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Mission

An academic journal that aims to advance knowledge in the business and accounting disciplines, to narrow the gap between theory and practice, and to set direction for policy initiatives in Asia

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Editors' Note

The *Asian Journal of Business and Accounting* (AJBA) is proud to present you with its 2018 first issue of volume 11. AJBA made its first debut in 2008 and during its course, the journal has strived to contribute to the academic discourse surrounding the business and accounting issues of Asia and the Pacific region. Throughout the years, AJBA has seen a steady increase in readership, article submissions and citations to our published articles. AJBA is indexed in the Emerging Sources Citation Index, Scopus, ERA, Asian Citation Index and MyCite. With a continuous and enhanced reputation that broadens visibility in the academic community, AJBA will soon succeed in its endeavour to be indexed in the Thomson Reuters Web of Science.

In the current journal issue, we present a diverse selection of inspiring and interesting articles from both domestic and international scholars. The first article looks at how reputation, financial distress and financial performance influence Shariah-compliant companies into engaging earnings management behaviour. In this article, Ibrahim, Muhamad, Yusoff and Darus use the financial data of 69 FTSE Bursa Malaysia 100 Index companies, dating 2010 to 2014 (five years). Their study concludes that although Islamic values and principles may deter the management from carrying out unethical conducts, the failure of companies to adhere to holistic accounting practices and reporting may result in earnings management behaviour. In view of the increasing importance of Islamic values and principles, the second article by Graham and Sathye is a comparative study which examines how cross-cultural differences affect the capital budgeting system in Australia and Indonesia. They find empirical evidence to support the existence of sophisticated capital budgeting systems which are driven high level of perceived environmental uncertainty and Sharia governance rules in Indonesia. While an understanding of the dissimilarity between the national and foreign culture is crucial for managing businesses, it is also inevitable that each country will have its own institution which may generate institutional distances that can affect international operations. The distance may become larger in the context of a developed and a transition nation. The importance of this issue is addressed by Vo, Akhbar, Nguyen and Nguyen. They investigate the impact of institutional distance in the form of national culture and regulations between home and host countries and their choice of multinational enterprise's (MNE) entry mode into Vietnam. Based on the Probit regression results, their study reveals that institutional distance between a host country and the home countries is an important element for MNEs to consider when making decisions to invest in a transition economy that contains high level uncertainties.

In a contemporary global and competitive environment, the sustainability of a company not only depends on how it can effectively and efficiently pursue its investments in the international market by taking care of the national differences and values but also on how well it is in managing the internal financial and operational affairs. In the fourth article, Nguyen and Mohanlingam present the findings of a study that investigates the relationship between cash conversion cycle and profitability that exists in the agriculture and food industries of Thailand. Using Pearson's correlation and regression analysis, they find that cash conversion cycle (CCC) has a significant inverse relationship with profitability in the agriculture and food companies of Thailand. In the context of Indonesia, Hariyati and Tjahjadi examine how contextual variables which include innovation strategy, management accounting information systems and internal business process performance can affect the financial performance of manufacturing companies in the East Java Province of Indonesia. The results show that management accounting information systems and business process performance partially mediate the innovation strategy-financial performance relationship. This implies that managers need to improve the design and implementation of their accounting systems and their internal business process performance so as to support the firm's innovation strategy which in turn, has an impact on the firm's financial performance. In the subsequent article, Sofyani, Akhbar, and Ferrer look at the performance measurement system (PMS) implementation of the Indonesian local government by using a qualitative approach. The study highlights that whilst the PMS plays a significant role in improving performance and accountability, its implementation in Indonesia was underachieved due to the existence of institutional isomorphism at the coercive level. As more companies are expanding globally, Internet Financial Reporting (IFR) is becoming an increasingly important topic. Despite the importance of the IFR as a means of increasing the firm's overall transparency, this practice is generally voluntary and unregulated, with many variations occurring in the manner companies implement their IFR practices. In the seventh article, Akmalia, Bin-Ghanem and Hashim examine the effect of ownership structure and Internet penetration of companies on their IFR practices. Their study aims to test whether Internet penetration moderates the relation between ownership and the IFR. Using data collected from companies in the Gulf Cooperation Council (GCC) countries, their study illustrates that companies with high government and family ownerships have lower extent of IFR. They also highlight that high quality IFR is evident in companies located in countries with a strong Internet penetration.

For companies to serve the market better and to sustain their financial ability, it is pertinent that they obtain information about the current and future needs of their customers. When customers are satisfied with the values provided by the products or services offered, they are likely to repurchase and recommend the products to others. In light of this, Ansory and Safira use the questionnaire survey approach to predict the passengers' behavioural intention of using railway services. The results show that different age groups have different evaluations and they use different determinants for gauging the railway services. This paper zooms in on Jakarta as it is one of the world's largest agglomeration that is also acknowledged to have the worst traffic problems. Understanding the customers' behavioural patterns of public transportation may facilitate in easing the escalating traffic congestion problem. In the following paper, Raut, Das and Kumar adopt the Theory of Planned Behaviour (TPB) to explain the individuals' intention to invest in the capital market. Using data collected from 396 individuals in Eastern India through a survey, they find that attitude towards behaviour, subjective norms and perceived behavioural control are significantly associated with behavioural intentions. The findings also highlight that the inclusion of past behavioural biases can improve the predictive power of the model. With the tremendous growth of active Internet users and high Internet penetration rate, social media has grown to become a popular platform for electronic advertisements such that by word of mouth, the bloggers' opinions and recommendations can affect the consumers' purchase intention. In relation to this phenomenon of consumer behaviourism, the final paper in this issue examines the relationship between various antecedent factors affecting consumer attitude towards blogger recommendations and their purchase intention. Using data collected from 384 individuals in Sabah, Malaysia, the authors, Phang and Ming, highlight the relationships existing between consumer attitude and the antecedent factors namely, perceived usefulness, trustworthiness, information quality and perceived benefits. The study also confirms the mediation role of consumer attitude towards blogger recommendations. Most importantly, consumer attitude towards blogger recommendations is found to have a significant influence on consumer purchase intention.

On a final note, we would like to thank the Malaysian Accountancy Research and Education Foundation as well as the Malaysian Ministry of Higher Education for the financial support extended. We also wish to say Thank You to the members of the editorial and advisory boards as well as the reviewers for their time and efforts put into AJBA. We take this opportunity to show our appreciation and to thank AJBA's former Co-chief Editor, Ainin Sulaiman and the Deputy Chief Editor, Chan Wai Meng, for their drive, dedication, passion and perseverance in managing the journal and also for bringing this journal to its current level.

Thank you, and happy reading!

Che Ruhana Isa	Suhana Mohezar
Chief Editor	Deputy Chief Editor

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CONTENTS

Do Shariah-compliant Companies Engage Lesser Earnings Management Behaviour?

Ibrahim Mohd Sabrun*, Rusnah Muhamad,
Haslinda Yusoff and Faizah Darus

ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to understand how reputation, financial distress and financial performance influence Shariah-compliant companies into engaging earnings management behaviour. The financial data of 69 FTSE Bursa Malaysia 100 Index companies, dating 2010 to 2014 (five years), were analysed.
Design/ Methodology/ Approach: This study uses the Modified Jones model (Jones, 1991; Dechow, Sloan, & Sweeney, 1996), Roychowdhury's model (2006) to examine earnings management behaviour of Shariah-compliant companies.
Research findings: The results of this study suggest that company's reputation, financial distress and financial performance are factors that can influence company's earnings management behaviour and that Shariah values are ineffective in deterring the management from earnings management behaviour.
Theoretical contribution/ Originality: The findings of this study contribute to the literature by showing that Shariah values may not

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be beneficial in shaping good business management and reporting practices.
Practitioner/ Policy implications: The alarming results drawn from this study is a reason for policy setters and relevant accounting bodies to give more emphasis on developing better accounting and reporting policies.
Research limitation: This study is limited to non-financial sectors due to measurement limitations.

Keywords: Earnings Management, Financial Distress, Financial Performance, Fraud Diamond Theory, Reputation, Shariah-compliant
JEL Classification: M41

1. Introduction

The global Islamic finance market value is experiencing rapid growth. In the year 2012, its value was USD1.2 trillion and expected to reach USD2.6 trillion in 2017 (PwC, 2013). Malaysia aspires to become the leader in the global Islamic finance market. It established the Shariah Index in 1999, and the Islamic Financial Services Act was enacted in 2013. Further, the Securities Commission Malaysia (SC) reported that the Islamic capital market in Malaysia has grown at an average of 12 per cent per annum (SC, 2015). In 2014, the Malaysia Islamic Capital Market contributed RM1.59 trillion, an amount that is equivalent to 58 per cent of the RM2.76 trillion of the total Malaysia's capital market.

The goal of Islamic business practices is primarily, not about materialism. Instead, it is based on the concept of consumers' well-being and good life. It also stresses on social justice and the balancing of materials and spirituality (Rice, 1999). Scholars (e.g., Noreen, 1988; Kennedy & Lawton, 1998; Longenecker, McKinney, & Moore, 2004) believe that in general, religion is one of the mechanisms that helps an individual to refrain from unethical conduct especially in business operations.

Issues regarding earnings management and creative accounting have been extensively researched (Hossain, Karim, & Eddine, 2014) since Enron's accounting scandal caused by earnings management behaviour (e.g., Gordon, 2002; Healy & Palepu, 2003; Li, Pincus, & Rego, 2008; Desai & Dharmapala, 2009; Ibrahim, Darus, Yusoff, & Muhamad, 2015). Ibrahim et al. (2015), for example, found that companies offering Islamic products and services tend to practise sustainability reporting, which are also less involved in earnings management behaviour.

Based on the robust evidence, Wan Ismail, Kamarudin and Sarman (2015) noted that Shariah-compliant companies have significantly higher earnings quality. Nonetheless, there are studies which claim that companies that are significantly influenced by religion, specifically Islam, also performed unethical conducts including earnings management behaviour (e.g., Dyreng, Mayew, & Williams, 2012; Alkdai & Hanefah, 2012; Hamdi & Zarai, 2012; Farooq & AbdelBari, 2015; Alsaadi, Ebrahim, & Jaafar, 2017). Omar, Koya, Sanusi and Shafie (2014) stated that Malaysian companies commit not only earnings management behaviour but fraudulent financial reporting. This implies that corporate governance mechanisms do not have much impact in curbing the practice of earnings management behaviour by companies (Mohamad, Abdul Rashid, & Mohammed Shawtari, 2012; Abdullah, Halim, & Nelson, 2014). Nonetheless, their studies did not distinguish between Shariah-compliant and non-Shariah compliant status.

To date, scholars are still debating as to whether earnings management behaviour is an act of manipulation or otherwise (e.g., Kaplan, 2001; Vinciguerra & O'Reilly-Allen, 2004; Huang, Louwers, Moffitt, & Zhang, 2008; Johnson, Fleischman, Valentine, & Walker, 2012). Observations, however, indicate that the practice of earnings management behaviour and fraudulent financial reporting share some similar features one of which is the intent to deceive, a conduct motivated by private gains (Marai & Pavlović, 2013).

The current study aims to examine the accounting practice behaviours of Shariah-compliant companies. Using 2010 to 2014 financial data of 69 FTSE Bursa Malaysia 100 Index companies, the present study aims to examine how company reputation, financial distress and financial performance can impact on the earnings management practices of Shariah-compliant companies. The main objective is to examine whether these Shariah-compliant companies which holistically practise Islamic principles, abstain from unethical and immoral behaviours in financial reporting practices.

The findings of this study may provide direction to regulators and other relevant accounting bodies to improve the quality of Islamic and Shariah accounting practices in Malaysia. This study may also enrich literature on Shariah as well as earnings management behaviour research.

The remainder of this paper is organised as follows: Section 2 reviews past literature and develops the hypotheses and theoretical framework. Section 3 explains the research methodology. Section 4 discusses the research findings and Section 5 concludes.

2. Literature Review and Hypotheses Development

2.1 Earnings Management and Financial Crisis

During the 1997 Asian financial crisis, companies were found to be involved in earnings-decreasing activities (i.e., avoid reporting high profits) because these companies were expected to have "lower" earnings as a result of the crisis. Consecutively, companies with "lower" earnings were supported by government-aided financial assistance (Chia, Lapsley, & Lee, 2007). It appears that such kind of behaviour was prevalent among companies (Jones, 1991). Countries in Europe were not exempted, for companies in these countries were also found to be indulging in earnings-increasing activities prior to the 2008 financial crisis. However, such activities decreased during the crisis (Filip & Raffournier, 2014). A recent study (Franceschetti, 2018a) claimed that the financial crisis cannot be deduced to be the cause of earnings management behaviour among companies. This is because there is inadequate evidence to support the existence (Franceschetti, 2018a). Consequently, it is agreed that other factors could influence earnings management behaviour.

