial Manager for the processing of submitted manuscript as well as checking for potential plagiarism of the articles using software such as iThenticate. The benchmark offer by most of the well-known publishing organizations is between 20% and 30%. However, this benchmark may actually not help in detecting cases of plagiarism. This is because there is possibility that a skillful but cunning writer can easily rewrite an already published article without any traces of similarity. Moreover, most of the plagiarism software cannot detect similarity in content. Therefore, a more proactive measure is needed to curb this unethical misconduct among researchers.

Lastly, advancement in academic pursuit should not be absolutely tied to number of scholarly works rather it should be quality of the published papers. Measures should be put in place by education policy makers and stakeholders to scrutinize the quality of published papers by the researchers in the university before using same for the assessment of the author's KPI. Also, in line with Guraya et al. (2016), education stakeholders should advice academics to only consider the publication of papers that makes significant contributions to scientific literature rather than rewarding the publication of enormous articles. This will put measures in checking the undue pressure and competition to writing articles in management field to get promoted and publication-linked incentives.

CONCLUSION

Promoting research ethics and integrity through retraction of articles is no doubt a good initiative. The publication of articles in highly reputable journals is often desired for the possibility of exchanging scientific information in which critical decisions are based, as well as advancement of knowledge in the field. Thus, researchers are required to do their studies in accordance to the norms, codes, policies, regulations and guidelines of their profession as well as their employers (universities or research institutions) and of government (the public). Consequently, the undue pressure from academic promotion, securing research funds, and the competitions for institutional ranking are not valid reasons for unethical practices in research publication and questionable research outputs resulting in retraction of the affected article. Excellence, integrity and originality in management academic research writing and publications can be ascertained through the concerted efforts of all stakeholders (the authors, reviewers, editors, publishers and the university management). In addition, academic ethics and integrity issues pertaining to individual subfields making up management sciences especially that of knowledge management should be separately examined in future research for better insight. This will further promote specific good ethic and integrity in such sub-fields academic writing as well as enhance the quality of research outputs in the field of management.

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PROMOTING RESEARCH GOVERNANCE THROUGH INTEGRITY AND ETHICAL PRACTICES: A QUALITATIVE STUDY

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ABSTRACT

This paper provide a qualitative analysis on promoting research governance in the higher learning institutions. The purpose of this paper is to analyse importance of research integrity and ethical practices in higher learning institutions qualitatively for the implementation of good governance in research practices. Qualitative research is utilized to discover the deeper associations that underlie individual researcher’s approach for research integrity avoid any misconduct. Comments on qualitative questions asked to university lecturers were coded systematically. The research quantify the qualitative interview data through data query, and cross tabulation. To synthesize the findings, thematic analysis was used which were interpreted within the study context of promoting governance, research integrity and ethical practices. This paper also provide recommendations for additional research and further discussions on these issues. The thematic findings confirmed that researchers need to maintain high standard of research integrity together with appropriate, ethical, legal and obligations ensuring highest standards of rigor to support research integrity.

Keywords: Research integrity, Governance, research ethics, universities

INTRODUCTION

In recent years, it is really surprised that research fraud and scientific misconduct has increased Steen (Koepsell, 2017). Research is performed to find the truth and solve complicated issues. A great deal of research is performed to explore a topic and provide evidence to advance knowledge. Before embarking to any research project, certain basic presumptions are made and gradual accumulation of knowledge is built upon. Research integrity refers to “high quality and robust practice across the research process”. However in recent decades, promoting research integrity and ethical practice for knowledge creation have received great attention (Beisiegel, 2010; Tsui & Galaskiewicz, 2011; Wang, Xiao, Zhang, & Li-ping Tang, 2013). Research ethics and honesty are the most important principles for the integrity and conduct of science (Forschungsgemeinschaft, 2006).

In the scientific research, the cases of misconduct are serious problem and thus such misconduct and falsification have enforced a scientific and public discussion in recent years (Sponholz, 2000; Titus, Wells, & Rhoades, 2008). In the survey conducted by Titus et al. (2008) evaluating 265 description to determine research misconduct it was found that 24% of them did not meet the threshold federal definitions. Out of 201 observations of potential misconduct identified by (Titus et al., 2008), 60% included fabrication and falsification and 36% plagiarism only.

In addition, DuBois et al. (2013) analyzed 40 cases of research misconduct in the form of fabrication, falsification or plagiarism. The Qualitative data suggested financial incentives, oversight failures and seniority correlates significantly to research misconduct. It was also revealed that misconduct also involves thinking errors, poor coping with research pressures and inadequate oversights. Specifically, serious misconduct and plagiarism of all kinds has been observed by the academic research and editorial communities (Jacobs, 2010; Michel, 2010; Wang et al., 2013).

The main research question is what are the key factors that impact research governance in the universities by the research scholars? To answer this, the current research applies qualitative approach to reveal the underlying intention of the researchers to follow research integrity and ethics. Semi structured interview reflect to the individual’s perspective with overlap at the boundaries. Semi structured is flexible, accessible, and capable of disclosing important hidden facets (Qu & Dumay, 2011).

The main focus on this current research is of promoting research governance among research scholars through research integrity and ethics. Research governance is defined as the process of making and implementing decisions. University is one of the actors promoting research governance. Other actors that have the responsibility of good governance in research may include administrations, lecturers, head of departments (HOD), students and especially, individual researchers. The first contribution of this paper is the usage of qualitative method for identifying key factors that influence research integrity and ethics in the universities. Second, this paper provides a model that contributes for promoting good governance in the universities. The current paper begins with a literature review on research integrity, ethics and good governance in the universities. Next section highlights key methodology approach followed in the study. The third section deals with the key findings from the semi structured

interviews together with the thematic analysis and derive some prepositions. Finally, this paper concludes together with the managerial implications.

LITERATURE REVIEW

Research Integrity in the Universities

Research integrity refers to the method of proposing, performing and evaluation of research with particular attention to rules, regulations and guidelines. Research integrity includes honesty, accuracy, efficiency and objectivity. Research integrity is an ethical behavior that builds trust of the research stakeholders. Facilitating the knowledge utilization approach, the value of the norms of knowledge production is not only for the sake of integrity but also for the shelter of institutional goals. However, Gano, Crowley and Guston (2007) mentioned that the importance of protecting the research integrity is a scientific question that should be investigated. Integrity supports best research practices and promote research governance framework (Menzel, 2005). Defining research integrity in terms of both moral principles *and* professional standards is problematic. Moral principles and professional standards play different roles in research (Steneck, 2006).

Research Ethics

Research that includes human participants raises unique and complex ethical, legal, social and political issues (Diener & Crandall, 1978; Dingwall, Iphofen, Lewis, Oates, & Emmerich, 2017). Research ethics is specifically interested in the analysis of ethical issues that are raised when people are involved as participants in research. This reinforce the need to understand research ethics. Researchers and policy makers use different terms to refer to the way researchers should and should not behave. Research institutions aspire to set high standards for integrity in research (Steneck, 2006).

Research participants may be unaware of the nature, scope, and granularity of data collected and what information they are actually consenting to provide. In many cases, there are actually no standards, best practices, or demonstrated safety mechanisms to guide either researchers or IRB risk assessment or management strategies. Researchers may thus feel uncomfortable with explaining benefits (Torous & Nebeker, 2017).

Research ethics governance is a major system aimed at promoting research integrity and responsible conduct of research, and research ethics committees are a prominent feature of this system (Iphofen, 2017).

Good governance

Good governance refers to make decisions and implement them (Aguilera & Cuervo-Cazurra, 2009). Good governance includes 8 key characteristics assuring misconduct to be minimized. It is participatory, consensus oriented, accountable, transparent, responsive, effective, efficient, equitable and inclusive. Good governance by the universities requires that the integrity and ethical approach in the research is maintained. Good governance is very crucial for the university reputation (De Boer, Enders, & Schimank, 2007). However, the research on

governance of research institutions has not been available until now (Jansen, 2007). Research integrity is an inherent part of the institutional research policy as it is one of the six spearheads in the research policy plan. There is a growing understanding that research integrity is a keystone of good governance. Maesschalck and Bertók (2009) stated in their publication that integrity management should take into account four main functions: determining and defining integrity, guiding towards integrity, monitoring integrity and enforcing integrity.

A key premise of the proposed model is the ability of the system to promote research governance in the case of research misconduct. A comprehensive qualitative research process was utilized to examine the factors promoting research governance and given these factors assess the viability of the proposed integrity model for the universities.

METHODOLOGY

This study was conducted in one of the public university in Malaysia. Head of Faculty also known as Head of Department (HOD) from each faculty was considered as the participants for the data collection. Qualitative approach is highly suggested in the constructivist paradigm. Previous studies confirmed that academic misconduct and ethical concerns are due to lack of research mindset and traditional learning orientation (Wang et al., 2013). The usage of semi structure interview questions provided an opportunity to the participants to explain comment and share their opinions on the research integrity and ethics promoting good governance in research. Semi structured interview questionnaire helps to address specific dimensions of research question offering new meanings to the study topic (Galletta, 2013). This qualitative research method has been applied in marketing or behavioral research, but its application in the governance research is novel. Scale validation in the form of qualitative steps was developed where key 9 questions were randomized in order to avoid bias (Kerlinger and Lee, 2008).

This paper examined the qualitative comments from the faculty members regarding promoting good governance mechanisms in the universities for tackling research misconduct or fabrication issues and gain insights into the research propositions. The open ended questions included:

- Who is to blame for research misconduct?
- Should universities do more to protect research integrity?
- Villains can be heroes, and heroes' villain? What initiatives should the university perform to let this not happen?
- Why would someone fabricate research data?
- Why a scientific researcher not follow the protocols required by the university before performing the research investigation?
- What are the environmental factors that may predict wrongdoing in research?
- What can change researcher's understanding of ethical practices?
- Should the universities have zero tolerance towards research misconduct?
- Does research misconduct will taint university's global reputation?