Despite Franceschetti's (2018a) claim, many researchers continue to assert that financial crisis plays a major role in causing earnings management behaviour amongst companies. These researchers and their findings, however, are not consistent. For instance, some studies were conducted independently with different sets of data involving different scenarios (Franceschetti, 2018b). Nevertheless, one study conducted by Wan Ismail et al. (2015) did find some evidence to suggest that there were differences in the earnings quality amongst Malaysian companies before and during the 2008 financial crisis. Their results, nonetheless, are different from Chia et al. (2007) and Filip and Raffournier (2014), but consistent with the notion that Islamic financing (i.e., equipped with Shariah guidelines and principles) is a better shield against financial crisis. Shariah values prevent unethical behaviours such as earnings management among the respective companies (Guyot, 2011).

2.2 Earnings Management and Shariah-compliant

Extant literature reveals that religion plays an important role in various matters including the promotion of good ethical behaviours amongst business organisations (e.g., Longenecker et al., 2004; Wan Ismail et al., 2015). In spite of this, recent studies examining financial reporting behaviours amongst Shariah-compliant companies noted that Islamic ethical values did not prevent the management from indulging in unethical conducts specifically, earnings management behaviour (Farooq & AbdelBari, 2015; Alsaadi et al., 2017). In the business domain, earnings management occurs when managers use their judgement to manipulate their financial reporting by structuring transactions with the intent to mislead stakeholders about the company's real financial performance (Healy, 1985; DeAngelo, 1986; Schipper, 1989).

Some researchers note that certain earnings management behaviour is acceptable under conventional accounting standards (Bruns & Merchant, 1990; Merchant & Rockness, 1994; Parfet, 2000; Arya, Glover, & Sunder, 2003). Other scholars regard earnings management behaviour as going against the value of religion (Ronen & Yaari, 2008; Loomis, 1999; Grant, DePree Jr, & Grant, 2000; Solomon, 1992; Rawls, 1972; Vladu, Amat, & Cuzdriorean, 2017; Farrell, 2015; Abdullah et al., 2014). For instance, earnings management behaviour goes against the truthfulness of accounting (Ronen & Yaari, 2008); it is intolerable (Loomis, 1999; Grant et al., 2000); it is immoral (Solomon, 1992) and it goes against the principle of justice (Rawls, 1972). The financial losses witnessed in Enron, WorldCom, Tyco International (Vladu et al., 2017), Olympus, Tesco (Farrell, 2015) and Satyam Computer Services (U.S. Securities and Exchange Commission (SEC), 2011) within the international front and Transmile and Megan Media in Malaysia (Abdullah et al., 2014) have all been linked, whether directly or indirectly, to issues of deception, misleading information and untruthful accounting.

Arguably, earnings management behaviour can be considered as a tool used by the management to run the business but Jones (2011) agreed that earnings management behaviour is a form of creative accounting. It is employed for the purpose of altering the accounting information that is reported to stakeholders. Such shenanigans are pursued so as to fulfil the management's desires. Consequently, stakeholders especially investors and financiers, are misled by the false information to make wrong decisions (Elliott & Willingham, 1980). In that regard, it is clear that earnings management behaviour may lead to misinterpretation and misapprehension of data, particularly among the stakeholders. Further to this, scholars also believe that companies that are involved in earnings management behaviour have higher possibilities of committing fraud (Perols & Lougee, 2011; Lee, Ingram, & Howard, 1999).

Debates about whether earnings management behaviour is fraudulent or just a management tool to project good financial reports continue to exist among academicians. This is aptly pointed out by Du Jardin, Veganzones, and Séverin (2017, p. 5), "techniques that may be used to present financial statements more or less advantageously are essentially structured around earnings because this is the main variable that reflects firm performance, and any change that may affect accounting statements aims obviously at changing the way firm performance is perceived; this is the reason why these techniques are called earnings management". From the Islamic perspective, earnings management behaviour is considered as illicit (*haram*) because it is an act of deception to conceal the truth (Sheikh Obid & Demikha, 2011).

A study conducted by Wan Ismail et al. (2015) examined the practices of 508 Malaysian companies before the 2008 financial crisis and found that Shariah-compliant companies have high earnings quality. According to Wan Ismail et al. (2015), Shariah-compliant companies have the tendency to report high earnings quality because they are subjected to greater scrutiny from their regulators. In other words, these companies have the duty of maintaining their reputation which promotes and practices Islamic ethical values. Drawing from Lo (2008), Weil (2009), Dechow, Ge and Schrand (2010), and Li, Abeysekera and Ma (2011), companies with high-quality earnings are less involved in earnings management behaviour.

However, Hamdi and Zarai (2012) provided evidence to show that Islamic banks around the world had managed their earnings so as to avoid reporting losses or reduced income because the negative reporting could harm the banks' reputation. Likewise, Farooq and AbdelBari (2015) found that companies in the Middle East and North Africa region which experienced financial distress committed earnings management behaviour. Therefore, it can be deduced that helming a Shariah-compliant company does not prevent its management from practising earnings management. Farooq and AbdelBari (2015) also noted that during the financial crisis of 2008, both the Shariah-compliant and non-Shariah-compliant companies were similarly involved in earnings management behaviour.

It appears that such practices did not escape Europe. Focussing on Shariah-compliant companies in the European Union countries, Alsaadi et al. (2017) also observed that Shariah-compliant companies were involved in earnings management behaviour. Many possibilities can be cited for the phenomenon and one likelihood is the lack of regulation, enforcement and monitoring. Returning to the Malaysian context, one also raises the question of whether Malaysian companies were also involved in earnings management behaviour after the 2008 financial crisis. In Malaysia, the Shariah Advisory Council (SAC), under the Securities Commission of Malaysia (SC), screen public listed companies twice a year, i.e., in May and November and provide a list of Shariah-compliant companies in Malaysia. Companies found engaging in activities which are contrary to Shariah value would be removed from the list. Based on this, it can be deduced that the position of companies in Malaysia is different from that of companies in the European Union countries. Thus, the following hypothesis is posited:

> H_1: Shariah-compliant companies are less likely to engage in earnings management.

2.3 Earning Management and Reputation

Using market capitalisation as an indicator for the company's reputation, researchers like Cao, Myers, and Omer (2012) found that companies with good reputation are less likely to misstate their financial statements; they are also less involved in earnings management behaviour. Aggressive earnings management and accounting scandals can harm the company's reputation (Zahra, Priem, & Rasheed, 2005; Francis, Nanda, & Olsson, 2008; Martínez-Ferrero, Banerjee, & García-Sánchez, 2014). Being a Shariah-compliant company is one way of boosting the company's reputation. Such companies are expected to adhere to Islamic or Shariah values which are favoured by the society. Shariah-compliant companies are thus subjected to greater scrutiny by regulators and other stakeholders (Wan Ismail et al., 2015). Taking this as a possible way to gauge companies, this study aims to examine the effect a company's reputation may have in influencing the management into engaging with earnings management practices. Based on this, the following hypothesis is posited:

> H_2: Reputation has a negative impact on earnings management practices in Shariah-compliant companies.

2.4 Earnings Management and Financial Distress

Various studies have been conducted to analyse earnings management behaviour amongst Shariah-compliant companies (Hamdi & Zarai, 2012; Farooq & AbdelBari, 2015; Wan Ismail et al., 2015; Alsaadi et al., 2017). However, these were carried out in different domains such as business operations, economic landscape and regulations. As a result of the differences, the findings were thus less consistent. Studies have shown that company management engages in earnings management behaviour as a way of avoiding the need to report company losses (Hamdi & Zarai, 2012). This was observed during the financial crisis period where many companies tend to commit earnings management (Farooq & AbdelBari, 2015). Such an occurrence implies that financial distress has an impact on management's decision-making with regards to earnings which seems to take precedence over ethical concern. The severity of a company's financial distress are also proven to have encouraged companies to engage in earnings management behaviour (Jaggi & Lee, 2002) and to intentionally use such earnings management behaviour to write-off losses (Perez, Salas-Fumas, & Saurina, 2008). Based on this, the following hypothesis is thus formulated:

H_3: Financial distress has a positive impact on earnings management practices in Shariah-compliant companies.

2.5 *Earnings Management and Financial Performance*

Extant literature suggests that earnings management behaviour is one of the consequences of better financial performances (e.g., Kim, Park, & Wier, 2012; Ibrahim et al., 2015; Alsaadi et al., 2017; Wang, Cao, & Ye, 2016; Ding, Li, & Wu, 2018). This was also asserted by Orlitzky, Schmidt, and Rynes (2003, p. 408) who said that "indicators such as return on assets and return on equity are subject to managers' discretionary allocations of funds to different projects and policy choices, and thus reflect internal decision-making capabilities and managerial performance rather than external market responses to organizational actions." Therefore, earnings management behaviour may reflect the manager's interest and intention to showcase the company's financial performance (Hemingway & Maclagan, 2004; Bansal & Clelland, 2004). In their view, Alsaadi et al. (2017) mentioned that companies with better financial performances are more likely to engage in earnings management behaviour. They had specifically observed the influence of Shariah-compliant values and financial performance on earnings management behaviour of different organisations. Based on the above, the following hypothesis is formulated:

H_4: Financial performance has a positive impact on earnings management practices in Shariah-compliant companies.

2.6 Theoretical Framework

Fraudulent financial reporting relates to deliberate fraud that is committed by management. This practice can bring financial harm to investors and creditors who make their decisions based on misleading financial statements (Elliott & Willingham, 1980). Misleading financial statements are designed by company managers with the intent to deceive. The unethical behaviour may be accomplished by using fictitious documents and creating misrepresentations in the accounting reports (Pierre & Anderson, 1984). Consequently, all that was presented in the reporting is a misrepresentation of reality (Wallace, 1995). Nevertheless, not all earnings management practices are considered as fraudulent. This encompasses earnings management behaviour that adheres to accounting standards.

To accomplish the aim of this study, a number of approaches were applied. First, this study uses the Fraud Diamond Theory to understand the inconsistency and mixed findings of earnings management practised amongst Shariah-compliant companies. The fraud diamond theory suggests that the perpetrator who commits a fraud is influenced by external and internal factors. Wolfe and Hermanson (2004) posited that unethical conduct happens due to the existence of incentive and/or pressure. The pressures may be financial problems, work problems or personal pressures.

The American Institute of Certified Public Accountants (AICPA) (2002) suggested that a manager is more likely to engage in an unethical behaviour when there is an opportunity, especially where internal control and monitoring are lacking. Such unethical behaviour or conduct is usually for self-benefit or company advantage. In contrast, a study by Septiari and Maruli (2017) showed that managers with high levels of professional commitment have a lower tendency to engage in unethical conduct. Some managers may have very good principles that hold him/her steadfast to his/her responsibilities while others may have reasons to justify their conduct. A rationalisation is an occasion where such managers are able to justify his/her unethical actions. For instance, the managers choose to ignore certain religious and ethical concerns by clinging to logic thereby, locating "a good reason" for doing a bad thing.

Wolfe and Hermanson (2004) focussed on managers' choice to ignore certain religious and ethical concerns by addressing their capability. These capabilities can be viewed from five descriptions. First,

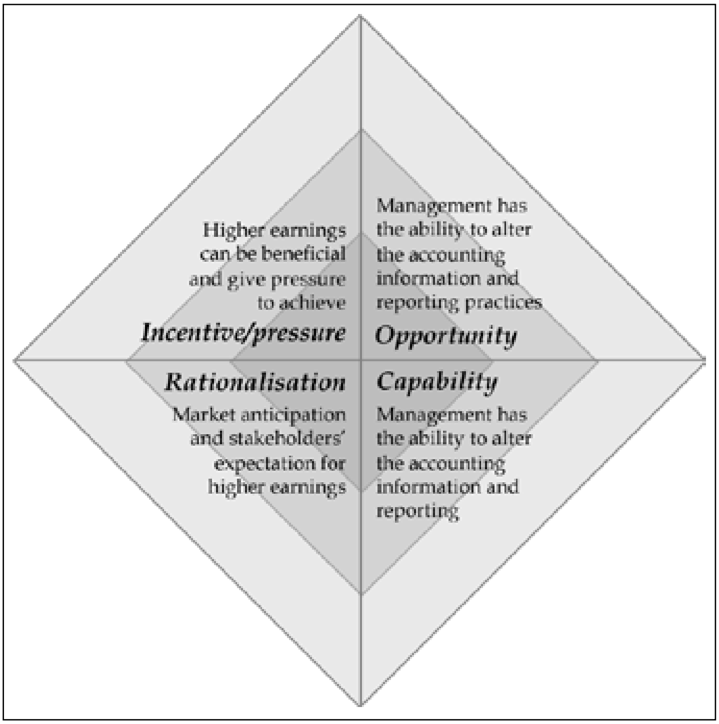

Figure 1: Fraud Diamond Theory on Earnings Management
Source: Self-illustrated based on Wolfe and Hermanson's (2004) theory.

the person with position within the organisation may find an opportunity to conduct an unethical behaviour. Second, the person who is smart in handling and exploiting the weaknesses of internal control and has authorised access to personal advantage is likely to conduct unethical behaviour. Third, a person who has strong confidence and ego thereby making him/her less suspected or detected is likely to conduct unethical behaviour. Fourth, a person who can coerce others to commit or conceal unethical matters is likely to conduct unethical behaviour and fifth, a person who can manage stress is likely to conduct unethical behaviour. All these issues have been highlighted by criminology studies (Sutherland, 1940) which indicate that fraud and misconduct in accounting are learned behaviours.

The Fraud Diamond Theory as illustrated in Figure 1 is applied as a model to understand earnings management behaviour is a fraud activity. As explained above, earnings management behaviour is legal when it is done within accounting standards (see, Bruns & Merchant, 1990; Merchant & Rockness, 1994; Parfet, 2000; Arya et al., 2003). Thus, it is deemed as an open opportunity for the management to practice earnings management without worry. However, when such practices lead to misconduct, it is considered a fraud. Further, incentive/ pressure faced by the management may force them to carry out earnings management behaviour. Cornett, Marcus, and Tehranian (2008) expressed that one of the motivations for managers to manage earnings is incentive which is in the form of a bonus. This finding is also verified by Healy (1985) who noted the effect of earnings management on bonus schemes. It is deduced that when the company's income reaches a certain level, it will affect stock prices and this will consequently increase the manager's wealth.

From the perspective of pressure, Wan Ismail et al. (2015) emphasised that the major scrutiny imposed on companies to perform well according to the practices of the code of conduct such as Shariah compliance is a form of pressure on the management. In their research, Wan Ismail et al. (2015) found that such companies tend to report higher earnings quality. However, due to the anticipation of stakeholders, it was observed that companies which had experienced losses and financial distress, may face the pressure of having to fulfil the stakeholders' demand. To accomplish this, such companies indulge in earnings management behaviour. Jones (2011) emphasised that managers may begin with earnings management but a failure to achieve the desired accounting results may cause these managers to commit fraudulent practices as a way of covering up. This outcome is endorsed by Hassan and Ahmed (2012). They detected that pressure such as meeting analysts' expectations can cause an increase in unethical behaviours within organisations.

Market anticipation and stakeholders' expectation of high valued Shariah-compliant companies are the essential components driving managers to perform well. With that rationale, managers need to shoulder various responsibilities such as providing high earnings quality for the organisation (Dadgar & Naderi, 2009; Wan Ismail et al., 2015). In this regard, managers will do their best to fulfil these expectations and one way to do so is through earnings management behaviour. Undoubtedly, the managers' interpretation of the accounting standards and reporting and the managers' decision making on a transaction are areas which are difficult to measure unless the managers admit that they have acted with the intention to deceive (Marai & Pavlović, 2013). Therefore, these managers have the capability to be involved in unethical behaviours.

Through the application of the fraud diamond theory, it can be seen how managers of Shariah-compliant companies may commit earnings management as they make decisions based on internal and external factors. This study posits that the company's reputation, financial distress and performance are factors that can influence the earnings management behaviour of Shariah-compliant companies.

3. Research Methodology

3.1 Population and Sample Selection

The population for this study comprises 815 companies whose shares were listed in Bursa Malaysia in 2014. According to the SC (2014), over 82 per cent of these companies were recognised as Shariah-compliant. However, as the current study focusses on analysing company's reputation, only selected companies from the FTSE Bursa Malaysia 100 Index were examined. This index ranked the public listed companies (PLCs) by market capitalisation. Thus, with a specific objective and a target sample, this study used purposive-cluster sampling methods. The final sample is shown in Table 1.

Since the SAC carries out evaluations of Shariah-compliant companies twice a year, the list of Shariah-compliant companies within a year can change rapidly, either to include newly classified companies or to exclude previous companies. As a measure to ensure consistency for the categorisation of the companies as Shariah-compliant or non-Shariah-compliant, this study classified a company as Shariah-compliant only if it has fulfilled the Shariah-compliant criteria throughout the period of 2010 to 2014.

From the FTSE Bursa Malaysia 100 Index (2010-2014), 27 companies were excluded from this study because their full data were not available. In taking the trail of previous studies (e.g., Kim et al., 2012; Wan Ismail et al., 2015), this study also chose to exclude companies from the financial industry because earnings of companies in the financial industry are reported differently hence, the measurement of earnings management would be different (see, Grougiou, Leventis, Dedoulis, & Owusu-Ansah, 2014).

As a result, only 69 companies finally fulfilled the criteria to serve as the final study samples. They comprised 38 Shariah-compliant com-

Table 1: Derivation of Sample and Industry Category

Panel A. Sample of Study	No.
Companies listed on Bursa Malaysia as of December 2014	815
Companies recognised as Shariah-compliant by SC as of November 2014	668
FTSE Bursa Malaysia 100 Index	100
Excluded companies (2010-2014)	(27)
Excluded companies in the financial industry	(4)
Final sample	69
Shariah-compliant	38
Non-Shariah-compliant	31

Panel B. Industry category

Industry	Shariah-compliant	Non-Shariah-compliant	No.
Trading/services	11	9	20
Plantation	8	6	14
Construction	8	3	11
Consumer product	4	4	8
Technology	3	4	7
Industrial product	2	3	5
Properties	2	2	4
Total			69

panies and 31 non-Shariah-compliant companies. The purpose of giving focus to these two categories of companies was to understand the influence of Shariah practices. Panel B of Table 1 shows the number of companies categorised according to their industry. In total, there were 20 companies in trading/services and 14 companies in plantation. The lowest sample is the industrial product industry with only five companies and the properties industry consisting of four companies.

3.2 Measures of Shariah-compliant

To be recognised as Shariah-compliant, Malaysian PLCs need to experience three levels of screening established by the SAC. This is in accordance with the rulings of the Securities Commission of Malaysia which strives to evaluate and recognise these companies as Shariah-compliant companies or otherwise. The SAC adopts a two-tier quantitative approach which applies the business activity benchmark and the financial ratio benchmark. Following these activities, the companies will then be duly classified as Shariah-compliant or otherwise (see, SC, 2014). This study used an indicator variable that takes a value of 1 if the company is Shariah-compliant, and 0 if it is not.

3.3 Measures of Earnings Management

3.3.1 Modified Jones Model (Discretionary Accruals)

Literature has established a number of approaches to be used to estimate earnings management. This study applies the extensively used discretionary accruals (e.g., Jones 1991; Dechow et al., 1996; DeFond & Subramanyam 1998; Kothari, Leone, & Wasley, 2005; Mouselli, Jaafar, & Hussainey, 2012) as one of the proxies. Discretionary accruals were estimated through the Modified Jones model. This was adjusted for performance (Dechow et al., 1996; Kothari et al., 2005). Various research have discussed the strengths and drawbacks of this model (e.g., Guay, Kothari, & Watts, 1996; Young, 1999; Thomas & Zhang, 2001; Lo, 2008; Dechow et al., 2010; DeFond, 2010). Despite its shortcomings, there is no alternative model that has a better solution to address the issue of estimating discretionary accruals (Botsari & Meeks, 2008). According to Bartov, Gul and Tsui (2000) cross-sectional approach is the better measurement used to detect earnings manipulations. Consequently, this study also employed the cross-sectional approach of the Modified Jones model instead of the company-specific time-series approach (refer to Appendix A for details).

3.3.2 Roychowdhury's Model (Real Activities Earnings Management)

Real activities earnings management is defined as management actions that deviate from normal business practices and are undertaken for purposes of meeting certain earnings i.e., a deviation from companies' normal operational activities (Roychowdhury, 2006). Following recent researchers, this study also uses Roychowdhury's model which comprises four measures to detect real activities earnings management (e.g., Amoah, Anderson, Bonaparte, & Muzorewa, 2017; Hinkel & Hoffman, 2017; Wardhani & Anggraenni, 2017). They are: (i) operating cash flows, (ii) production costs, (iii) expenses, and (iv) combined measures of real activities manipulation (refer Appendix B for details).

3.4 Measure of Reputation

Prior studies employed the company's ranking in a certain list as the proxy for the company's reputation, for instance, Fortune Index (see, Fombrun & Shanley, 1990; Melo & Garrido-Morgado, 2012; Cao et al., 2012; Martínez-Ferrero et al., 2016). However, since this study is conducted in Malaysia, it is more appropriate to use the rank established in/for Malaysia. Thus, the study uses the FTSE Bursa Malaysia 100 Index, which ranks the PLCs based on their market capitalisation. Additionally, this study uses an indicator variable that takes a value of 1 for PLCs ranked 1-50 in the FTSE Bursa Malaysia 100 Index and a value of 0 for PLCs ranked 51-100.

3.5 Measures of Financial Distress

Three proxies were used to measure the company's financial distress such as: (i) company's losses, (ii) probability of bankruptcy, and (iii) probability of manipulation on tax expenses. The proxies are further elaborated.

3.5.1 Company's Losses

Companies that suffer losses tend to have low earnings quality (Wan Ismail et al., 2015). This implies that the possibility of the company engaging in earnings management is hypothetically high. Burgstahler and Dichev (1997) and Chih, Shen and Kang (2008) suggested that companies might manage reported earnings so as to avoid reporting losses. This study posits that a company's losses may influence its earnings management behaviour. Thus, the current study uses the indicator variable of 1 for the company that reported negative earnings at the end of the financial year and 0 otherwise.

3.5.2 Altman Model

Literature suggests that financially distressed companies have lower earnings quality (e.g., Dechow et al., 1996; Burgstahler & Dichev, 1997; Saleh & Ahmed, 2005). Despite this being so, Wan Ismail et al. (2015) did not find any significant result to suggest otherwise. Nevertheless, this study posits that the effect of financial distress may have an influence on the financial reporting of Malaysian companies. Thus, this study aims to analyse the relationship between the probability of bankruptcy and earnings management behaviour. Following previous literature, this study uses the emerging market model (Altman, Hartzell, & Peck, 1998; Altman, 2005) to measure the probability of bankruptcy of a company (refer Appendix C for details).

3.5.3 Effective Tax Rate

Previous research suggests that a company may manipulate tax expenses to achieve earnings target (Omer, Bedard, & Falsetta, 2006; Mulyadi & Anwar, 2015). In this study, the effective tax rate is measured by comparing tax expenses with taxable income. Based on this, the current study posits that a company uses effective tax rate as one of the mechanisms to engage in earnings management practices. Hence, this study applies the indicator variable of 1 for a company that has paid tax expenses that are lower than taxable income and 0 otherwise.

3.6 Measures of Financial Performance

Extant literature has measured a company's financial performance by using return on assets (ROA) (Prior, Surroca, & Tribó, 2008; Kim et al., 2012; Ibrahim et al., 2015; Wang et al., 2016; Alsaadi et al., 2017) and earnings per share (EPS) (Azeez, 2015; Kurmi & Rakshit, 2017). This study uses both the ROA and EPS to proxy for financial performance.

3.7 Measures of Control Variables

Company size and leverage are widely used as a control variable in earnings management studies (see, Martínez-Ferrero et al., 2016; Lourenço, Rathke, Santana, & Branco, 2018). It is argued that larger companies (measured by total assets) enjoy better reputations (Brammer & Pavelin, 2004) and have lower costs of capital (Hail & Leuz, 2006). This study uses company size which is measured by lagged total assets and level of leverage (e.g., Burgstahler, Hail, & Leuz, 2006; Ali, Salleh, & Hassan, 2008). Leverage is also used as one of the control variables in this study. The level of the company's leverage represents debts (Prior et al., 2008).

3.8 Empirical Models

This study employs four models to analyse the Shariah-compliant companies. Models 1 and 3 are used to analyse both the Shariah-compliant and non-Shariah-compliant companies but Models 2 and 4 are only used for examing Shariah-compliant companies. The models' assessments are formulated as follows:

$$MDJ_{it} = \alpha_1 SHA_{it} + \alpha_2 REP_{it} + \alpha_3 LOS_{it} + \alpha_4 ALT_{it} + \alpha_5 ETR_{it} + \alpha_6 ROA_{it} + \alpha_7 EPS_{it} + \alpha_8 SZE_{it} + \alpha_9 LEV_{it} \quad \text{(Model 1)}$$

$$MDJ_{it} = \alpha_{10} REP_{it} + \alpha_{11} LOS_{it} + \alpha_{12} ALT_{it} + \alpha_{13} ETR_{it} + \alpha_{14} ROA_{it} + \alpha_{15} EPS_{it} + \alpha_{16} SZE_{it} + \alpha_{17} LEV_{it} \quad \text{(Model 2)}$$

$$COM_{it} = \alpha_1 SHA_{it} + \alpha_2 REP_{it} + \alpha_3 LOS_{it} + \alpha_4 ALT_{it} + \alpha_5 ETR_{it} + \alpha_6 ROA_{it} + \alpha_7 EPS_{it} + \alpha_8 SZE_{it} + \alpha_9 LEV_{it} \quad \text{(Model 3)}$$

$$COM_{it} = \alpha_{10} REP_{it} + \alpha_{11} LOS_{it} + \alpha_{12} ALT_{it} + \alpha_{13} ETR_{it} + \alpha_{14} ROA_{it} + \alpha_{15} EPS_{it} + \alpha_{16} SZE_{it} + \alpha_{17} LEV_{it} \quad \text{(Model 4)}$$

where

MDJ and *COM* are proxies for earnings management which are examined separately. *MDJ* represents discretionary accruals. It is a real number (either positive or negative value) of abnormal discretionary accruals which is computed through the cross-sectional approach of the Modified Jones model. *COM* represents real activities earnings management and it is a real number (either positive or negative value) taken from the level of abnormal cash flow from operations (*AbnOCF*) minus the level of abnormal production costs. It is defined as the sum of the cost of goods sold and the change in inventories (*AbnPRD*) plus the level of abnormal discretionary expenses (*AbnDISEXP*) which is defined as the sum of research and development expenses; advertising expenses; and selling, general and administrative expenses.