Responses were collected using Google Docs Form. In total, 5 participants contributed themselves providing their qualitative comments for at least one of these questions out of 20 emails delivered using Google Docs Form. The research protocols involved matrices that highlights consistency and differences in the contrasting patterns (Eisenhardt and Graebner, 2007).

RESULTS

The qualitative insights indicated that research fairness and zero tolerance of misconduct is very important for the good governance in research publications and data fabrications. Firstly, the qualitative findings were depicted into a matrix. Secondly, the questions related to research integrity, ethics and good governance were analysed by coding the themes generated from the qualitative comments. Themes that was emerged from the semi structured interviews regarding their views on promoting governance, research integrity and ethical practices is provided as follows:

- Fairness and equity, zero tolerance and dealing with allegations (Research Integrity)
- Ethical climate, benchmarking process, fraud, and mistrust as environment factor
- Violations of professional ethics, replication of misconduct as ethical behavior.

The proposed model shown in Figure 1 is comprehensive in that it shows all the distinct types of factors that is able to improve good governance and research integrity.

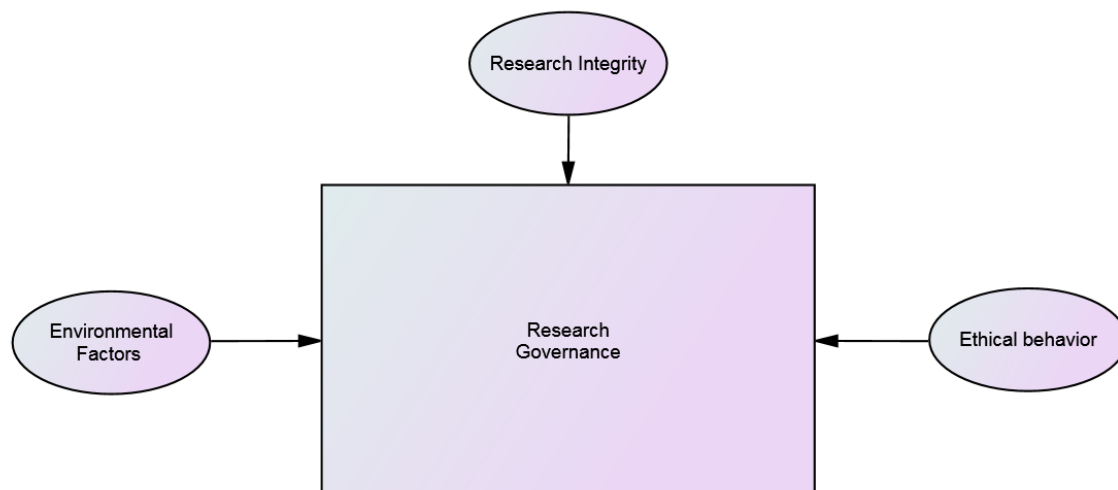


Figure. 1: Conceptual framework

This examination of themes also suggests that the scope of motivations and attitudes as well as actual behaviors of the researchers are obvious to investigate. The new evidence suggests that some earlier assumptions are not reliable, leading to the conclusion that there is a need to change the way we think about and regulate research behavior. The conceptual model suggests that the environmental factors is comprised of four key areas:

1. Ethical climate;
2. Benchmarking process;
3. Fraud;
4. Mistrust

The conceptual model suggests that the ethical behavioral factors is comprised of two key areas:

1. Violation of professional ethics;
2. Replication of misconduct

The conceptual model suggests that the research integrity factors is comprised of three key areas:

1. Fairness;
2. Zero tolerance;
3. Dealing with allegations

From the semi-structured interviews it was found that, even in major cases of misconduct that have included publications, the full impact on the course of research is difficult to assess. In order to promote research governance in education, there must be advanced course for the researchers that classify principal investigator and collaborative researchers individually. This initiative will promote the standards of research integrity in the universities.

CONCLUSION

From the examination of themes developed it can be concluded that many misconduct research incidents may jeopardize the name and fame of the institutions. If we want to build strong integrity in research there is a need to pay more attention of minimizing research misconduct. The qualitative insights indicated that research fairness and zero tolerance of misconduct is very important for the good governance in research publications and data fabrications issue. The universities in order to be a world-class comprehensive institutions, research integrity is vital important. All members of the university should uphold the highest standards of professional conduct and abide by the university's rules, guidelines and also by relevant policies. This paper through qualitative interviews provided the best practices to promote research governance. However, the challenges and factors that bridge the gap between researchers and the universities have not been highlighted. Thus future studies should fill the gap between policy and practices that protect university reputation and avoid subjectivity.

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APPENDIX. INTERVIEW GUIDE

The transcript outlined below provided a general context for the question asked during the interviews with the academicians. The topic emphasis within each of the issue categories varied according to the role of interviewed academicians would play in the research governance activities.

- **Who is to blame for research misconduct?**

It is not viable to blame universities only for the research misconduct, but the researcher itself should be held accountable morally (*Participant 1*).

According to me it is the responsibility of the universities to take measures to prevent misconduct and improve research integrity. However, the *participant 2* also claimed that the misconduct by the researchers cannot be excused and thus they should accept the moral responsibility. Participant 3, 4 and 5 have similar opinion of blaming the individual researcher who is involved in the research misconduct.

- **Should universities do more to protect research integrity?**

In reply to this question on protecting research integrity, participant 2 mentioned that there is a need of developing multi track career options that are not focused only on research based. Furthermore, participant 3 opined that there is a need of strict regulation policies by the university in order to protect research integrity. Finally, participant 5 stated that, “Yes the issue of research integrity is very serious and urgent and the university should take more actions together with strict regulations”.

- **Villains can be heroes, and heroes’ villain? What initiatives should the university perform to let this not happen?**

In order to save the integrity of research and research scholars, university should avoid forced research culture. Research should be based on interest and not on the university requirements. Whereas, participant 2 reiterated that, perhaps university

should initiate with formulating some regulations to praise the ethical behavior and punish the unethical behavior in the research.

- **Why would someone fabricate research data?**

There are many reasons that attribute to fabricate the research data (Informant 1). Some of them are to achieve the result compliance, inability to conduct research time pressure, work pressure and so on. Similarly, participant 2 mentioned that, some of the researchers fabricate the data to increase their reputation and earn money. Researcher fabricate data may be due to research pressure, difficulties of collecting data, laziness or braveness as no punishment would incur (participant 4).

- **Why a scientific researcher not follow the protocols required by the university before performing the research investigation?**

Lack of time to deliver the progress of the research is one of the main reason (participant 1). Sometimes scientific researchers get frustrated with the lack of new insights in the findings (participant 2).

Usually researchers do not follow the protocols due to lack of self-discipline (participant 3).

- **What are the environmental factors that may predict wrongdoing in research?**

Participant 1 stated that, “I think the ethical climate of the organization is also one of the main reason for research misconduct”.

I believe that when the researcher experience an unintentional failure in their research led them to adapt fabrication activities (participant 3).

Whereas, contradicting to participant 1 and 3, participant 4 stated that it is difficult to predict wrongdoings in research. Finally, participant 5 mentioned that, perhaps the research culture within the organization is the reason for wrongdoings by the researcher.

- **What can change researcher’s understanding of ethical practices?**

There is a need to provide ethical education and exposure to ethical practices in order to change their mindset (participant 2).

There is a need to provide training on research integrity especially to the new researchers as they may not be really aware of the unethical practices (participant 5).

- **Should the universities have zero tolerance towards research misconduct?**

There is a need of assigning certain tolerance range for the researcher. If the research misconduct is out of the range than strict legal actions must be taken into account. Yes, I totally agree that research misconduct is a serious issue that is exploring like a virus in the academia. However, without a certain limitation to it would make this virus spread like a diseases. Better to have strict regulations by the universities to tackle such situations. We have examples of National university of Singapore who have adopted unified set of standards for research publications and ethics.

- **Does research misconduct will taint university’s global reputation?**

Yes surely research misconduct by any individual researcher will affect the reputation of the university both globally and locally. There is a need of taking important steps towards achieving commitment by the researchers to maintain their integrity. Participant 2 mentioned that research integrity must be taken seriously by the university and must have zero tolerance towards research misconduct.

- **Please suggest your realistic solutions on research integrity that can be implemented in practice for research scholars.**

There is a need of zero tolerance to misconduct. At the same time, multi-track career options must be provided to the research scholars. Participant 2 suggested that there is a need of increase in awareness among the researchers. Whereas; participant 3 suggested to promote ethical research culture and appreciate ethical research practice. Participant 4 further suggested to provide relevant information sharing and establish unethical reporting channels. Finally, participant 5 suggested to promote and facilitate the transition of governance in the research community to confirm the ethical standards in the universities.

EXAMINING CORPORATE SOCIAL RESPONSIBILITY AND BRAND EQUITY IN MEN'S GROOMING PRODUCTS

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ABSTRACT

Traditionally, grooming arenas is dominated by women, but now men are important consumers in these markets. Men's grooming product industry has been growing significantly. At the same time the increasing competition caused the need for the development of marketing strategy that able to increase the brand equity. By building brand equity, a firm develops a long-term, mutually beneficial relationship with the stakeholders. The significance of this conceptual paper is attempted to understand how the dimensions of corporate social responsibility (CSR) (human rights, labor, social, economic, environmental and product responsibility) influence the brand equity in men's grooming products. The conceptual paper proposed a conceptual framework for future study where the population is Malaysian male between age 20 to 39 years old with total population of 5,846,500 people. This proposed sampling method is non probability sampling with purposive and snowball sampling method which is convenient and economical and with the sample size of 250. The instrument will be adopted and adapted for this future research study which involves quantitative method data collection. Self-administrated questionnaire is proposed to be used as the research instrument.