SHA represents Shariah-compliant and it is an indicator variable that takes a value of 1 if the company is Shariah-compliant, and 0 if otherwise as categorised by the SAC.

REP represents reputation and it is an indicator variable that takes a value of 1 for PLCs ranked 1-50 in the FTSE Bursa Malaysia 100 Index and 0 for PLCs ranked 50-100.

LOS represents losses and it is an indicator variable that takes a value of 1 for companies that reported negative earnings at the end of the financial year and 0 otherwise.

ALT represents financial distress measured using Altman Model. It is a scale variable that takes a value of 3 if the company's z-score is over

2.6 and a value of 2 if the company's z-score is between 1.1 to 2.6 and a value score of 1 if the company's z-score is below 1.1.

ETR represents effective tax rate and it is an indicator variable that takes a value of 1 if the company underpaid the tax expenses and 0 if otherwise.

ROA represents return on assets, which is a proxy for financial performance. It is measured by the company's net income that is scaled by the total assets.

EPS represents earnings per share, which is another proxy for financial performance. It is measured by the company's earnings that is scaled by the total shares.

SZE represents size of the company and it is measured by the log of total assets.

LEV represents leverage and it is proxied by total long-term debt, where *i* and *t* represent company and year, respectively.

4. Findings

4.1 Descriptive Statistics

Table 2 bearing Panel A and Panel B summarises the descriptive findings. Panel A shows the comparison variables in this study based on Shariah-compliant companies and non-Shariah-compliant companies. A significant difference by p-value<.05 on real activities earnings management (*COM*) is noted between the two categories of companies. Shariah-compliant companies lead in reputation (*REP*), effective tax rate (*ETR*), and leverage (*LEV*); they also have a significant difference with the non-Shariah-compliant companies.

Panel B in Table 2 shows the details about the study indicator variables. The samples in this study are comfortably balanced with 55.07 per cent Shariah-compliant companies and 44.93 per cent non-Shariah-compliant companies. The samples are also balanced for reputation, which is 46.38 per cent for companies ranked above 50 and 53.62 per cent for companies ranked 50 and below in the FTSE Bursa Malaysia 100 Index.

Table 3 shows the findings of the correlation coefficients for both the Spearman and Pearson analyses. Here, it is observed that a strong correlation exists amongst the variables with 1 per cent significant level. The highest was .602 which was between *EPS* and *ROA* with the p-value<.01 whereas the other variables were below .60. This finding explains that there is no serious multicollinearity problem between the variables used in this study. As Pallant (2007) suggested, coefficients that are higher than .70 is a sign of a serious multicollinearity problem.

Table 2: Descriptive Statistics

Panel A. Shariah-compliant versus Non-Shariah-compliant

	Shariah-compliant		Non-Shariah-compliant		
	Mean	SD	Mean	SD	Mean difference
MDJ	-.103	.341	.004	.348	-.107
COM	-.052	.210	-.110	.311	.057**
REP	1.526	.501	1.387	.489	.139***
LOS	.237	.426	.368	.484	-.131***
ALT	1.932	.342	1.826	.458	.106***
ETR	1.189	.968	1.432	.897	-.243***
ROA	9.237	1.275	8.735	7.471	.501
EPS	.353	.672	.310	.670	.043
SZE	6.850	.681	6.760	.927	.090
LEV	.522	.273	.596	.227	-.074*

Panel B. Indicator Variables

	Yes (1)		No (0)	
	n	(%)	n	(%)
SHA	190	55.07	155	44.93
REP	160	46.38	185	53.62
LOS	102	29.57	243	7.43
ETR	121	35.07	224	64.93

Notes: *SHA* = Shariah-compliant companies as categorised by the SAC, *MDJ* = earnings management measured by Modified Jones model, *COM* = real activities earnings management measured by Roychowdhury's model, *REP* = reputation, *LOS* = losses, *ALT* = financial distress measured by Altman model, *ETR* = effective tax rate, *ROA* = return on assets, *EPS* = earnings per share, *SZE* = total assets, *LEV* = total long-term.

Significance is based on a two-tailed test, *, ** and *** represent significance level at 10%, 5% and 1%, respectively.

Observation is across the five-year period for 69 companies (345 financial reports) comprising 38 Shariah-compliant companies (190 financial reports) and 31 non-Shariah-compliant companies (155 financial reports).

Table 3: Correlation Coefficient

		1	2	3	4	5	6	7	8	9	10	11
SHA	1		.139**	-.163**	.099	.172**	-.131*	-.143**	-.074	-.014	.043	-.158**
REP	2	.139**		-.154**	.400**	.058	-.036	.060	.197**	.141**	-.128*	.198**
MDJ	3	-.153**	-.171**		-.193**	-.058	.121*	-.013	.099	.067	-.110*	.084
COM	4	.109*	.360**	-.178**		-.033	-.009	-.052	-.041	.150**	.120*	.016
ALT	5	.131*	.037	-.115*	.010		-.174**	-.432**	-.313**	-.143**	.159**	-.069
ETR	6	-.128*	-.036	.092	.039	-.169**		.083	.130*	-.129*	-.078	.217**
LOS	7	-.143**	.060	.001	-.035	-.415**	.085		.054	-.079	-.079	-.060
ROA	8	.027	.151**	.169**	-.017	-.565**	.118*	.117*		.246**	-.571**	.453**
EPS	9	.032	.136*	.124*	.098	-.396**	-.038	.009	.602**		.011	-.155**
SZE	10	.056	-.111*	-.052	.086	.180**	-.087	-.079	-.422**	.003		-.388**
LEV	11	-.145**	.222**	.066	.024	-.031	.248**	-.034	.218**	-.144**	-.369**	

Notes: *SHA* = Shariah-compliant companies as categorised by the SAC, *MDJ* = earnings management measured by Modified Jones model, *COM* = real activities earnings management measured by Roychowdhury's model, *REP* = reputation, *LOS* = losses, *ALT* = financial distress measured by Altman model, *ETR* = effective tax rate, *ROA* = return on assets, *EPS* = earnings per share, *SZE* = total assets, *LEV* = total long-term.
Significance is based on a two-tailed test, *, ** and *** represent significance level at 10%, 5% and 1%, respectively.
Observation is across the five-year period for 69 companies (345 financial reports) comprising 38 Shariah-compliant companies (190 financial reports) and 31 non-Shariah-compliant companies (155 financial reports).

4.2 *Regression Analyses*

This study also examines earnings management by using the Modified Jones model (Jones, 1991; Dechow et al., 1996) and Roychowdhury's (2006) model separately (refer to Table 4). Models 1 and 3 were used to analyse both the Shariah-compliant and non-Shariah-compliant companies but Models 2 and 4 were only used for examing Shariah-compliant companies.

Table 4: Regression Results

	MDJ Coefficients (z-statistic)		*COM* Coefficients (z-statistic)	
	Model 1	Model 2	Model 3	Model 4
SHA	-.087 (-2.265)**		.035 (1.263)	
REP	-.140 (-3.583)**	-.128 (-2.422)***	.198 (7.009)***	.173 (5.661)***
LOS	-.007 (-.162)	.079 (1.225)	-.039 (-1.199)	-.103 (-2.768)***
ALT	.032 (.505)	.187 (1.554)	-.059 (-1.299)	.022 (.317)
ETR	.017 (.815)	.028 (1.097)	.022 (1.535)	.022 (1.489)
ROA	.006 (1.888)**	.010 (2.055)**	-.005 (-1.975)**	.004 (1.373)
EPS	.042 (1.094)	.071 (1.231)	.044 (1.585)	-.060 (-1.831)*
SZE	.011 (.377)	.092 (1.890)*	.024 (1.199)	.006 (.199)
LEV	.091 (1.065)	.197 (1.819)*	.003 (.057)	-.119 (-1.901)**
Industry Dummies	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included
Constant	-.073 (-.286)*	-1.170 (-2.331)**	-.428 (-2.330)**	-.351(-1.212)*
F-statistics	3.904	2.289	7.524	5.711
Adjusted R^2	0.071	0.092	0.146	0.202

Notes: *SHA* = Shariah-compliant companies as categorised by the SAC, *MDJ* = earnings management measured by Modified Jones model, *COM* = real activities earnings management measured by Roychowdhury's model, *REP* = reputation, *LOS* = losses, *ALT* = financial distress measured by Altman model, *ETR* = effective tax rate, *ROA* = return on assets, *EPS* = earnings per share, *SZE* = total assets, *LEV* = total long-term.

Significance is based on a two-tailed test, *, ** and *** represent significance level at 10%, 5% and 1%, respectively.

Observation is across the five-year period for 69 companies (345 financial reports) comprising 38 Shariah-compliant companies (190 financial reports) and 31 non-Shariah-compliant companies (155 financial reports).

4.2.1 Shariah-compliant on Earnings Management

The results in Table 4 show that *MDJ* has a negative significant relationship with *SHA* (Model 1 with coefficient -.087, *z*-stats -2.265, *p*-value<.05). This implies that Shariah-compliant companies were inclined towards engaging in earnings-decreasing activities. On the other hand, this study found that Shariah-compliant companies tend to manage their earnings by making alterations to the level of discretionary expenditures. However, *COM* and *SHA* relationship is statistically not significant (Model 3 with coefficient .035 and *z*-stats 1.263). The findings observed in the current study are different from those found by Kim et al. (2012). Although Kim et al. (2012) had used the same model they found that socially-responsible companies were less involved in real activities earnings management. Undoubtedly, Shariah-compliant companies are expected to promote good practices for the public good (*maslahah*) (Darus et al., 2013). Following Shariah values, these companies would be concerned with their stakeholders' interest and so would provide quality reporting. Hypothetically, they should not manipulate the accounting information for the sake of impressing their stakeholders by fulfilling the high expectations of the stakeholders. Based on the outcome of this study, hypothesis H_1 could not be accepted or rejected because this study does not have enough evidence.

4.2.2 Reputation on Earnings Management

The results in Table 4 also show that *REP* has a significant relationship with *MDJ* and *COM* for Models 1 until 4. This indicates that companies with high reputations engaged in earnings-decreasing practices (Model 1 with coefficient -.140, *z*-stats -3.583, *p*-value<.05) and this includes Shariah-compliant companies (Model 2 with coefficient -.128, *z*-stats -2.422, *p*-value<.001). Also, Shariah-compliant companies had engaged in real activities earnings management (Model 4 with coefficient .173, z-stats 5.661, p-value<.001). These results echo the outcome which states that managers tend to engage in strategies including unethical conducts to preserve company's image and reputation (Roychowdhury, 2006). It was observed that the Shariah-compliant companies were no exception to unethical conducts. This finding implies that the Shariah-compliant status of companies is ineffective in deterring the management from engaging in unethical conducts such as earnings management practices. In this regard, hypothesis H_2 is rejected.

4.2.3 Financial Distress on Earnings Management

Shariah-compliant companies that suffer losses have a negative significant relationship with real activities earnings management (Model 4 with coefficient -.103, *z*-stats -2.768, *p*-value<.001). This may indicate that Shariah-compliant companies are highly likely to engage in earnings management behaviour by manipulating company's discretionary expenditures. In addition, Shariah-compliant companies are found to be involved in earnings management behaviour using accrual (Model 2 with coefficient .187 and *z*-stats 1.554) and discretionary expenditures (Model 4 with coefficient .022, *z*-stats .317) in moments when they are financially distressed but the relationship are statistically not significant. In the financial crisis of 2008, managements were found to engage in unethical behaviour for 'good reasons'. Farooq and AbdelBari (2015) and Chia et al. (2007) found evidence that companies committed earnings management during the financial crisis by reporting less than what they have.

Moreover, Shariah-compliant companies that underpaid taxes (i.e., companies have an effective tax rate) are found to have a positive relationship with earnings management behaviour (Model 2 with coefficient .028 and *z*-stats 1.097; Model 4 with coefficient .022, *z*-stats 1.489). However, the relationships are statistically not significant. These findings may be used to support the claim that a company may use effective tax rates to meet the earnings target (Comprix, Mills, & Schmidt, 2012). To avoid political costs and attention from stakeholders, the management engaged in earnings management practices and forsake the ethical considerations (Yip, Van Staden, & Cahan, 2011). From these results, hypothesis H_3 can be partially accepted.