Keywords: Brand equity, Corporate social responsibility, Men's grooming products

INTRODUCTION

Human strives to have better standard of living and better lifestyles specially now with the advancement in technology, science, economy and education. People start to put more emphasis on their own hygiene, look and beauty (Souiden & Diagne, 2009). Improvement in their appearance, health, beauty and good looking are what desired by people. Both women and men had the same desire to have skin that is bright and smooth together with their ideal body shape for a great life and better living (Nair & Pillai, 2007). The women's beauty industry already established for sometimes while the men's market has just become flourishing lately where

traditionally, grooming industry is conquered by women, but now men are also becoming an important consumers in these markets (Zayer & Neier, 2011). The overall of the cosmetic industry is rising globally and even locally in Malaysia. Besides, some of the studies on the international marketplace have revealed a growing interest in personal grooming among male population and the expanding and growing of the grooming industry (Market Research Report, 2013).

Moreover, substantial amount of information about our desires, ambitions and place in society is being communicated through the way we groom ourselves (Wax, 1957). For men, they want to project their choices of grooming as utilitarian rather than self-indulgent (Cheong & Kaur, 2015). Although men are increasing conscious of the significance of appearance, they also are noticed about the gender issue and overly feminine in their behaviour. To remain their masculine identities, male users state that the use of grooming products is as a practical mean to certain needs but not for beautification. (McNeill & Douglas, 2011).

From the angle of the firms that producing the men's grooming products, capturing the global market for men's grooming products is challenging; especially for brand owners that cultivating female consumers for decades. For example, L'Oréal has invested significantly into its Men Expert line, but the L'Oréal brand is still deeply related with women. For some men, that remains a barrier to purchasing it. Smaller rivals specializing in men's grooming products have latched on to this weakness (Statista, 2016). Besides, with the increasing demand for men's grooming products, more and more brands are blooming to capture the market which provides men with more choice and lowered the switching cost for men. These factors are affecting the brand equity of the men's grooming products brands.

Furthermore, in grooming industry, ethics is another significant element as it comes under closer scrutiny than other industries. Grooming products have conventionally been seen as 'vanity' products where they mainly bought by people to improve their appearance that caused them to be considered non-essentials. Hence, the industry and its business practices are therefore much more scrutinised compare to other related industries e.g. foods, pharmaceuticals, home cleaning products due to the fact that grooming products included cleansing products (shampoos, soaps, etc.) and products with specific functions (e.g. anti-acne creams, anti-inflammatory lotions,) (Sahota, 2014). Hereafter, grooming products do not serve just the vanity needs of consumers but also the basic needs of hygiene and cleanliness.

The challenges of grooming industry included the rise in ethical consumerism, pressure given by the media and NGOs, environmental issues and limited resources (raw materials selection and usage, environmental impacts and safety issues of finished products), pressure from the supply chain and laws and regulation. With the blooming of ethical consumerism, consumers become more aware and informed which lead them to be become more demanding from the products they buy. Besides, with the rising of education levels, the ease of access to Internet and the increasing use of mobile devices which making the consumers more knowledgeable and informed than at any other time in history. They are starting to question and ask for more information of the grooming products like the origin of the product, production methods and ecological impact, and along with the safety issues of the product. This upsurge in ethical consumerism is having a foremost effect

on the grooming industry. Grooming and ingredient companies are progressively scrutinised by retailers and NGOs looking to safeguard consumer interests (Sahota, 2014).

With the rise of ethical consumerism and more brands is competition for the market, hence, these conceptual paper will aim to gauge the link between corporate social responsibility of men's grooming products with it brand equity.

PROBLEM STATEMENT

Men's grooming products demand is increasing although conventionally, cosmetic industry is related with women. Hence it becomes a substantial opportunity for business with the fast pace growing men's grooming products niche (Souiden & Diagne, 2009). In year 2014, a few big corporate companies launched men's grooming product to increase their company and brand shares. For instance, in February 2014, Clinique for Men introduced skin care products which included cleansers and moisturizers and pre-shave products. Besides, Adidas and Za released men skin care products for men in July and November 2014 (PRNewswire, 2015) and in year 2015, even Calsberg, the beer manufacturer, also came up with their Beer Beauty series which the series was sold out (Eurobest, 2015). Referring to Table 1, there are a lot more of brands to choose from for each men's grooming products in Malaysia. Consequently, men have more brand choices, lower risk in brand switching and higher expectation (Bennett & Rundle-Thiele, 2005) which the company will face the challenge of the decline of brand equity (Bennett & Rundle-Thiele, 2005). Hence the company have to create and maintain their brands with brand equity as the outcome of the efficient branding activity investments (Seetharaman et al., 2001).

On the other hand, brand equity has been one of the most popular marketing theories in both academia and practical world (Kumar, Dash and Purwar, 2013). However, limited studies have been conducted since 1990 to investigate the phenomena of brand equity in consumer market (Kim and Hyun, 2011; Kumar et al., 2013). Thus, it is a need to contribute to the literature review of brand equity in the consumer market. Buil, De Chertony and Martinez (2013) addressed the need of future research to investigate additional marketing antecedents of consumer-based brand equity to better understand their effect on the brand equity creation process.

Moreover, firms have comprehended their accountability to the society and community with accountable business practices, hence the firms take up their philanthropical, ethical and economic responsibility to be a good corporate firm (Louche, Idowu & Filho, 2010). Besides, same situation happened for the grooming industry as the players in the grooming industry are aggressively in quest of ways to rally the industry's image by implementing ethical, environmental and responsible business practices. Common CSR activities in the industry include packaging reduction and environmental friendly packaging material usage, effective energy, water and resources usage, against animal test ethical ingredients usage, ethical supply chain and fair trade (Organic Monitor, 2010). Organizations make a choice of CSR activities that they have confidence which are relatively more significant, therefore CSR activities differ among firms. Therefore, the situation shows the need to recognise whether CSR practices are favoured by consumers and in what way

these CSR practices affect consumer behaviour especially brand equity. In order to strategize CSR innovatively in the grooming industry, it is required to understand more about the awareness of CSR among the consumers in the grooming industry and how CSR will influence the brand equity of the brand. Although CSR is known to be one of the most effective ways of marketing, there is only limited research studying the effects of CSR on marketing outcomes (Hur, Kim, & Woo, 2014) which included the brand equity.

SIGNIFICANT OF THE STUDY

This study intends to address the impact of CSR on consumer-based brand equity. This study seeks to contribute to the area of CSR and brand equity from both a theoretical and practical contribution perspective.

From theoretical perspective, this study aims to contribute to the current literature by studying the relationship between CSR and consumer-based brand equity. This study broadens the application of signalling theory to the context of CSR and brand equity. Past studies have used signalling theory mainly to judge about a product's quality (e.g., Boulding & Kirmani, 1993; Milgrom & Roberts, 1986). This study will extend the application of signalling theory (Spence, 1973) to the CSR as cues that consumers may use to form their evaluation of brand equity of the men's grooming products. Based on the theory, this study predicts that the impact of cues on consumer behaviour is influenced by CSR.

Besides, this study provides several implications to the businesses and practitioners. This study will explore the growing market which is the male consumers who buy men's grooming products. The study will be important as grooming products is previously deemed as products for the female customers and out of reach for the masculine ideal. It will give a significant context within which may have variance in brand relationships. Researchers conversed that that male are culturally vulnerable of their identities (Tuncay and Otnes, 2008) because shopping activities commonly is still considered by culture as a mainly womanly activity (Miller, 1998). Secondly, with the examination of what is the role of CSR in brand equity of men's grooming product, the local and international grooming product firms can gain a valuable insight on the how to market the men's grooming product to the men.

Besides that, one of the recent trends in marketing is the creation of brands with a "good" image through involvement to causes. Thus, CSR has becoming an important marketing strategy. More and more companies around the world have employed CSR strategies. With the global growth of CSR, it is therefore increasingly important to understand the elements of CSR that are able to improve brand equity as well as factors that may influence the impact of CSR on consumer based brand equity.

Hence, the conceptual paper intended to suggest future study which able to help managers to design effective CSR strategy that can enhance consumer brand equity in men's grooming products. The results of the future study are expected to provide managers with information on important

elements of CSR and how these elements may interact with one another to further influence consumer response to CSR. This information is considered to be of importance to managers and policy makers who are involved in developing CSR strategy and marketing strategy.

RESEARCH OBJECTIVES

The research objective of this study is to explore the influence of CSR dimensions on the marketing outcome –brand equity. The study will specifically discuss the direct and indirect relationships CSR have with brand equity. The context chosen for this study is the men's grooming product in Malaysia. The main objective of this study is to examine CSR and its relationship with brand equity. To fulfil the main objective, the specific objectives are:

- a. To examine the relationship between human rights CSR and brand equity in men's grooming products.
- b. To examine the relationship between labor CSR and brand equity in men's grooming products.
- c. To examine the relationship between environmental CSR and brand equity in men's grooming products.
- d. To examine the relationship between social CSR and brand equity in men's grooming products.
- e. To examine the relationship between product responsibility CSR and brand equity in men's grooming products.
- f. To examine the relationship between economic CSR and brand equity in men's grooming products.

RESEARCH QUESTIONS

The research questions of this study are used to examine:

- a. What is the relationship between human rights CSR and brand equity in men's grooming products?
- b. What is the relationship between labor CSR and brand equity in men's grooming products?
- c. What is the relationship between environmental CSR and brand equity in men's grooming products?
- d. What is the relationship between social CSR and brand equity in men's grooming products?
- e. What is the relationship between product responsibility CSR and brand equity in men's grooming products?
- f. What is the relationship between economic CSR and brand equity in men's grooming products?

LITERATURE REVIEW

With the increase of competition in the men's grooming products market and the arising of ethical consumerism, corporate social responsibility (CSR) becoming a key element to increase the brand equity and capture the market share. Concerns with environmental and social issues have been highlighted in the world nowadays. Companies' daily operation and management demonstrate indication of a greater obligation to social-economical issues in their firm management. This is a phenomenon in which demands and responsibilities should involve the whole society (Angelo, 2012). Environmental issues and climate change that caused by human activities lead to the living life on the planet is influenced by the climate change which become a great concern to the society. The external and internal stakeholders of the firms pressured the firms to manufacture environmentally products which less impact towards environment (Khidir ElTayeb, Zailani, & Jayaraman, 2010). Different environmental regulatory organizations, societies' environmental expectations and peer council's pressure on business organizations (Ismail, Ramli, & Darus, 2014) and grooming products is no exception of these pressure and expectations.

Men's Grooming Product Industry

Drastic change happened for men grooming themselves for the last 10 years. Previously, men's grooming products are just consist of hair and body shampoo, shaving cream and deodorant. Period. However, there is a change as men grooming products which included products that specifically designed for men like eye serums, concealers, facial cleansers, moisturizers, and mud mask (Statistica, 2016). Men are prepared to spend to look good and more money is spent on male-specific men's grooming products rather than just on shaving products. According to Data Monitor (Datamonitor, 2010), since year 2004 to year 2009, the worldwide market of men's grooming products grew at a compound yearly growth rate of 4.2%. As men were becoming more aware about their appearance and image, the global sales growth of men's grooming products increase by 18% between 2006 and 2011 (Mermelstein and Fielding, 2007). Furthermore, previous forecast from Datamonitor group is that by 2014, the men's grooming product market at global market will reach a value of \$22.1 billion, leading to a growth of 22% starting from 2009. US\$33.2 billion of sales from men's grooming products are expected by 2015 (Global Industry Analysts 2010) with the substantial increased caused by facial skincare (Euromonitor International 2010). According to Statista (2016) as shown in Figure 1 above, men's grooming products in 2016 estimated to have a market size of USD 21.4 billion and will continue to grow to USD 26.6 billion in year 2020. This shows that the market size of men's grooming product is expanding annually and at the average rate of 5.24% between year 2012 till 2020. Although the number and estimation is different among different reports, but the conclusion from the reports is that the global market size of men's grooming products is growing significantly year by year. Narrow down to Malaysia, nowadays Malaysian men also incline to see personal grooming as a need rather than a want. Male consumers also willing to pay higher financially for better quality products with specific function, for example anti-aging, multi-function, whitening (Swidi, Wie, Hassan, Hosam, & Kassim, 2010). As men's grooming products becoming more affordable and widely available in Malaysia, it is expected that more Malaysians will adapt the use of men's grooming products (Euromonitor, 2016) as Malaysia men are becoming more aware of the importance of men's grooming needs in the society. Many

leading retailers such as hypermarkets like Tesco and Giant, parapharmacies like Guardian and Watson have high visible of the men’s grooming products which included deodorant sprays, facial skin care products and men’s fragrances (Euromonitor, 2016).

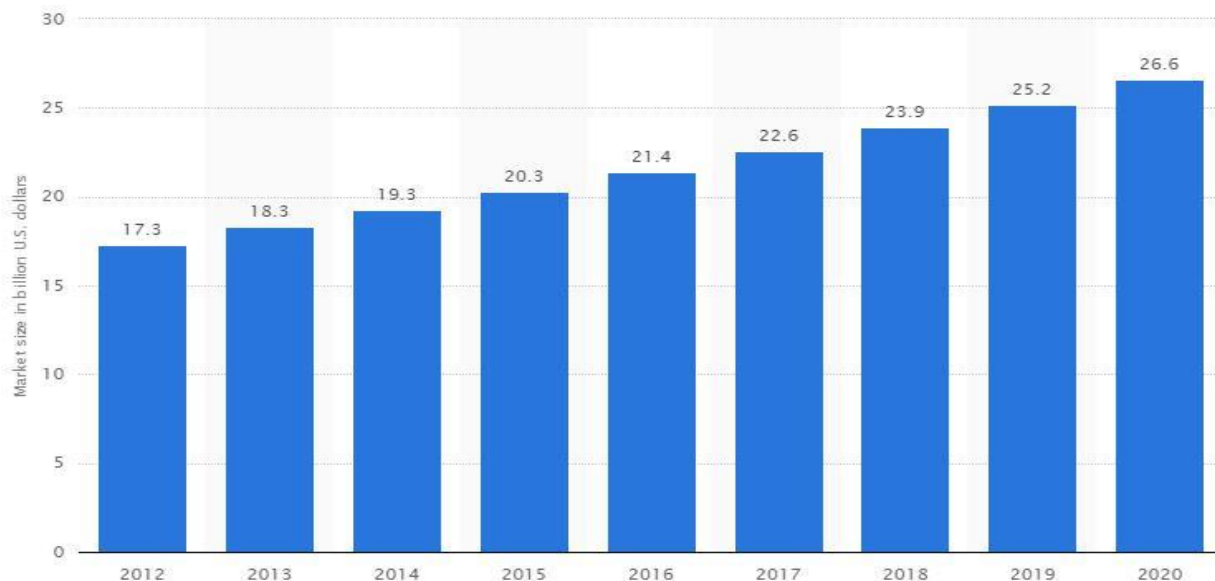


Figure 1: Market size of men’s grooming products from year 2012 to 2020

Looking at the market share of different brands in Malaysia, in year 2011, Brylcreem brand led men’s grooming products market and in the second place is Procter & Gamble brand which had a market share of 19%, while other major competitors in men’s grooming in Malaysian included Mandom, Unza, Marico and Tohtonku (Culture of grooming, 2012, December 6). Fast forward to year 2014, the men’s grooming product market is led by Procter & Gamble (M) with a 25% share of retail value sales (MYR122 million) of the total Malaysian men’s grooming products market share of MYR 488 million. Procter & Gamble (M) enjoys strong brand recognition in Malaysia for Gillette and Gillette Series as the consumers perceived Gillette offer quality products and with aggressive marketing campaigns that increase awareness and sales (Euromonitor, 2015). According to Euromonitor 2016, in 2015, Mandom led men’s grooming products market in Malaysia with 20% value sales share. The company involved primary in marketing and sales of Gatsby and some other Mandom brands. Gatsby captured strong brand reputation among men’s grooming as it offers strong diversification in products where it focused in hair care as well as some other categories such as men’s skin care, men’s shaving, men’s deodorants and men’s fragrances. Mandom is highly consistent in organising marketing activities like Gatsby Dance Competition Malaysia to retain consumer’s interest. Based on the reports, we can notice the brands that can led the men’s grooming products in Malaysia change over the years from Brylcreem (2011), Procter and Gamble (2014) to Mandom (2015). Hence brand equity becoming an important marketing outcome to capture the market share.

Besides, to show the strong competition in the men's grooming products market, a table is tabulated showing the products range and brands that the male consumers in Malaysia to choose from in one of the parapharmacy in Malaysia, Watson. Based on the Table 1, it shows that Malaysian men have a wide range of products to choose from and have a lot of brands (international and local) for them to choose at each category of men's grooming products. In other words, the switching cost for male consumers is low and brand equity of men's grooming products is facing challenges.

Table 1: Brands and product examples based on men's grooming product categories

No	Category	Brand Name	Example of products		
1	Skin cleanser products namely body cleanser product, such as shower cream, facial cleanser product, such as facial foam	Nivea Men	Whitening Acne Oil Control Foam Men Extra Whitening Mud Foam Men Pro White Ice Mud Serum Foam		
		Garnier Men	Men Total Anti Acne Oil Control Mud Foam Men Total Anti Acne Foam Turbo Light Oil Control Cool Foam Garnier Men Acno Fight Foam Acno Fight Wasabi Foam		
		L'oreal Men Expert	White Activ Charcoal Foam Detoxifying Cleansing Foam Volcano Foam		
		Men's Biore	Double Scrub Oil Clear Double Scrub Bright Clean Facial Foam		
		Safi Men	Acne Buster Facial Wash Dynamic White Facial Wash Oil Control Facial Wash		
		Badlab	Energizing Facial Cleanser		
		2	Skin care products namely body/skin care product, such as body/skin lotion, facial skin care product, such as moisturizing cream	Vaseline Men	Facial Antispot Whitening Moisturizer Facial Moisturizer Oil Control
				Nivea for Men	Extra Whitening Moisturizer Men Whitening Acne Oil Control Moisturizer Men Multi-Protect Daily Defense Moisturizer
				L'oreal Men Expert	Hydra Energetic Turbo Booster BB Men Moisture Gel 50ml Men Hydra Energetic Anti Dullness Gel
				Garnier Men	Acno Fight Acne Fighting Whitening Serum Garnier Men Turbo Light Bright & Oil Control
3	Perfume and other fragrance agents such as deodorant	Watsons	Hydrating Facial Emulsion		
		Rexona	Men Ice Cool Roll On Deodorant Men V8 Spray Deodorant		
		Nivea for Men	Deodorant Roll On Silver Protect Deodorant Stress Protect Spray		
		Axe	Deodorant Spray Provoke Deodorant Spray Anarchy For Him		
		Dashing	Deo Spray Cool Deo Spray Active		
		Adidas	Deodorant Spray Ice Dive		
4	Hair care product such as shampoo and conditioner	Clear Men	Deep Cleanse Anti-Dandruff Shampoo Cool Sport Menthol Anti-Dandruff Shampoo Anti-Hair Fall Anti-Dandruff Shampoo		

Table 1: Brands and product examples based on men’s grooming product categories (continued)

No	Category	Brand Name	Example of products
5	Men's Shaving products (Razors, Blade, Post-Shave Balm and etc).	Gillette	Mach 3 Razor 1 Cart Mach 3 Turbo Sensitive Razor 1pc Gillette Mach 3 Turbo Sensitive Cartridges 4 Foamy Lemon Lime
		Schick	Exacta 2 Disposable sensitive 2 + 1's Xtreme III Subzero 3 kit 2's Exacta 2 System Kit 1's Free 2 Blades
6	Fragrance namely perfume, cologne	SG Men	Men Eau De Toilette Fantasia 100ml Ice Eau De Toilette 30ml Aura Eau De Toilette 100ml
		Dashing	Adventure EDT Edge 100ml Eau De Toilette Extreme Power 100ml
		Adidas	Dynamic Men Eau De Toilette 100ml Eau De Toilette Get Ready 100ml

Source: (extracted from www.watson.com.my)

Brand Equity

Brand equity is recognized as a significant strategic asset for the firm in modern marketing theory and practices. Keller and Lehmann (2006) argued that customer, product and financial markets is the three distinct but interlink market dimensions that being influenced by a brand. Besides, marketing literature discussed extensively about brand equity paradigm and many researchers have presented a variety of definitions for the brand equity concept (Aaker, 1991; Christodoulides and de Chernatony, 2010), as well as different views on the elements that affecting brand equity. Jones (2005) proposed that brand equity was consequential from the co-creative interaction between the brand and the consumers. Undeniably, academic argument is inconclusive about the conceptual basics, sources, essence and measures of brand equity (Davicik, Vinhas da Silva, & Hair, 2015). Nevertheless, a broadly used definition originating from the marketing literature defined brand equity as the value added by the brand name to a product that does not possess a brand name (Farquhar, 1989; Keller, 1993; Sriram, Balachander, & Kalwani, 2007). A more comprehensive definition of brand equity defines it as the value of the brand that derives from high levels of brand loyalty, perceived quality, name awareness and strong brand associations, as well as assets such as trademarks, patents and distribution channels that are associated with the brand (Aaker, 1991; Kotler and Keller, 2012).