4.2.4 Financial Performance on Earnings Management

As predicted, companies with better financial performance (proxied by *ROA*) have a positive significant impact on earnings management activities, specifically in discretionary accruals (Model 1 with coefficient .006, *z*-stats 1.888, *p*-value<.05). Shariah-compliant companies with high ROA are also found to be engaged in earnings management behaviour (Model 2, where the coefficient and *z*-stats increase to .010 and 2.055 respectively with similar *p*-value<.05). This may indicate that Shariah-compliant companies with better financial performance (*ROA*) are more prone to practise accrual earnings management, particularly in earnings-increasing practices. In contrast, companies in general, are not involved in real activities earnings management (Model 3 with coefficient -.005, *z*-stats 1.975, *p*-value<.05).

The second proxy for financial performance, *EPS* was found to have a positive relationship with companies' earnings management activities. However, Shariah-compliant companies with low *EPS* have a small interest in practising real activities earnings management by reporting less on expenditures than what they actually have (Model 4 with coefficient -.060, *z*-stats 1.831, *p*-value<.10). The findings in this study support the notion that companies with better financial performance are more inclined towards earnings management practices. Hence, Shariah-compliant status has no effect in deterring companies from practising such unethical conduct (see, Hamdi & Zarai, 2012; Alsaadi et al., 2017). From these results, hypothesis H_4 can be partially accepted.

4.2.5 Control Variables on Earnings Management

Geraldina, Rossieta and Utama (2015) suggested that smaller companies have a higher tendency to engage in unethical conducts such as window dressing. Although higher total asset companies correspond to earnings-increasing (Model 2 with coefficient .092, *z*-stats 1.890, *p*-value<.10), Shariah-compliant companies with high leverage also tend to engage in earnings-increasing through accruals (Model 2 with coefficient .197, *z*-stats 1.819, *p*-value<.10). They managed the company's discretionary expenditures (Model 4 with coefficient -.119, *z*-stats -1.901, *p*-value<.05). Similar findings can also be observed in other recent research (see, Bozzolan, Fabrizi, Mallin, & Michelon, 2015; Wang et al., 2016; Huang & Sletten, 2017; Godsell, Welker, & Zhang, 2017).

5. Conclusion

Islamic values and principles promoted in Shariah practices in business should deter the management from carrying out unethical conducts. However, this study found contrary results. Thus, it urges academicians and practitioners to improve Islamic accounting practices and reporting. The findings obtained from this study suggest that Shariah-compliant companies may not practise the Islamic ethical values holistically. Clearly, there are possibilities for Shariah-compliant companies to become involved in earnings management practices. The company's reputation, financial distress and financial performance are factors that motivate the companies to engage in such unethical practices. These findings can be explained by using the fraud diamond theory since management decision-making relies on the existence of opportunities, the capability of the manager, realisation and pressure/incentives.

In general, the findings generated from this study contribute to the augmentation of literature and it extends to the reporting practices related to earnings management activities. Nonetheless, this study is also constrained by several limitations. This study had examined the data of the top 100 PLCs from the years 2010 to 2014 only. Future research should consider extending this study to more current years and to examine more companies. Future researchers may want to explore measurements other than *ROA* and *EPS* to measure the company's financial performance. The results of this study also lead to another research question: if the earnings reported have been manipulated, how accurate is the *ROA* or *EPS* in representing a company's financial performance? This may be considered by future researchers.

References

Abdullah, S.N., Halim, N.F.C.A., & Nelson, S.P. (2014). The impact of new regulations on earnings quality among Malaysian firms. *International Journal of Economics, Management and Accounting, 22*(2), 21-68.

Ali, S.M., Salleh, N.M., & Hassan, M.S. (2008). Ownership structure and earnings management in Malaysian listed companies: The size effect. *Asian Journal of Business and Accounting, 1*(2), 89-116.

Alkdai, H.K.H., & Hanefah, M.M. (2012). Audit committee characteristics and earnings management in Malaysian Shariah-compliant companies. *Business and Management Review, 2*(2), 52-61.

Alsaadi, A., Ebrahim, M.S., & Jaafar, A. (2017). Corporate social responsibility, Shariah-compliance, and earnings quality. *Journal of Financial Services Research, 51*(2), 169-194. http://dx.doi.org/10.1007/s10693-016-0263-0

Altman, E.I. (2005). An emerging market credit scoring system for corporate bonds. *Emerging Markets Review, 6*(4). 311-323, http://dx.doi.org/10.1016/j.ememar.2005.09.007

Altman, E.I., Hartzell, J., & Peck, M. (1998). Emerging market corporate bonds — a scoring system. In R.M. Levich (Eds.), *Emerging market capital flows: Proceedings of a conference held at the Stern School of Business* (pp. 391-400). New York, NY: Springer. http://dx.doi.org/10.1007/978-1-4615-6197-2_25

American Institute of Certified Public Accountants (AICPA). (2002). *Statement on auditing standards (SAS) 99: Consideration of fraud in a financial statement audit*. Available at https://www.aicpa.org

Amoah, N.Y., Anderson, A., Bonaparte, I., & Muzorewa, S. (2017). Managerial opportunism and real activities manipulation: Evidence from option backdating firms. *Review of Accounting and Finance, 16*(3), 282-302. http://dx.doi.org/10.1108/RAF-12-2014-0144

Arya, A., Glover, J.C., & Sunder, S. (2003). Are unmanaged earnings always better for shareholders? *Accounting Horizons, 17*(s-1), 111-116. http://dx.doi.org/ 10.2139/ssrn.322260

Azeez, A.A. (2015). Corporate governance and firm performance: Evidence from Sri Lanka. *Journal of Finance & Bank Management, 3*(1), 180-189. http://dx.doi.org/10.15640/jfbm.v3n1a16

Bansal, P., & Clelland, I.J. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *The Academy of Management Journal, 47*(1), 93-103. http://dx.doi.org/10.2307/20159562

Bartov, E., Gul, F.A., & Tsui, J.S. (2000). Discretionary-accruals models and audit qualifications. *Journal of Accounting and Economics, 30*(3), 421-452. http://dx.doi.org/10.1016/s0165-4101(01)00015-5

Botsari, A., & Meeks, G. (2008). Do acquirers manage earnings prior to a share for share bid? *Journal of Business Finance and Accounting, 35*(5-6), 633-670. http://dx.doi.org/10.1111/j.1468-5957.2008.02091.x

Bozzolan, S., Fabrizi, M., Mallin, C.A., & Michelon, G. (2015). Corporate social responsibility and earnings quality: International evidence. *International Journal of Accounting, 50*(4), 361-396. http://dx. doi.org/10.1016/j.intacc. 2015.10.003

Brammer, S., & Pavelin, S. (2004). Building a good reputation. *European Management Journal, 22*(6), 704-713. http://dx.doi.org/10.1016/j.emj.2004. 09.033

Bruns Jr, W.J., & Merchant, K.A. (1990). The dangerous morality of managing earnings. *Strategic Finance, 72*(2), 22-25.

Burgstahler, D.C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review, 81*(5), 983-1016. http://dx.doi.org/10.2308/accr. 2006.81.5.983

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics, 24*(1), 99-126. http://dx.doi.org/10.1016/S0165-4101(97)00017-7

Cao, Y., Myers, L.A., & Omer, T.C. (2012). Does company reputation matter for financial reporting quality? Evidence from restatements. *Contemporary Accounting Research, 29*(3), 956-990. http://dx.doi.org/10.1111/j.1911-3846.2011.01137.x

Chia, Y.M., Lapsley, I., & Lee, H.W. (2007). Choice of auditors and earnings management during the Asian financial crisis. *Managerial Auditing Journal, 22*(2), 177-196. http://dx.doi.org/10.1108/02686900710718672

Chih, H.L., Shen, C.H., & Kang, F.C. (2008). Corporate social responsibility, investor protection, and earnings management: Some international evidence. *Journal of Business Ethics, 79*(1), 179-198. http://dx.doi.org/ 10.1007/s10551-007-9383-7

Comprix, J., Mills, L.F., & Schmidt, A.P. (2012). Bias in quarterly estimates of annual effective tax rates and earnings management. *The Journal of the American Taxation Association, 34*(1), 31-53. http://dx.doi.org/10.2308/atax-10152

Cornett, M., Marcus, A., & Tehranian, H. (2008). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics, 87*(2), 357-373. http://dx.doi.org/10.1016/j.jfineco.2007.03.003

Dadgar, Y., & Naderi, M. (2009). *Corporate governance in capital market of Muslim countries* (SSRN Working Paper Series). http://dx.doi.org/10.2139/ssrn.1452818

Darus, F., Yusoff, H., Abang Naim, D.M., Mohamed Zain, M., Amran, A., Fauzi, H., & Purwanto, Y. (2013). Islamic corporate social responsibilities (i-CSR) framework from perspective of Maqasid al-Syariah and Maslahah principles. *Issues in Social and Environmental Accounting, 7*(2), 102-112. http://dx.doi.org/10.22164/isea.v7i2.77

DeAngelo, L.E. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review, 61*(3), 400-420.

Dechow, P., Ge, W., & Schrand, C.M. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics, 50*(2), 344-401. http://dx.doi.org/10.1016/j.jacceco.2010.09.001

Dechow, P.M., Sloan, R.G., & Sweeney, A.P. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research, 13*(1), 1-36. http://dx. doi.org/10.1111/j.1911-3846.1996.tb00489.x

DeFond, M.L. (2010). Earnings quality research: Advances, challenges and future research. *Journal of Accounting and Economics, 50*(2), 402-409. http://dx.doi.org/10.1016/j.jacceco.2010.10.004

DeFond, M.L., & Subramanyam, K.R. (1998). Auditor changes and discretionary accruals. *Journal of Accounting and Economics, 25*(1), 35-67. http://dx. doi.org/10.1016/s0165-4101(98)00018-4

Desai, M.A., & Dharmapala, D. (2009). Earnings management, corporate tax shelters, and book-tax alignment. *National Tax Journal, 62*(1), 169-186. http://dx.doi.org/10.17310/ntj.2009.1.08

Ding, R., Li, J., & Wu, Z. (2018). Government affiliation, real earnings management, and firm performance: The case of privately held firms. *Journal of Business Research, 83*(C), 138-150. http://dx.doi.org/10.1016/j.jbusres.2017.10.011

Du Jardin, P., Veganzones, D., & Séverin, E. (2017). Forecasting corporate bankruptcy using accrual-based models. *Computational Economics, 51*(4), 1-37. http://dx.doi.org/10.1007/s10614-017-9681-9

Dyreng, S.D., Mayew, W.J., & Williams, C.D. (2012). Religious social norms and corporate financial reporting. *Journal of Business Finance and Accounting, 39*(7-8), 845-875. http://dx.doi.org/10.1111/j.1468-5957.2012.02295.x

Elliott, R.R., & Willingham, J.J. (1980). *Management fraud: Detection and deterrence*. New York, NY: Petrocelli Books.

Farooq, O., & AbdelBari, A. (2015). Earnings management behaviour of Shariah-compliant firms and non-Shariah-compliant firms: Evidence from the MENA region. *Journal of Islamic Accounting and Business Research, 6*(2), 173-188. http://dx. doi.org/10.1108/jiabr-07-2013-0021

Farrell, S. (2015, 21 July). The world's biggest accounting scandals. *The Guardian*. Available at https://www.theguardian.com

Filip, A., & Raffournier, B. (2014). Financial crisis and earnings management: The European evidence. *The International Journal of Accounting, 49*(4), 455-478. http://dx.doi.org/10.1016/j.intacc.2014.10.004

Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal, 33*(2), 233-258. http://dx.doi.org/10.2307/256324

Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary disclosure, earnings quality, and cost of capital. *Journal of Accounting Research, 46*(1), 53-99. http://dx.doi.org/10.1111/j.1475-679x.2008.00267.x

Franceschetti, B.M. (2018a). Does financial crisis cause earnings management? In B.M. Franceschetti, *Financial crises and earnings management behavior* (pp. 119-161). Cham, Germany: Springer. http://dx.doi.org/10.1007/978-3-319-54121-1_5

Franceschetti, B.M. (2018b). Financial crisis as a major cause of earnings management: Theoretical background and literature review. In B.M. Franceschetti, *Financial crises and earnings management behavior* (pp. 103-117). Cham, Germany: Springer. http://dx. doi.org/10.1007/978-3-319-54121-1_4

Geraldina, I., Rossieta, H., & Utama, S. (2015). Motives of customer deposits window-dressing in Indonesian commercial banks. *Asian Journal of Business and Accounting, 8*(2), 67-90.

Godsell, D., Welker, M., & Zhang, N. (2017). Earnings management during antidumping investigations in Europe: Sample-wide and cross-sectional evidence. *Journal of Accounting Research, 55*(2), 407-457. http://dx. doi.org/10.1111/1475-679x.12166

Gordon, J.N. (2002). What Enron means for the management and control of the modern business corporation: Some initial reflections. *University of Chicago Law Review, 69*(3), 1233-1250. http://dx.doi.org/10.2307/1600646

Grant, C.T., DePree Jr, C.M., & Grant, G.H. (2000). Earnings management and the abuse of materiality. *Journal of Accountancy, 190*(3), 41-44.