Corporate Social Responsibility (CSR)

The elementary impression of CSR is that firms should performance and be held responsible not just its lawful responsibilities to employees, supplier and shareholders but also anticipated to recognise and take complete accountability for the impacts of its business practices to the social and ecology (Robbins, 2005). In another word, a firm that is profitable and take into account of all the impact (positive and negative) towards the social, economy and environment is considered as a social responsible firm. Moreover, the CSR literature main findings presented that consumers

are concerned of the companies' social behaviour which will affect their purchasing decisions. Most observers expect social responsible firm (i.e. the "good companies") will appeal to their customers, while firms contempt their social responsibility (i.e. the "bad companies") will be penalised by the consumers with the action like boycotts (Castaldo, Perrini, Misani, & Tencati, 2009). World Business Council for Sustainable Development (2000), stated that CSR is the continuing commitment by firm to perform ethically and promote economic development while make the quality of life of the labour force and their families, the local community and society better (Kahreh, Babania, Tive, & Mirmehdi, 2014).

Besides, CSR perceived importance has established in current years consistent with the increasing recognition that it gives companies competitive advantage development potential (Porter and Kramer, 2006, 2011). CSR has widely been linked with larger companies, generally multinational companies (MNC). Management efficiency, motivation of employee, reduction in energy consumption or customer relationship improvement or philanthropy of senior management or voluntary desire to involve in the nearby local community fundamentally linked to CSR (Santos, 2011). In long run, firms can gain a variety of positive advantage from engaging in CSR. A company that involves in CSR, product demand can be attracted from market segment particularly interested in social issues as consumers tend to gravitate towards products or services of companies that considered to be good corporate citizens. When making purchasing decision, consumers especially in developing countries will take corporate citizenship into consideration. Hence, a firm can use CSR to enhance its brand equity.

There is also an increasing subscription to CSR-related certification such as the Global Reporting Initiative guidelines, the Social Accountability 8,000 standard and the Accountability 1,000 standard, which companies awarded with such certificates as good corporate citizens (Abugre & Nyuur, 2015). However, there is still minimal of awareness and understanding of CSR in developing countries compared to the stronghold of CSR in developed countries. Many observers see CSR in developing countries as work in progress as companies focus mainly on philanthropy and community development (Abugre & Nyuur, 2015) as some firms are lacking tool to implement and enhance their CSR.

As the definition of CSR is broad and varied, efforts have been made to conceptualize the categorical dimensions of CSR by capturing a variety of areas related to business. Many global firms have chosen the Global Reporting Initiative (GRI) framework because of its establishment of an organized, categorized guideline which eliminating the ambiguity of scope in the ranges of CSR (Nikolaeva & Bicho, 2011). As of 2012, only 1,390 global companies (Woo & Jin, 2016) and the number increased significantly to 9,055 organizations in year 2016 which including well-known grooming product brands such as Procter & Gamble, Johnson & Johnson and L'Oréal France reported their CSR practices using GRI's guidelines (Sustainability Disclosure Database, 2016). Referring to Table 2, as a more practical classification, the Global Reporting Initiative (GRI) offers a framework consisting of six CSR categories: human rights, labor, social, environmental, product responsibility, and economic (Bouten, Everaert, Liedekerke, Moor, & Christiaens, 2011) which also used as the CSR dimensions in this conceptual paper and for the proposed future study. The Global Reporting Initiative is an international independent standards

organization that helps businesses, governments and other organizations understand and communicate their impacts on issues such as climate change, human rights and corruption. and is endorsed by the United Nations World Summit on Sustainable Development (About Sustainability Reporting, n.d.).

A European study (CSR, Valuing the Consumer 2001) show that out of the surveyed consumers, 70% of them state that social responsibility was vital for them while making a purchase choice of a product/service. Besides, 37% mentioned that for the past 3 years, ethical labeled product was being bought by them. UK and American also had similar trends (Clark,2008; ‘Green is the New Dream’,2010). Hence more brands patriated themselves social responsible and environmental friendly (Clegg, 2007) and more brands claim to be ethical, extending from brands that produce ethical or environmentally friendly products in their range (Toyota Prius), brands that use ethical practices in their supply chain (American Apparel), and brands that finance in social causes (Pret a Manger offer food to the homeless) (Doonar 2005).

Table 2: The GRI dimensions of CSR

No	Dimensions	Definition
1	Human Rights	Concerns the business’ protection/violation of basic human rights
2	Labor	Concerns the business’ compliance with labor standards in workplace and implementation of employees’ well-being
3	Social	Concerns the business’ impacts on the social systems within which it operates, such as local community and country
4	Environmental	Concerns the business’ impacts on natural systems related to inputs (e.g., energy and water) and outputs (e.g., emissions and waste)
5	Product Responsibility	Concerns the ethics regarding the aspects of the business’ products and services that directly affect customers
6	Economic	Concerns the business’ impacts on the economic conditions of its stakeholders and on economic systems at local, national, and global levels

Moreover, Fan (2005) suggested that previous studies that explain brand equity by just looking at financial performance are scarce because they overlook the subjects of legitimacy and ethics. As in current connected world which information is easily accessible by the consumers, it will make brands more transparent and real ethical behavior will be essential to prosper in any market. Hence, these are robust motives for managers to encourage ethical behavior at the corporate level (Singh, Iglesias, & Batista-Foguet, 2012).

In developing countries, CSR has only lately recognized. This is demonstrated by a deficiency of CSR literature among the developing countries. Changes in business trends and with globalisation, thus, a gradually significant portion of debates related to social issues and the need of upright CSR in developing countries which included Malaysia. Upright CSR is value creation that involves all stakeholders (de Quevedo-Puente et al., 2007; Gugler and Shi, 2009). However, good CSR could be misinterpreted by stakeholders if what establish CSR is unclear, and it has turn out to be a challenge to incorporate the core issues of CSR.

In Malaysia, CSR has progressively increased with better awareness of social responsibility and sustainable development of the stakeholders is reassuring Malaysian firms to align with international management practices. Lu and Castka (2009) found that Malaysian firms are involved only in certain features of CSR such as philanthropy and public relation (PR). However, they state that the concept of CSR is not entirely new to Malaysia.

CSR and Brand Equity in Men's Grooming Products

Literally, relationship between gender and business ethics is contradicting among the result of the studies as empirical researches many show that females are more ethical than males and yet there have plenty studies which display no ethical difference between both genders (Atakan et al 2008; (Kahre et al., 2014). Hence the focus of the proposed future study only on men that purchased and used the men's grooming products and gauge the impact of CSR on the brand equity.

Lai et al. (2010) showed that purchasers' perception of firms' socially responsible activities affected industrial brand performance and brand equity. Empirical evidence is also given by Hur et al. (2014) suggesting that CSR activities are an important element to influence the brand equity (Loi, Lam, Ngo, & Cheong, 2015). In summary, with the discussion above establishes that there is sufficient evidence that CSR can influence customer brand metrics and financial brand performance metrics. Hence, a study to investigate how CSR influences brand equity in men's grooming products is proposed as future study.

CONCEPTUAL FRAMEWORK

This study will draw upon theoretical framework namely the signaling theory. At this section, the theoretical framework will also be presented.

Signaling Theory

Signalling theory provide a basis for understanding the usage of cues among consumers to evaluate an object. Signalling theory (Spence, 1973) proposes that cues provide consumers with information that is often necessary to make evaluations about factors that are unobservable. Spence (1973) describes the use of signaling theory in a job market. For example, under an uncertain condition, an employer has to make a hiring decision. The employer judges an applicant for a job vacancy based on the observable characteristics and attributes that the applicant has. Individual observable characteristics and attributes such as education, previous work, race, sex, criminal and service records act as signals and indices for the employer to form their decision (Spence, 1973). In this case, an applicant's education and previous experience in the market are attributes that can be assessed by the employer to determine the applicant's productive capabilities probability.

Signaling theory is also applicable in a market interaction between buyers and sellers. In the market situation, sellers know about their products' quality, whereas the buyers, on the other hand, are not fully informed about the quality of the sellers' products. Hence, buyers want information that

enables them to distinguish between sellers of high-quality products and those of low-quality products. To solve this information problem, marketers use pre-purchase signals to convey their products' quality (Boulding & Kirmani, 1993). The role of the signal is to help to resolve the consumer's problem in making their judgment about the quality of the sellers' products.