Grougiou, V., Leventis, S., Dedoulis, E., & Owusu-Ansah, S. (2014). Corporate social responsibility and earnings management in US banks. *Accounting Forum, 38*(3), 155-169. http://dx.doi.org/10.1016/j.accfor.2014.05.003

Guay, W.R., Kothari, S.P., & Watts, R.L. (1996). A market-based evaluation of discretionary accrual models. *Journal of Accounting Research, 34*, 83-105. http://dx.doi.org/10.2307/2491427

Guyot, A. (2011). Efficiency and dynamics of Islamic investment: Evidence of geopolitical effects on Dow Jones Islamic market indexes. *Emerging Markets Finance and Trade, 47*(6), 24-45. http://dx.doi.org/10.2753/ree1540-496x470602

Hail, L., & Leuz, C. (2006). International differences in the cost of equity capital: Do legal institutions and securities regulation matter? *Journal of Accounting Research, 44*(3), 485-531. http://dx.doi.org/10.1111/j.1475-679x.2006.00209.x

Hamdi, F.M., & Zarai, M.A. (2012). Earnings management to avoid earnings decreases and losses: Empirical evidence from Islamic banking industry. *Research Journal of Finance and Accounting, 3*(3), 88-107.

Hassan, S., & Ahmed, A. (2012). Corporate governance, earnings management and financial performance: A case of Nigerian manufacturing firms. *American International Journal of Contemporary Research, 2*(7), 214-226.

Healy, P.M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics, 7*(1-3), 85-107. http://dx.doi.org/10.1016/0165-4101(85)90029-1

Healy, P.M., & Palepu, K.G. (2003). The fall of Enron. *The Journal of Economic Perspectives, 17*(2), 3-26. http://dx.doi.org/10.1257/089533003765888403

Hemingway, C.A., & Maclagan, P.W. (2004). Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics, 50*(1), 33-44. http://dx.doi.org/10.1023/b:busi.0000020964.80208.c9

Hinkel, T.P., & Hoffman, B.W. (2017). Meeting earnings benchmarks via real activities manipulation: Debt market effects. *Journal of Accounting, Auditing and Finance*, 1-30. http://dx.doi.org/10.1177/0148558X17742568

Hossain, D.M., Karim, M.K.N.A., & Eddine, C.O.H. (2014). Earnings Management and Islam. *Labuan e-Journal of Muamalat and Society, 8*, 87-97.

Huang, P., Louwers, T.J., Moffitt, J.S., & Zhang, Y. (2008). Ethical management, corporate governance, and abnormal accruals. *Journal of Business Ethics, 83*(3), 469-487. http://dx.doi.org/10.1007/s10551-007-9632-9

Huang, S., & Sletten, E. (2017). Does litigation encourage or deter real earnings management? *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.2970311

Ibrahim, M.S, Darus, F., Yusoff, H., & Muhamad, R. (2015). Analysis of earnings management practices and sustainability reporting for corporations that offer Islamic products & services. *Procedia Economics and Finance, 28*, 176-182. http://dx.doi.org/10.1016/s2212-5671(15)01098-9

Jaggi, B., & Lee, P. (2002). Earnings management response to debt covenant violations and debt restructuring. *Journal of Accounting, Auditing and Finance, 17*(4), 295-324. http://dx.doi.org/10.1177/0148558x0201700402

Johnson, E.N., Fleischman, G.M., Valentine, S., & Walker, K.B. (2012). Managers' ethical evaluations of earnings management and its consequences.

Contemporary Accounting Research, 29(3), 910-927. http://dx.doi.org/10.1111/j.1911-3846.2011.01135.x

Jones, J.J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2), 193-228. http://dx.doi.org/10.2307/2491047

Jones, M.J. (2011). *Creative accounting, fraud and international accounting scandals*. Chicester, England: John Wiley & Sons.

Kaplan, S.E. (2001). Ethically related judgments by observers of earnings management. *Journal of Business Ethics, 32*(4), 285-298. http://dx.doi.org/10.1023/A:1010600802029

Kennedy, E.J., & Lawton, L. (1998). Religiousness and business ethics. *Journal of Business Ethics, 17*(2), 163-175. http://dx.doi.org/10.1023/A:1005747511116

Kim, Y., Park, M.S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review, 87*(3), 761-796. http://dx.doi.org/10.2308/accr-10209

Kothari, S.P., Leone, A.J., & Wasley, C.E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39*(1), 163-197. http://dx.doi.org/10.1016/j.jacceco.2004.11.002

Kurmi, M.K., & Rakshit, D. (2017). Information content of EVA and traditional accounting based financial performance measures in explaining corporation's change of market value. *International Journal of Research in Finance and Marketing, 7*(2), 1-14.

Lee, T.A., Ingram, R.W., & Howard, T.P. (1999). The difference between earnings and operating cash flow as an indicator of financial reporting fraud. *Contemporary Accounting Research, 16*(4), 749-786. http://dx.doi.org/10.1111/j.1911-3846.1999.tb00603.x

Li, F., Abeysekera, I., & Ma, S. (2011). Earnings management and the effect of earnings quality in relation to stress level and bankruptcy level of Chinese listed firms. *Corporate Ownership and Control, 9*(1-3), 366-391. http://dx.doi.org/10.22495/cocv9i1c3art2

Li, H., Pincus, M., & Rego, S.O. (2008). Market reaction to events surrounding the Sarbanes-Oxley Act of 2002 and earnings management. *The Journal of Law and Economics, 51*(1), 111-134. http://dx.doi.org/10.1086/588597

Lo, K. (2008). Earnings management and earnings quality. *Journal of Accounting and Economics, 45*(2), 350-357. http://dx.doi.org/10.1016/j.jacceco.2007.08.002

Longenecker, J.G., McKinney, J.A., & Moore, C.W. (2004). Religious intensity, evangelical Christianity, and business ethics: An empirical study. *Journal of Business Ethics, 55*(4), 371-384. http://dx.doi.org/10.1007/s10551-004-0990-2

Loomis, C.J. (1999). Lies, damned lies, and managed earnings the crackdown is here. The nation's top earnings cop has put corporate America on notice: Quit cooking the books. Cross the line, you may do time. *Fortune, 140*(3), 74-92.

Lourenço, I.C., Rathke, A., Santana, V., & Branco, M.C. (2018). Corruption and earnings management in developed and emerging countries. *Corporate Governance: The International Journal of Business in Society, 18*(1), 35-51. http://dx.doi.org/10.1108/CG-12-2016-0226

Marai, A., & Pavlović, V. (2013). Earnings management vs financial reporting fraud – key features for distinguishing. *Economics and Organization, 10*(1), 39-47.

Martínez-Ferrero, J., Banerjee, S., & García-Sánchez, I.M. (2016). Corporate social responsibility as a strategic shield against costs of earnings management practices. *Journal of Business Ethics, 133*(2), 305-324. http://dx.doi.org/10.1007/s10551-014-2399-x

Melo, T., & Garrido-Morgado, A. (2012). Corporate reputation: A combination of social responsibility and industry. *Corporate Social Responsibility and Environmental Management, 19*(1), 11-31. http://dx.doi.org/10.1002/csr.260

Merchant, K.A., & Rockness, J. (1994). The ethics of managing earnings: An empirical investigation. *Journal of Accounting and Public Policy, 13*(1), 79-94. http://dx.doi.org/10.1016/0278-4254(94)90013-2

Mohamad, M.H.S., Abdul Rashid, H.M., & Mohammed Shawtari, F.A. (2012). Corporate governance and earnings management in Malaysian government linked companies: The impact of GLCs' transformation policy. *Asian Review of Accounting, 20*(3), 241-258. http://dx.doi.org/10.1108/13217341211263283

Mouselli, S., Jaafar, A., & Hussainey, K. (2012). Accruals quality vis-à-vis disclosure quality: Substitutes or complements? *British Accounting Review, 44*(1), 36-46. http://dx.doi.org/10.1016/j.bar.2011.12.004

Mulyadi, M.S., & Anwar, Y. (2015). Corporate governance, earnings management and tax management. *Procedia - Social and Behavioral Sciences, 177*, 363-366. http://dx.doi.org/10.1016/j.sbspro.2015.02.361

Noreen, E. (1988). The economics of ethics: A new perspective on agency theory. *Accounting, Organizations and Society, 13*(4), 359-369. http://dx.doi.org/10.1016/0361-3682(88)90010-4

Omar, N., Koya, R.K., Sanusi, Z.M., & Shafie, N.A. (2014). Financial statement fraud: A case examination using Beneish Model and ratio analysis. *International Journal of Trade, Economics and Finance, 5*(2), 184-186. http://dx. doi.org/10.7763/ijtef.2014.v5.367

Omer, T.C., Bedard, J.C., & Falsetta, D. (2006). Auditor-provided tax services: The effects of a changing regulatory environment. *The Accounting Review, 81*(5), 1095-1117. http://dx.doi.org/10.2308/accr.2006.81.5.1095

Orlitzky, M., Schmidt, F.L., & Rynes, S.L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies, 24*(3), 403-441. http://dx. doi.org/10.1177/0170840603024003910

Pallant, J. (2007). *SPSS survival manual: A step by step guide to data analysis using SPSS for windows* (version 15). Sydney, NSW: Allen and Unwin.

Parfet, W.U. (2000). Accounting subjectivity and earnings management: A preparer perspective. *Accounting Horizons, 14*(4), 481-488. http://dx.doi.org/10.2308/acch.2000.14.4.481

Perez, D., Salas-Fumas, V., & Saurina, J. (2008). Earnings and capital management in alternative loan loss provision regulatory regimes. *European Accounting Review, 17*(3), 423-445. http://dx.doi/org/10.1080/09638180802016742

Perols, J.L., & Lougee, B.A. (2011). The relation between earnings management and financial statement fraud. *Advances in Accounting, 27*(1), 39-53, http://dx.doi.org/10.1016/j.adiac.2010.10.004

Pierre, K.St., & Anderson, J.A. (1984). An analysis of the factors associated with lawsuits against public accountants. *The Accounting Review, 59*(2), 242-263.

PricewaterhouseCoopers (PwC) (2013). *Islamic finance – creating value*. Available at https://www.pwc.com

Prior, D., Surroca, J., & Tribó, J.A. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corporate Governance: An International Review, 16*(3), 160-177. http://dx.doi.org/10.1111/j.1467-8683.2008.00678.x

Rawls, J. (1972). *A theory of justice*. Oxford: Oxford University Press.

Rice, G. (1999). Islamic ethics and the implications for business. *Journal of Business Ethics, 18*(4), 345-358. http://dx.doi.org/10.1023/A:1005711414306

Ronen, J., & Yaari, V. (2008). *Earnings management: Emerging insights in theory, practice, and research*. New York, NY: Springer.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics, 42*(3), 335-337. http://dx.doi.org/10.1016/j.jacceco.2006.01.002

Saleh, N.M., & Ahmed, K. (2005). Earnings management of distressed firms during debt renegotiation. *Accounting and Business Research, 35*(1), 69-86. http://dx.doi.org/10.1080/00014788.2005.9729663

Schipper, K. (1989). Commentary on earnings management. *Accounting Horizons, 3*(4), 91-102.

Securities Commission Malaysia (SC) (2014). *List of Shariah-compliant securities by SC's Shariah Advisory Council*. Available at https://www.sc.com.my

Securities Commission Malaysia (SC) (2015). *Malaysian capital market grew to RM2.76 trillion in 2014*. Available at https://www.sc.com.my

Septiari, D., & Maruli, M. (2017). Earnings management behaviour: The role of pressure on behaviour performance. *Asian Journal of Business and Accounting, 10*(2), 137-163.

Sheikh Obid, S.N., & Demikha, L. (2011). Earnings management: Islamic perspective. *Asia Pacific Journal of Accounting and Finance, 2*(1), 77-89.

Solomon, R.C. (1992). Corporate roles, personal virtues: An Aristotelean approach to business ethics. *Business Ethics Quarterly, 2*(3), 317-339. http://dx.doi.org/10.2307/3857536

Sutherland, E.H. (1940). White-collar criminality. *American Sociological Review, 5*(1), 1-12. http://dx.doi.org/10.2307/2083937

Thomas, J., & Zhang, X.J. (2001). Identifying unexpected accruals: A comparison of current approaches. *Journal of Accounting and Public Policy, 19*(4-5), 347-376. http://dx.doi.org/10.1016/s0278-4254(00)00016-8

U.S. Securities and Exchange Commission (SEC) (2011). *SEC charges Satyam Computer Services with financial fraud*. Available at https://www.sec.gov/

Vinciguerra, B., & O'Reilly-Allen, M. (2004). An examination of factors influencing managers' and auditors' assessments of the appropriateness of an accounting treatment and earnings management intentions. *American Business Review, 22*(1), 78-87.

Vladu, A.B., Amat, O., & Cuzdriorean, D.D. (2017). Truthfulness in accounting: How to discriminate accounting manipulators from non-manipulators. *Journal of Business Ethics, 140*(4), 633-648. http://dx.doi.org/10.1007/s10551-016-3048-3

Wallace, W.A. (1995). *Auditing*. Cincinnati, OH: South-Western College Publishing.