In the marketplace, the quality of a product is normally unobservable. Hence, consumers normally look for cues to make an inference about a product's quality. Signaling theory explains how consumers use the cues available to form impressions of the quality of a product. Cues such as advertising, price and warranty serve as signals about a product's quality and consumers may use these cues as the basis upon which to evaluate a product's quality. Past studies have investigated the implications of signals such as price (Milgrom & Roberts, 1986), advertising (Milgrom & Roberts, 1986; Kihlstrom & Riordan, 1984) and warranties (Boulding & Kirmani, 1993; Grossman, 1981) on product quality.

Signals may also be in the form of action or strategies that are selected by the company, such as offering a warranty (Boulding & Kirmani, 1993). High warranties act as signal to consumers that the products are of good quality. This is because only sellers with good-quality products would be able to offer a high warranty to consumers (Boulding & Kirmani, 1993). Similarly, price can act as signal of product quality. It has been noted that some consumers use price as a signal to evaluate a product (e.g., Aaker, 1991; Milgrom & Roberts, 1986). For example, a product with a high price is normally perceived as having good quality. Besides price and warranty, advertising expenditure can also serve as a signal to consumers because only big companies are capable of advertising their products and services heavily. Small companies, in contrast, are not capable of doing so because they do not have the funds to undertake heavy advertising of their products and services.

The above applications of signaling theory in various marketing studies is applicable to this study because it supports the applicability of signaling theory in showing that consumers use several cues such as price, advertising expenditure and warranty to infer information when evaluating a product. The works of these researchers provide the conceptual foundation of this study for examining the effect of CSR to evaluate the brand and affect the brand equity of the brands.

In general, a CSR initiative always contain terms such as "to help" or "to support" a particular cause, and this cause claim that appears in a CSR advertisement would act as a cue that would influence consumers' decision to purchase a particular product or brand. This is because consumers may be interested in donating to and helping a particular cause through their purchase of CSR products. In the context of CSR, Grau and Folse (2007, p. 21) suggest donations may possibly appear somewhat "abstract" or "unobservable" to the consumers and CSR which supports of local cause may signal a better offer to the consumer. Similarly, based on their proposition, it can be inferred that CSR supports of a local cause might signal a greater offer to consumers compared to one that is supporting an international cause. In addition, a CSR campaign that supports a high-congruence cause may also signal a more logical link and therefore signals a better offer to consumers compared to CSR that is linked to a low-congruence cause.

Conceptual Overview

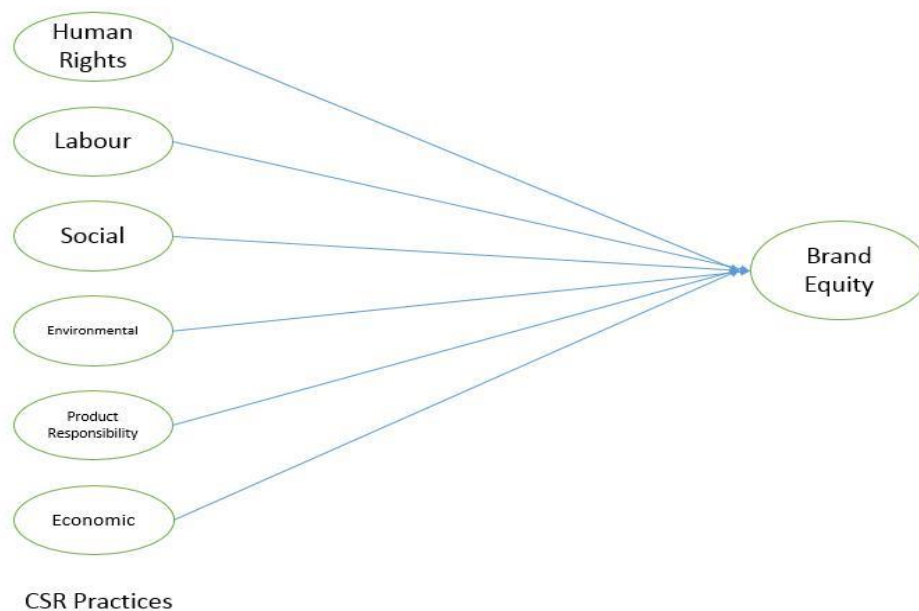


Figure 2: Conceptual framework

Proposition

The proposition of this study is developed to examine the relationship between the key dimensions of CSR i.e. human right, labour, social, economic, environmental and product responsibility.

Proposition 1: Human rights CSR has positive relationship with brand equity in men's grooming products.

Proposition 2: Labor CSR has positive relationship with brand equity in men's grooming products.

Proposition 3: Social CSR has positive relationship with brand equity in men's grooming products.

Proposition 4: Economic CSR has positive relationship with brand equity in men's grooming products.

Proposition 5: Environmental CSR has positive relationship with brand equity in men's grooming products.

Proposition 6: Product responsibility CSR has positive relationship with brand equity in men's grooming products.

DATA COLLECTION AND DATA APPROACHES FOR FUTURE RESEARCH

This is a conceptual paper that is based solely on the review of literatures on the topic of brand equity and CSR. This approach is further streamlined to highlight the specific sample of men using men's grooming products, which may have difference perceptive on the CSR and brand equity.

For future research, the post-positivist paradigm is a form which is more suited for quantitative research. It will be a casual research to investigate the cause and effect relationship between variables. Also known as explanatory research, the major objective of this research approach is to obtain evidence and test hypothesis regarding cause and effect relationships (Malhotra, Hall, Shaw and Oppenheim, 2002) and make inferences concerning the causal relations among the variables (Allen and Rao, 2000). According to Churchill and Iacobucci (2002), the casual research design is also deemed as the best method to determine cause and effect outcomes. The sample population to be studied would be men's grooming products purchaser and user in Malaysia.

The conceptual paper proposed a conceptual framework where the population is Malaysian male between age 20 to 39 years old with total population of 5,846,500 people. This proposed a non probability sampling with purposive and snowball sampling method, which is convenient and economical and with the sample size of 250. The instrument will be adopted and adapted for this future research study which involves quantitative data collection. Self-administrated questionnaire is proposed to be used as the research instrument. Hypotheses testing will undertake to explain the variance in the dependent variables to predict relationship. The data that will be gathered through questionnaire will be coded using the computerized SPSS software version 23. After that, the data will be analyzed using SmartPLS 3.0 software because the goal of this study is to identify the key influential factors of CSR towards brand equity in men's grooming products. PLS is suitable to be used as predictive purposes (Hair et al., 2013). Furthermore, as PLS is a non-parametric method, it does not require the survey data to be normally distributed and it has no identification problems to run the model with small sample size (Hair et al., 2013). However, it is important to note that PLS has its own weaknesses, such as no global-of-fit criterion as CS-SEM, so it is limited to be used as theory testing and confirmation (Hair et al, 2013).

CONCLUSION

In summary, although, previously, grooming industry is conquered by women, but now men are also becoming an important consumers in these markets (Zayer & Neier, 2011). The competition in the men's grooming products market is getting greater as more players is coming in to share the pie of market. Hence, brand equity is very a significant marketing outcome to compete with other players. CSR is needed for the rapidly growing of men's grooming products in order to capture the significant market and to gain the brand equity. CSR, particularly when visible and credible, can affect customer brand metrics and financial brand performance metrics. 9,055 organizations in year 2016 which including well-known grooming product brands such as Procter & Gamble, Johnson & Johnson and L'Oréal France (Sustainability Disclosure Database, 2016) have chosen the Global Reporting Initiative (GRI) framework because of its establishment of a organized, categorized guideline which eliminating the ambiguity of scope in the ranges of CSR (Nikolaeva & Bicho, 2011). Hence, in this conceptual paper, this GRI framework which consist of human rights, labour, social, economic, environmental and product responsibility is proposed to be used to test the relationship with brand equity in future study. The conceptual paper also suggested future study that will be examining how the CSR influences towards the brand equity in the context of Malaysia men's grooming products.

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BOARD CAPABILITIES IN GOVERNING ESG PRACTICES: RESOURCE- BASED VIEW THEORY (RBV) PERSPECTIVES

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ABSTRACT

The aim of this paper is to obtain information on the extent of ESG practice in Malaysia Public Listed companies and to analyse the supervisory role of board of director in governing ESG practices. This study will conduct a review of the resource-based view theory (RBV) on how company competitiveness advantage can be achieve through board members capabilities contributions as their role are instrumental in ensuring adequate and effective implementation of ESG practices. The predominance of this research can be attributed to the comparative categorization of board capabilities, as well as to help independent assurance firm, statutory bodies and also the government in promoting and enhancing ESG practices within corporate Malaysia.

Keywords: Board capabilities, ESG, Resource- Based View Theory

INTRODUCTION

The enforcement of Environmental, Social and Governance (ESG) standards by national governments are vital as raising environmental, social and high quality governance has great impact to the business community and also the country's economy. Since 2014 Malaysian National Budget until the latest budget, 2016, government announced that efforts would be intensified towards promoting Malaysia as a market for Social Responsible Investments (SRI) and an ensuring this commitment, the Environmental, Social and Governance (ESG) Index was created to raise the profile of listed companies in Malaysia with high socially responsible practices. (Bernama, 2016). Socially Responsible Investing (SRI) relates to "investment process that considers the social and environmental consequences of investments, both positive and negative, within the context of rigorous financial analysis" (SIF, 2008). We understand to be one of market of SRI will give many good impact to Malaysia as Gates (2013) also believed SRI is a way to identify companies with strong sustainability records and to evaluate as well as improve on ESG standards and performance. Thrust is now in the direction of investment only in socially responsible companies in socially responsible countries. This carries with it wide

implications for many organisation. For example, there is a growing view among institutional investors that environmental, social and corporate governance issues can affect the performance of investment portfolios. (Viviers & Eccles, 2012; Eccles & Viviers, 2011).

Nixon (2016) further mentioned that investors nowadays are concern and emphasizes ESG as an indicator or risks consideration factors in making investment decision and they collectively agreed that global climate change has increased the assessment process. Aini and Sayce (2010) also mentioned majority of investors have long term goals towards sustainability and increasingly are interested in corporate efforts in avert climate change even where this have no direct impact and relevance to their core investment activities.