Wan Ismail, W.A., Kamarudin, K.A., & Sarman, S.R. (2015). The quality of earnings in shariah-compliant companies: Evidence from Malaysia. *Journal of Islamic Accounting and Business Research, 6*(1), 19-41. http://dx.doi.org/10.1108/jiabr-03-2013-0005

Wang, X., Cao, F., & Ye, K. (2016). Mandatory corporate social responsibility (CSR) reporting and financial reporting quality: Evidence from a quasi-natural experiment. *Journal of Business Ethics, 149*(7), 1-22. http://dx. doi.org/10.1007/s10551-016-3296-2

Wardhani, R., & Anggraenni, M. (2017). The effect of leverage and IFRS convergence on earnings management through real activities manipulation in Asia. *Asian Journal of Business and Accounting, 10*(1), 87-125.

Weil, R.L. (2009). Quality of earnings and earnings management: A primer for audit committee members. *The American Institute of Certified Public Accountants (AICPA)*, 1-3.

Wolfe, D.T., & Hermanson, D.R. (2004). The fraud diamond: Considering the four elements of fraud. *The CPA Journal, 74*(12), 38-42.

Yip, E., Van Staden, C., & Cahan, S. (2011). Corporate social responsibility reporting and earnings management: The role of political costs. *Australasian Accounting Business and Finance Journal, 5*(3), 17-34.

Young, S. (1999). Systematic measurement error in the estimation of discretionary accruals: An evaluation of alternative modelling procedures. *Journal of Business Finance and Accounting, 26*(7-8), 833-862. http://dx.doi.org/10.1111/1468-5957.00277

Zahra, S.A., Priem, R.L., & Rasheed, A.A. (2005). The antecedents and consequences of top management fraud. *Journal of Management, 31*(6), 803-828. http://dx.doi.org/10.1177/0149206305279598

Appendices

Appendix A: Modified Jones Model

$$TAC_{it} = (\Delta CA_{it} - \Delta CSH_{it}) - (\Delta CL_{it} - \Delta STD_{it}) \tag{1}$$

$$\left(\frac{TAC_{it}}{TA_{i,t-1}}\right) = \alpha_1\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{i,t-1}}\right) + \alpha_3\left(\frac{ERN_{i,t-1}}{TA_{i,t-1}}\right) + \varepsilon_{it} \tag{2}$$

$$NDAC_{it} = \hat{\alpha}_1\left(\frac{1}{TA_{i,t-1}}\right) + \hat{\alpha}_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{i,t-1}}\right) + \hat{\alpha}_3\left(\frac{ERN_{it}}{TA_{i,t-1}}\right) \tag{3}$$

$$DAC_{it} = \left(\frac{1}{TA_{i,t-1}}\right) - NDAC_{it} \tag{4}$$

where *TAC* represents the total accrual, *NDAC* represents the nondiscretionary accrual, *DAC* represents the discretionary accrual. ΔCA represents change in the company's current assets, ΔCSH represents change in cash, ΔCL represents change in current liabilities, ΔSTD represents change in short-term debt, TA represents total assets, ΔREV represents change in revenue, ΔREC represents change in receivables, *ERN* represents earnings, $\hat{\alpha}$ is coefficient value, ε is error term, *i* is company and *t* is year, respectively. Equation 1 is used to calculate the total accrual (*TAC*). Equations 2 to 4 are used to separate nondiscretionary accruals and discretionary accruals. The coefficient α_1, α_2 and α_3 are used into the Equation 3 tested using ordinary least squares (OLS) regression. This study uses the real number (is either positive or negative value) of discretionary accruals as the key analysis on earnings management practices. It can be either earnings-increasing (positive value) or earnings-decreasing (negative value) accruals (Kim et al., 2012).

Appendix B: Roychowdhury's Model

$$\left(\frac{OCF_{it}}{TA_{i,t-1}}\right) = \alpha_4\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_5\left(\frac{REV_{it}}{TA_{i,t-1}}\right) + \alpha_6\left(\frac{\Delta REV_{it}}{TA_{i,t-1}}\right) + \varepsilon_{it} \tag{1}$$

$$\left(\frac{COGS_{it}}{TA_{i,t-1}}\right) = \alpha_7\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_8\left(\frac{REV_{it}}{TA_{i,t-1}}\right) + \varepsilon_{it} \tag{2}$$

$$\left(\frac{\Delta INV_{it}}{TA_{i,t-1}}\right) = \alpha_9\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_{10}\left(\frac{\Delta REV_{it}}{TA_{i,t-1}}\right) + \alpha_{11}\left(\frac{\Delta REV_{i,t-1}}{TA_{i,t-1}}\right) + \varepsilon_{it} \quad (3)$$

$$\left(\frac{PRD_{it}}{TA_{i,t-1}}\right) = \alpha_{12}\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_{13}\left(\frac{REV_{it}}{TA_{i,t-1}}\right) + \alpha_{14}\left(\frac{\Delta REV_{it}}{TA_{i,t-1}}\right) + \alpha_{15}\left(\frac{\Delta REV_{i,t-1}}{TA_{i,t-1}}\right) + \varepsilon_{it} \quad (4)$$

$$\left(\frac{DISEXP_{it}}{TA_{i,t-1}}\right) = \alpha_{16}\left(\frac{1}{TA_{i,t-1}}\right) + \alpha_{17}\left(\frac{REV_{it}}{TA_{i,t-1}}\right) + \varepsilon_{it} \quad (5)$$

$$COM = {}^{Abn}OCF - {}^{Abn}PRD + {}^{Abn}DISEXP \quad (6)$$

where *OCF* represents company's operating cash flow, *REV* represents company's revenue, ΔREV represents change in revenue, *TA* represents total assets, *COGS* represents cost of goods sold, ΔINV represents change in inventories, *PRD* represents production costs, *DISEXP* represents discretionary expenses, ε is error term, *i* is company and *t* is year, respectively. Actual operating cash flow minus its abnormal level is calculated using estimated coefficient in Equation 1. Production costs are defined as the sum of the cost of goods sold and changes in inventory. Equation 2 is a linear function of contemporaneous sales to measure the level of abnormality in the cost of goods sold. Equation 3 is a linear function of the contemporaneous and lagged change in the sale. It is to measure the level of abnormality in inventory. Then, by using Equations 2 and 3, production costs are the sum of the cost of goods sold and changes in inventory. The normal level of production costs is estimated using Equation 4. The normal level of discretionary expenses is the sum of research and development expenses, advertising expenses, selling, general and administrative expenses using the following linear function in Equation 5. Finally, Equation 6 is used to determine the real activities earnings management. Real activities earnings management take place when the management alters the level of discretionary expenditures, either by deviations from operating and investing activities and deviations from financing activities. This study uses the real number (either positive or negative value) as the alteration may increase (positive) and decrease (negative) expenditures value.

Appendix C: Altman Model for Emerging Market

The *x1* is to examine the company's working capital to the total assets. This to measure the company's ability to manage liquidity.

$$x1 = \left(\frac{CA_{it} - CL_{it}}{TA_{it}}\right) \quad (1)$$

The *x2* is to examine the retained earnings to total assets, to measure company's cumulative profitability.

$$x2 = \left(\frac{ERN_{it}}{TA_{it}}\right) \quad (2)$$

The *x3* is to examine the company's ability to generate profits from its assets base. This to measure the company's survivability and the level of productivity.

$$x3 = \left(\frac{EBIT_{it}}{TA_{it}}\right) \quad (3)$$

The *x4* is to examine stockholders' equity to total liabilities. A low score indicating high probabilities for bankruptcy.

$$x4 = \left(\frac{MVE_{it}}{TL_{it}}\right) \quad (4)$$

$$Z\text{-}score = 3.25 + 6.56(x1) + 3.26(x2) + 6.72(x3) + 1.05(x4) \quad (5)$$

where *CA* represents company's current assets, *CL* represents current liabilities, *TA* represents total assets, *ERN* represents company's retained earnings, *EBIT* represents earnings before taxes and interest, *MVE* represents the market value of equity, *TL* represents total liabilities, *i* is company and *t* is the year, respectively. According to Altman (2005), a Z-score over 2.6 indicates the company is healthy and financially sound, Z-score at between 1.1 to 2.6 indicates the company is in a deteriorated tenancy and further weaknesses will lead to a serious problem, Z-score below 1.1 indicates the company is unhealthy and in danger of insolvency. This study uses indicator variables of 3, 2 and 1 for companies whose finance is healthy, deteriorating and unhealthy respectively.

National Differences in Capital Budgeting Systems: A Comparison between Indonesian and Australian Firms

Peter Graham* and Suneeta Sathye

ABSTRACT

Manuscript type: Research paper.
Research aims: This study examines the impact of cross-cultural differences on capital budgeting systems.
Design/ Methodology/ Approach: Drawing on the contingency theory, 67 non-financial firms listed in Indonesia and Australia were analysed on a comprehensive range of capital budgeting systems.
Research findings: The findings support our predictions that relative to Australian firms, the Indonesian firms were found to emphasise more on sophisticated capital budgeting systems (e.g. real options). The results seem to be driven by Indonesia's higher level of perceived environmental uncertainty coupled with Sharia governance rules that aim to mitigate risky transactions. This study also provides evidence to show that the emphasis on sophisticated capital budgeting systems was driven by firm size and finance managers' level of education attainment.
Theoretical contributions/ Originality: Prior research has documented an incomplete picture of the link between national culture and capital budgeting systems. This is attributed to the lack of the development of contextual foundations for looking at cross-cultural differences followed by the narrow range of capital budgeting systems being considered in research.
Practitioner/ Policy implications: The findings of this study reflect the capital budgeting practices of Indonesia and Australia. The

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findings are important for practitioners who wish to evaluate project investments in these two countries.
Research limitation: Future research should consider looking into how Sharia impacts the use of capital budgeting systems and the performance effects of using different approaches.

Keywords: Capital Budgeting Systems, National Culture, Indonesia, Australia, Environmental Uncertainty
JEL Classification: M41

1. Introduction

The contingency theory has been widely applied in business and finance research as a means to observe various phenomena of practices. Drawing on its applicability, this study examines the impact of cross-cultural differences on capital budgeting systems (CBS). Focusing on two countries with different values but have immense prospects for worldwide commerce, this study aims to uncover whether or not there is a significant difference in the use of CBS practices between Indonesia and Australia.

A CBS is a package of formal practices that are used by firms throughout the process of decision-making while appraising project investments (Farragher, Kleiman, & Sahu, 2001). CBS practices encompass an assortment or a multiplicity of items. Researchers (Chittenden & Derregia, 2015; Kannadhasan & Nandagopal, 2010; Chen, 2008; Alkaraan & Northcott, 2013) classify these practices under four headings: capital budgeting techniques (CBT) which are financial techniques used to evaluate project investments (Chittenden & Derregia, 2015); risk management techniques (RMT) which supplement the capital budgeting techniques (CBT) by appraising the uncertainty linked with project investments (Kannadhasan & Nandagopal, 2010); non-financial information (NFI) which provides qualitative information that can be used to supplement the project investment decisions (Chen, 2008) and capital budgeting procedures (CBP) which offer formal structures and processes that are beneficial towards decision-making and which can be used throughout the project investment lifespan (Alkaraan & Northcott, 2013).

CBS may be classified as either naïve (e.g. payback period) or sophisticated (e.g. probability analysis) (Ho & Pike, 1998). Sophisticated CBS has long been acclaimed as the preferred approach for evaluating project investment decisions (Pike, 1988). Over time, a proliferation of research (Chittenden & Derregia, 2015; Verbeeten, 2006) has provided empirical evidence which support the effectiveness of sophisticated CBS. Although the benefits of sophisticated CBS have been asserted by proponents, studies (Hermes, Smid, & Yao, 2007; Truong, Partington & Peat, 2008) have also reported a significant variation in CBS practices across countries. For example, Asian and European firms have traditionally selected naïve CBT (Hermes, Smid, & Yao, 2007; Sandahl & Sjögren, 2003) as their preferred approach while Anglo-American firms have progressively been selecting sophisticated CBT (Haka, 2006; Truong, Partington, & Peat, 2008). Studies (Haka, 2006; Leon, Isa, & Kester, 2008) seem to suggest that fewer firms choose sophisticated RMT in these settings.

The variation in CBS practices across countries can be attributed to various reasons. One of these can be traced to the respective country's difference in economic development. Hermes et al. (2007) found that Dutch firms employed more sophisticated CBS when compared to Chinese firms. This outcome is also supported by other studies (Andrés, Fuente, & San-Martin, 2015; Benetti, Decourt, & Terra, 2007; Yepes & Cuartas, 2014). Although such studies provide valuable insights into the engagement of sophisticated CBS within the business world of investments, it appears that few firms in developed countries have been observed to use sophisticated CBS practices such as RMT (Alkaraan & Northcott, 2013; Rossi, 2014). The work of Andor, Mohanty, and Toth (2015) have documented significant variations in the use of CBS practices across countries of similar levels of economic development. This suggests that the variations may not be solely due to differences in economic development alone. Based on observations, we propose that part of the reason causing these variations in CBS practices may lie in the failure of firms to control other contingency factors such as environmental uncertainty and national culture (NC). Our arguments are justified as follow.