Climate change and the depletion of natural resources exposes to various risks exposures to corporation, society and environment at large. In Malaysia, climate change impacted the environment in a numerous ways such as flood and drought. (Rahman, 2016) For instance, flood occurring in urban location or city centres can disrupt the city's public services from functioning, endangering human lives and causes damage to public properties. Another instance, is the water scarcity issue faced by Malaysia (Ng et al, 2007). The increasing numbers of new buildings in big cities has put pressure over the existing provision of water supply. Water shortages will affect areas with less rainfall, affecting the community in terms of water constraints and increased costs in additional water supplies.

Apart from environment issues, social issues such as fair labour, workers' safety and well-being, access for the disabled as well indigenous people rights is another aspect to reckon with as it is seen as very sensitive to Malaysia society. At this point, it is important to understand how companies react to these issues (Aini & Sayce, 2010). Although it is arguable that the companies' operations may not have a direct or causes material impact to the environment therefore responding or formulating an action plan to the address the sustainability issues may not bring any benefits. Fuel by climate change concerns and worse egregious governance breakdown can trigger negative sentiments thus investors and government are pushing harder than ever for company to demonstrate real commitment on adopting and practising industry's best practices.

Government efforts in encourage ESG best practices has been intensified and as such can be seen in the Eleventh Malaysia Plan(2016-2020) which encourages the corporate sector to implement CSR programmes and explicitly identifies commitments towards society and embracing and balancing social needs against an evolving social environment. Besides that, the Malaysian Institute of Integrity (MII) had also developed the National Integrity Plan in meeting the "Fourth Challenge of Vision 2020". The objectives of the National Integrity Plan are to improve on the quality of life for Malaysians and to enhance corporate governance and ethics. (NIP, 2010).

Thus to accomplish these objectives, corporate sector should indeed give emphasis on this aspect and join hands to make this effort a success as Gabriela (2012) also stated that quality of life is the essential to social responsibilities of company. Companies have striven to carry out initiatives that benefit entire communities, as well as giving individuals opportunities to move up the value chain and improve community lives.

Moreover, it is obvious that the Government of Malaysia encourages ESG practices as it can and will attract potential investors to invest in Malaysian companies which is similarly seen in the United Kingdom (UK) and the United States (US) companies where ESG practices has helped enhance the company’s performance therefore indirectly impacting to the development of economies of the country due to increase of investor confidence in our country. (George & Harrison, 2011).

Thus, the key person to direct the operations of the company collectively, and by satisfying the interests of its shareholders and stakeholders must be through a leaders which is the Board of directors. They will help the company by setting up strategies and plans by shows their own accountability and capability to the company to implement appropriate strategies for long-term interests of the company, as well as the efforts to accommodate the interests of all stakeholders in the business venture are a priority. (Ljubojevic et.al, 2013).

Ackers (2014) also found that board of directors has a fiduciary responsibility to ensure that the company acting in the best interests to create sustainable shareholder value over the long term while at the same time managing their relationships with the various stakeholders from society and minimizing any negative impact on the environment. In line with the element “G” in ESG abbreviation, corporate governance was believed is the system by which corporations are directed and controlled, it is through corporate governance that the interests of all these stakeholders and the interaction with the environment can be managed. (Kerry, 2012). By examining and understanding the responsibilities of the board of directors, the key role of corporate governance in the relationship of corporations with society and the environment becomes apparent.

This research aims to analyse the extent of ESG practice in Malaysia Public Listed companies and to model the role of board of director in governing the ESG practices. This study will also support the resourced-based view theory (RBV) of how company competitiveness advantage can be achieved through board members capabilities as it can be seen instrumental towards the implementation of ESG practices. At higher corporate levels, capabilities result from the combination of physical, human, technological and reputational resources developed over time (Canner, 1991; Amit and Shoemaker, 1993; Winter, 2003).As defined by Dosi et al(2003) ,capabilities are not things but ways of doing, or properties of collective knowledge that we can recognize through action.

The results from this study shall carry interest among vested parties specifically the shareholders, board members and related regulators on how board capabilities and ESG practices relationship shall contribute in manoeuvring company’s overall performance.

PROBLEM STATEMENT

George & Harrison(2011) state that ESG is very essential be in place and introduced to ensure that economic activities and development are conducted based on improved environmental and socially responsible operations, and enhanced corporate governance to stop the onslaught and degradation or destruction of the country’s natural environment in the name of progress and development. Otherwise, the well-being of the Malaysians will ultimately be adversely affected. (Laura, 2015).

On top of that, as reported by Lee (2016), environmental, social and governance concerns play a growing role in investment matters as large investment organizations such as the institutional investors nowadays are keener in sustainable investing due to concern raised by their contributors or investee. It is therefore crucial that a platform to benchmark ESG investment performance, issue index-based ESG investment products, and the management and reporting of ESG compliance mandate is provided. (Viviers & Eccles, 2012; Eccles & Viviers, 2011). Similar interest is also seen by retail investor, funds management companies and individual investors that the companies they invested in practices good ethics and are environmentally sound. In aligning efforts to encourage ESG practice, the Malaysian government had mentioned in its Budget that ValueCAP, a government-linked investment company, shall invest only in companies that are listed in the Environmental, Social and Governance (ESG) Index. (The Star, 2013).

Even as the government has intensified efforts and create platform to encourage ESG practices among the existing companies listed in the country's Bursa Malaysia Main and ACE markets, the number of Malaysian companies adopting CSR reporting or ESG related reporting are still low (Said *et al.*, 2009; Mohamed Zain and Janggu, 2006; Manasseh, 2004; Nik Ahmad and Sulaiman, 2004; Shaw Warn, 2004; Ramasamy and Ting, 2004; Foo and Tan, 1988).

Based on the latest report reviewed from the period, January to June 2016, only 5 new companies were added to the F4GBM Index, bringing it to a total number of 39 companies so far whereas if compared against the existing number of companies listed in FTSE Bursa Malaysia Index alone, the numbers totalled to an approximate 200 companies. (Teh, 2016).

The question is why from the present 200 companies listed in FTSE Bursa Malaysia Index only 39 companies were listed in ESG Index. This indicates that Malaysian companies are still at the infancy stage in practicing 'Real' ESG in their business which draws to the attention as to whether the board actively play their role in promoting and implementing ESG practices. Chris (2015) also give his view about ESG practice in Malaysia are still in fairly lacking compared than developed countries that taking into account on environmental concern, social development and governance accountability in make investment decision.

One of the most notable statistics from the study in developed countries (North American) was that the finding presents a result of less than fifty percent (50%) or thirty (30 of 65) of the companies' boards monitor and provide recommendations on social responsibility trends and developments for their companies. (Sarah, 2011) Most of board oversight role in addressing CSR issues are merely focused on corporate compliance such as complying with applicable standards or listing requirements as such boards are not looking to evaluate the capacity of corporate management systems to respond to stakeholder expectations. (Sarah, 2011). From this report, we should have ambiguity towards our board's roles in enhancing ESG especially in developing countries like Malaysia, in addition Doh, Littell & Quigley (2015) also argued that developing countries have the possibility that they are ineffective in dealing with fundamental social necessities.

There are plentiful of research conducted which proved of board's significant role in enhancing CSR, social responsibility performance and enhancing shareholder value. This is because the directors are responsible in the oversight of the company which includes setting up of

company's policies and the management of disclosure information (Kirkpatrick, 2008). The role of the boards has expanded as its aims are not only to achieve profit maximization but also to take into consideration the interests of other stakeholders. Thus, directors' roles and responsibilities are significant in improving firms' performance and in due course providing sustainable long term value (Hillman et.al, 2000). Moreover, Henderson (2012) have also highlighted that the duty of boards of directors is to also fulfill their obligation to protect the environment for future generations. On top of that, resource-based theory suggests that capabilities of the directors in terms of knowledge assets, represents an essential resource that best enhances and supports improvement to firm performance (Marr and Schiuma, 2001; Carlucci and Schiuma, 2007). As directors are seen as a useful resource (Afrifa and Tauringana, 2015) therefore the combinatory role of board governance and directors capabilities can contribute in enhancing ESG practice in the company.

As such, it will be satisfying to conduct a research study in Malaysian context, as to whether the implementation of ESG practices are contributory and based on the attributes of board members capabilities. Board capabilities are represented by director' skills, knowledge, experience, reputation, dynamic and innovation ability in providing direction and coordinating activities for the betterment of the organization (Barney, 1991; Makadok, 2001, Sanchez et.al, 2011). The predominance of this research can be attributed to the comparative ease of categorization of board capabilities, as well as to help firm and government in promoting to the enhancement of ESG practice particularly in Malaysia.

RESEARCH QUESTIONS

- 1) What capabilities are required from board to encourage or enhance ESG practices?
- 2) How board capabilities can contribute to enhance ESG practice in Malaysian incorporated companies?
- 3) Why board capabilities are important to ensure ESG practice within an organization is implemented or enhanced?

OBJECTIVES OF THE RESEARCH

- 1) To identify and determine which type of board capabilities that can help in enhancing ESG practice in Malaysian organization.
- 2) To explore the different type of board capabilities significant in promoting ESG practice.
- 3) To determine ways and mechanisms by which board capabilities can be implemented or enhance in company's business practices.

SIGNIFICANCE OF STUDY

Overall, this study aims to understand to what extend ESG practices in Malaysia and how board capabilities have impact toward enhancing ESG practices. As we know, the ESG agenda is one of the many initiatives of Malaysian Government in encouraging more companies to shift and enhance their business practices and reporting disclosures towards being environmentally

concern and socially responsible organization. In “Vision 2020” foundation has been laid down for Malaysia to become a developed nation that is united, caring and economically just society. Thus, this research will be very useful for leaders or captains of companies in maneuvering towards becoming socially and environmentally responsible organization. Besides that, the objective of the Eleventh Malaysia Plan (2016 – 2020) and the National Integrity Plan are also focusing on creating a better quality of life for all Malaysians. It urges all corporate sector to integrate and implement CSR policies as it can not only enhance company’s reputation but also its financial performance, thus fostering bottom line growth towards sustainability.

The results from this research study shall enable the board of directors committee or shareholders to identify, select and apply those area(s) of capabilities that they deemed fit or relevant for the purpose of enhancing ESG practices. This research is expected to provide a positive impact in fostering potential or further investment whether from domestic or international investors. In addition, the findings shall also complement government initiatives and efforts in encouraging ESG practices and disclosure within corporate Malaysia. The outcome of which shall potentially encourage and increase investment activities hence contributing to the availability of equity funding and the companies’ share value. As such, it shall help to spur Malaysia economy towards a sustainable future and better economic prospects which is much needed in today’s gleam economic outlook. The government of Malaysia has also contributed to a positive corporate social responsibility environment impact, which under the Eleventh Malaysia Plan, specifically: Vision 2020 sets the foundation for Malaysia to become a developed nation by the year 2020 through the creation of a united country that cares for the environment and that are also economically just towards the society. Corporate’s contributions to society are evident in government’s policies and initiatives to meet the Fourth Challenge of Vision 2020; to establish an ethical society. In addition, the National Integrity Plan was developed in 2004 with the following objectives, to reduce corruption, to enhance corporate governance and ethics, and also to improve quality of life for Malaysians.

This research is also expected to assist the Malaysia Institute of Directors in providing greater insights as this body is seen to encourage its members in attaining high standards of professional knowledge and expertise, making serious commitments to their profession and to undertake to act with probity and honesty.

LITERATURE REVIEW

Environmental, Social, and Governance (ESG) refers to extra financial material information about the challenges and performance of a company. It thus delivers additional relevant information, allowing more differentiated investment judgements by enabling investors to better assess risks and opportunities. (Bassen & Kovacs, 2008). ESG is also commonly used by investors to assess competencies of a company’s management as well as to support its risk management assessment framework (Galbreath, 2013).

Ouaknine, Whooley and Crozat (2013); Roy and Gitman (2012) argued that investors are increasingly looking at ESG practices of the companies they invest in as a way to improve the financial performance of their investment portfolio. Koehler and Hespeneide (2013) also

stated that addressing ESG can impact company financial performance through to its operations or products, or indirectly through stakeholder actions along the entire value chain such as operation risk (environmental and social issue ; pollution and health and safety). Thus, in order to realize ESG practice and sustainability, board of directors are mechanisms are the key of importance. (Bear et al. 2010). Yet, there is limited literature that examined relationship between Board of director and ESG, we consider in referring ESG aspects to CSR or sustainability that have been traditionally assessed (Velte, 2016).

A number of theories have been used to study the relationship between board of directors and company's social performance such as agency theory, resource dependence theory, stakeholder theory and legitimacy theory. Based on agency theory, the board of directors are considered to be the decision control experts with regards to reputational concerns (Fama and Jensen 1983). Hence they capable to perform an effective monitoring task which includes protecting the interests of not just the shareholders but also other stakeholders of the firm. (Trojanowski et.al, 2016; Johnson and Greening 1999).

As for stakeholder theory, social responsibility performance reporting is arguably seen as meeting various stakeholders' information needs (Freeman, 1984). This theory underlines that board should not focus on fulfilling shareholders' needs but rather to satisfy a variety of other stakeholders, such as workers, customers, suppliers, and local community organizations. It implies that without proper practices and disclosure of information, it may lead to different interest groups to withdraw their support for the company, thus company should agree that not only financial can benefit the company (Alvarez et al., 2011).

In the perspective of legitimacy theory, the board of directors' role can be seen as a mechanism of legitimacy and reputation. This is because they play an important role in enhancing corporate image and act as a monitoring role in ensuring that companies are properly managed especially in issues of social responsibilities. (Said et.al.2009; Michelon and Parbonetti, 2010). In contrast, based on resource dependence theory perspective, the board is seen as a resource for managing a firm's environmental dependencies and uncertainties, such as those posed by the social and natural environmental challenges (Pfeffer 1972, 1973; Pfeffer and Salancik 1978; Hillman et al. 2000)

While our discussion to this point makes clear the nature of the causal positive links we expect between board of director and firm social performance, it does not clarify how board may affect social and firm performance. Thus, to response to this gap, this study shall draw upon the insights on board capability from the aspect of resource-based view theory as such it may lead towards contributing to the enhancement of environment and social governance practices by boards hence the association to better corporate performance.

Based on resource-based theory of a firm (Wernerfelt, 1984; Barney, 2001), the notion of capability has been defined as a "capacity for a team of resources to perform some task or activity". Thus we should look on how board of directors shall become a unique resource of competitive advantage and in direct relation to the enhancement to social performance. (Barney, 1991). In a similar study, Mallin and Michelon (2011) examine the relationship between board characteristics and corporate social performance, and support the resource-based view (RBV) of the board significance role in ESG aspects.

Mallin and Michelon (2011) use RBV to explain the relationship between boards' reputation, attributes and corporate social performance. In addition, Russo and Fouts (1997) also stress the importance of nurturing and building resources through sustained actions for creating and maintaining a pro environmental internal capabilities and external reputation. Consistent with these arguments, the composition of a board of directors is not only a unique internal resource, but also a source of building external linkages, reputation and social legitimacy.

A related literature (for example, Johnson & Greening, 1999; Liao et al., 2015; Michelon & Parbonetti, 2012) suggests that directors, with diverse background and skills and strong stakeholder orientation, can enhance a board's ability to make a balance between financial and environmental accountability, as well as short-term and long-term objectives of a firm, and thus accommodate conflicting interests of managers, shareholders and various other stakeholders. (Haque, 2016).

Castanias and Helfat (1991) and Lado et al. (1992) also used RBV to suggest that the generation of firm performance is critically linked to the skills, expertise and knowledge of board of director. This was also supported by McEvily and Chakravarthy (2002) which suggest that knowledge generates more durable advantages than any other resources of the firm because it is largely complex, specialized and tacit. Drucker (1988), Grant (1996), and Spender (2003) suggest that knowledge is perhaps the only true source of competitive advantage.

Dory (2005) also points out that “innovation can be considered an effective exploitation of new ideas, using a foundation of existing knowledge to create new products and services, or to develop existing ones”, and from the point of view of resource-based theory, innovation is recognized as playing a central role in creating value and sustaining competitive advantage (Baregheh et al., 2009). The empirical evidence allows us to suggest that, board of directors are capable in implementing innovations in the company through learned knowledge therefore subject matters on sustainability and ESG can be addressed where if deemed feasible, investment in research and development should be encourage for long-term sustainability.

In China, as suggested by Zou and Chan (2016) stressed that resource-based capabilities that are likely to be particularly important for company's growth strategy are: (1) technological capability; (2) marketing capability; (3) networking capabilities and (4) dynamic capability. The dynamic capability is the evolutionary extension of the resource-based perspective as it explicitly looks at how capabilities evolve and how boards deal with environmental turbulence (Helfat et al., 2007). They affect the productive process indirectly by integrating, reconfiguring, gaining, and releasing resources to respond to environmental turbulence or to create internal and external change (Eisenhardt and Martin, 2000; López, 2005). Thus, we can refer that dynamic capability is board's capacity to purposefully create, integrate and reconfigure corporate level resources and competences to address changing ecosystem. This is supported by boards leadership skill on managing firm's strategies and the results of which is virtually unquestioned in the field of management studies (Kiel and Nicholson, 2005; Sonnenfeld, 2002). A firm's board of directors are presented with a set of roles or functions (Beaver et al., 2007; Johnson et al., 1996), and how the board effectively and efficiently plays their roles. Thus, their contributions in terms of stewardship and acute decision making skill can add value to the company and also the financial results of the company. (Nkundabanyanga et al., 2013; Murphy and McIntyre, 2007; Forbes and Milliken, 1999).

Prior literature addresses on the overview of board capabilities roles in response of social responsibilities. (Castanias and Helfat (1991); Lado et al. (1992), Johnson & Greening, 1999; Michelon & Parbonetti, 2012; Liao et al., 2015). Since limited study was conducted to highlight roles of the boards in the enhancing ESG practice from Malaysia perspectives, this study will fulfill the gap by analyze the board capabilities in promoting ESG practice since ESG had just introduced and still get minimum attention from public in Malaysia.

CONCLUSION

Apparently, there is clear indication that investor market is increasingly concern on ESG practices by companies (i.e. investee) within their investment portfolios as it is seen as another viable avenue that can improve and meet their financial returns expectations or return on investment (ROI) hence increasing shareholders' value. (Tarmuji et al., 2016). That is, socially responsible investors believe ESG practice and corporate social performance information is relevant to predict a firm's future financial performance (Dieter, 2013). ESG impact on a company's financial performance can be in different forms such as through company's operations or products, or indirectly through stakeholders actions or along the value chain network which may directly or indirectly effected by environmental or/and social issues. Thus, in order to mitigate risks exposure to such issues and the realization of efforts in materializing ESG practices, the board of directors is the key motivator in accomplishing the mandated role (Bear et al. 2010).

Based on resource-based theory of a firm (Wernerfelt, 1984; Barney, 2001), the notion of capability has been defined as a "capacity for a team of resources to perform some task or activity". Thus we should focus on understanding the company's nature of business and the environment in which it operates as such to select or "cherry-pick" directors competent and unique to the industry hence creating competitive edge over competitors and enhance the environment and social performance. In a similar study, Mallin and Michelon (2011) examine the relationship between board characteristics and corporate social performance, and support the resource-based view theory (RBV) of the board significance role in ESG aspects. Therefore based on RBV theory, we strongly suggest that board capabilities that should be considered or assessed on are skills, expertise, reputation, innovation and dynamics. We believe that the criterion set on board capabilities is the indicator or alpha factor through which ESG practice can be implemented thus leading to higher investment returns.

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