First, CBS practices may vary across countries because of environmental uncertainty. This is evidenced by the reports shown in several studies (Andrés et al., 2015; Andor et al., 2015; Hermes et al., 2007; Rossi, 2014; Yepes & Cuartas, 2014) which seemed to have overlooked the environmental uncertainty factor. The reason could be because such studies may not recognise that environmental uncertainty can impact cross-country variations in CBS practices, with a few exceptions (Brunzell, Liljeblom, & Vaihekoski, 2013; Liu, Meng, & Fellows, 2015).

Second, CBS practices may vary across countries due to the influence of the national culture of the country (Carr & Tomkins, 1998; Shields, Chow, Kato, & Nakagawa, 1991). National culture (NC) can be defined as the set of beliefs, customs, values and behaviours that exist within a sovereign country (Seymour-Smith, 1986) that sets it apart from other countries. Recent qualitative studies (Carr, Kolehmainen, & Mitchell, 2010; Graham & Sathye, 2017) have investigated the contextual reasons causing cross-cultural differences in CBS practices. Graham and Sathye (2017), for instance, drew on the economic, social, legal and political origins to develop a deeper and holistic underpinning of national differences in CBS practices when investigating Chief Financial Officers (CFOs) and their practices in Indonesia and Australia. The current study extends on Graham and Sathye's (2017) work by looking at environmental uncertainty, firm size and the education attainment of financial managers as factors that may be affecting variations in CBS practices between Indonesia and Australia. This study also extends the sample to include a larger group besides limiting its focus of investigation to only non-financial listed firms. The current study broadly contributes to contingency research on national differences in CBS practices by examining the contextual underpinnings of cross-cultural differences in CBS based on their economic, legal, political and social origins. These contextual differences that are attributed to national culture are then linked with the CBS in order to advance research in this area. To the best of our knowledge, relatively little empirical enquiry on this relationship has been documented in literature.

This study contributes to contingency research by investigating the link between NC and CBS. Prior research has primarily considered CBT and NFI practices which will also be examined in the current study. However, the current study makes headway by also including two other CBS categories of RMT and CBP. In contingency research, CBS is crucial for the effective appraisal of project investment decisions. Improving our knowledge on the use of RMT and CBP practices will assist managers in improving their decision-making thereby, enhancing their project performance.

This study examines the survey results of CBS practices noted by non-financial listed firms of Indonesia and Australia. It specifically aims to understand whether or not NC plays a role in determining the CBS practices applied. A survey was undertaken to collect data on CBS practices, perceived environmental uncertainty, manager education attainment and firm size. The findings indicate that managers in Indonesian firms regularly use sophisticated CBS practices unlike their Australian counterparts. Thus, it is suggested that differences in NC have a bearing on the results.

This paper comprises seven sections. Section 2 provides the background and rationale for the research setting. Section 3 contrasts the Indonesian and Australian contexts. Section 4 reviews the relevant literature. Section 5 establishes the research design and methodology. Section 6, presents the research findings and Section 7 concludes the study.

2. Background and Research Setting

This study contrasts Indonesian and Australian firms for several reasons. First, these two countries have intrinsically interesting settings given that they share neighbouring locations, have developed strong security and maritime agreements and both countries own the two largest economies in the region. The Australian Department of Foreign Affairs and Trade (DFAT) reported in 2015 that the bilateral trade relationship between Australia and Indonesia was worth over $A15 billion while bilateral investments between the two countries had approached $A10 billion. Second, despite the growing trade relations, leaders in both countries have noted in a joint statement that trade links have not achieved their full potentials (DFAT, 2017). To this end, leaders are committed to augmenting a comprehensive economic partnership so as to create new pathways for trade and investments. Third, since the announcement of the Islamic banking facility in Australia (AUSTRADE, 2010), Australian banks have begun positioning themselves so as to capitalise on the emerging Islamic finance market. The growth of the Sharia compliant banking and finance industry in Australia can further boost its trade and investment opportunities with Indonesia. This is because Indonesia has the world's largest Islamic population (AUSTRADE, 2010) and its legislative milieu is impacted by Sharia laws (National Committee of Corporate Governance, 2006; Fealy & White, 2008; Sakai, 2010). From the Islamic perspective, Sharia laws encourage the mitigation of risks. Since the CBS is used to estimate project outcomes that are impacted by risks, Sharia also informs the design of the CBS (Al-Ajmi, Saleh, & Hussain, 2011; Hamid, Craig, & Clarke, 1993).

3. Indonesian and Australian Contexts

Contingency research argues that the optimal design of a firm's management control system is contingent upon the characteristics of the business. In this regard, Indonesia and Australia have several cross-national differences that may influence the use of the CBS in the respective countries. For this purpose, we organised our discussions along three broad themes: economic development, environmental uncertainty and national culture. Tables 1 and 2 present a summary of our discussion.

As can be seen in Table 1, the two countries with huge commercial prospects are compared through seven factors that highlight their respective economic development.

From Table 2, it appears that Indonesia share some similarities with Australia in terms of unemployment but in other respects, both countries possess different characteristics as can be noted in the political contexts of corruption, religiosity, economic growth and others.

3.1 Economic Development

Prior literature (Andor et al., 2015; Hermes et al., 2007) has proposed that firms increasingly select more sophisticated CBS over time due to their improvements in economic development. These studies have also argued that the selection of CBS practices and the firm's economic development are related. It was claimed that firms from developing countries have access to lesser resources, lesser technology and lesser staff thus lesser opportunity for growth. Consequently, these firms resort to utilising less sophisticated CBS practices. Table 1 summarises the differences noted in the economic development between Indonesia and Australia. It is obvious that the Indonesian GDP per capita is substantially lower than that of Australia. Stark differences also persist in the education attainment and technological development between the two countries, with Australia having an edge in these two aspects. Although the situation in Indonesia seems to be experiencing faster levels of economic growth, it is still lagging behind Australia. Nonetheless, both countries have high penetration rates for mobile subscriptions with more than one subscription per person suggesting that technology is prevalent.

Table 1: Comparisons in Economic Development between Indonesia and Australia

	Indonesia	Australia
Economic development		
Real GDP % change (2015) [a b]	4.8%	2.4%
GDP per capita USD (2015) [a b]	$3,346.5	$51,118
Stock market capitalisation (USD) (2016) [c d]	$426 billion	$1.26 trillion
Education attainment (at least bachelor degree % total for people +25) [c d]	8.5%	29.8%
Government expenditure on education (% GDP) [c d]	3.3%	5.2%
Individuals using internet (% population) [c d]	22%	84.6%
Mobile subscriptions per 100 people [c d]	132.2	132.8

Note: [a] IHS (2017a); [b] IHS (2017b), [c] World Bank (2016a), [d] World Bank (2016b).

Table 2: Summary of the Indonesian and Australian Contexts

Context	Indonesia	Australia
Perceived public corruption	Higher corruption [a]	Lower corruption [b]
Government trade policies	Nationalistic approach [c]	Open and free approach [b f]
Legal system	Based on traditional custom, Sharia, Dutch and Indonesian rules. Going through reform [d]	Based on English models & replaced by Australian law over time. Stable legal system [e]
Economic growth	Higher 5-6% [a]	Lower 2-3% [b]
Inflation rates	Higher, volatile 2-12% [g]	Lower, stable 2-3% [g]
Foreign exchange rates	More volatile [a c]	Less volatile [b e]
Lending interest rates	Higher 12-14% [c]	Lower 6-8% [e]
Stock market growth	Faster growth [h]	Slower growth [i]
Unemployment	Around 6% [a]	Around 6% [b]
Religiosity	Predominantly Muslim [c]	Predominantly Christian [e]
Individual vs collective	Maintain social harmony, collective and cooperative [j]	Independent, assertive and autonomous [k]

Note: [a] EIU (2013a), [b] EIU (2013b), [c] IHS (2017a), [d] Lindsey (2008), [e] IHS (2017b), [f] Business Monitor (2018b), [g] OECD (2016), [h] World Bank (2016a), [i] World Bank (2016b), [j] Tsamenyi, Noormansyah and Uddin (2008), [k] Patel (2003).

3.2 *Environmental Uncertainty*

Researchers (Liu et al., 2015) have shown that cross national differences in environmental uncertainty have significant impacts on CBS practices. Since project investments involve the contemplation of uncertainty on financial predictions, it would seem that the CBS is among one of the management control practices that may be most strongly impacted by differences in uncertainty (Graham & Sathye, 2017). In this regard, our discussion is organised based on political, legal, economic and social foundations of uncertainty.

Researchers like Liu et al. (2015) and Brunzell et al. (2013) have noted that cross-national differences in political and legal uncertainty can impact on CBS practices. Therefore, the phenomenon is also likely to occur in Indonesia and Australia (Graham & Sathye, 2017) because both countries bear several national differences in culture. Indeed, Wihantoro, Lowe, Cooper and Manochin (2015) have described the political uncertainty in Indonesia as being so severe that it obstructs economic development. Over the years, however, the Indonesian government has undertaken democratic reforms (Harun, Van-Peursem, & Eggleton, 2015). The key planks of these democratic reforms include the creation of a well-organised bureaucracy and the devolution of government responsibilities to provinces (Wihantoro et al., 2015). Nevertheless, despite these reforms, uncertainty in the form of new corruption scandals continue to surface (Lindsey, 2008; IHS, 2017a) and corruption perceptions continue to persist on the high (Transparency International, 2017). It is further observed (Business Monitor, 2018a) that the domestic political scene of Indonesia is also characterised by a proliferation of minority parties that seem to be reducing the efficiency of trade and investments in the country besides dampening the business confidence and investments of prospective firms.

The outlook in Australia is slightly different. Its political and legal uncertainty is minor and more stable in comparison to Indonesia (Business Monitor, 2018b). Australia was also ranked the 13th lowest of 180 countries on a recent corruption perception index (Transparency International, 2017). Nonetheless, the federal government has been subjected to some political uncertainty due to regulation necessities in negotiating with minor political parties (IHS, 2017b).

Since the global financial crisis (GFC) of 2008, Indonesia has faced persistent economic problems which further fuel its political and other environment uncertainties. Inflation, for example, has been oscillating between 2 per cent to 12 per cent (OECD, 2016) while interest rates have remained comparatively higher than that of other developed economies. The capriciousness of its foreign exchange rate also continues to be of concern (IHS, 2017a). The situation in Australia, however, witnesses a GDP growth that has been modest since the GFC. Similarly, economic uncertainty has remained low with a relatively stable interest rate and inflation (OECD, 2016).

3.3 National Culture

Research (Carr et. al., 2010; Liu et. al., 2015) has consistently demonstrated the impact of cross-cultural differences in the selection of CBS practices. Such research also ponders on the best approach to use so as to capture and measure these cross-cultural differences more precisely. Consistent with prior research (Leach-Lopez, Stammerjohan, & McNair, 2007; Jansen, Zhang, Sobel, & Chowdury, 2009; Heidhues & Patel, 2011), the current study takes a holistic approach in measuring cross-cultural differences by contrasting economic, legal, political and social differences. In addition to this, we further highlight two characteristics of national culture that were identified from literature review. These two characteristics could influence cross-cultural differences when applying CBS practices in the two countries of Indonesia and Australia. They comprise individualism/collectivism and religiosity.

3.3.1 Individualism/Collectivism

Researchers (Efferin & Hopper, 2007; Reisinger & Turner, 1997) from anthropology and other disciplines and traditions have labelled Indonesia as a collectivistic culture. Collectivism reflects customs and preferences that are aimed at maintaining social harmony (*rukan*) (Tsamenyi et al., 2008). It also emphasises on moderating the expression of contentious opinions and the making of cooperative decisions (*gotong royong*) to achieve a consensus (*mufacat*) (Efferin & Hartono, 2015). As the pioneer in looking at cultures, Geertz (1973) noted that collective decision-making approaches have been used for centuries and these are based on agricultural traditions.

In contrast, Australian values centre on independence and autonomy which reflect an individualistic culture or individualism (Hofstede, 2001; Reisinger & Turner, 1997). Individualism has been observed within the Australian society since British settlement in

1788 (Goodnow, Burns & Russell, 1989). From that time onwards, the colonists had been experiencing isolation from other people and power. This developed their self-reliance attitude and behaviour (Borrie, 1989; Patel, 2003).

Graham and Sathye (2017) proposed that there is a distinction between collectivism and individualism among firms. These differences may have significant implications on the firms' CBS practices such as formal committee workings held during project evaluations and approvals. From the Indonesian working context, Graham and Sathye (2017) found that sophisticated committee workings are used when managers evaluate projects. The distinctive decision-making approaches are designed to achieve management consensus. Longer meetings are incorporated so as to accommodate the different points of view. These approaches towards decision-making are found to be most effective for large and complex projects where the firm's economic and socio-political uncertainty have the potential to impact its project outcomes. In contrast, firms in Australia are more self-sufficient, managers make individual judgments that are permitted by their designated roles while the chief executive officer (CEO) made the final call on project decisions.

3.3.2 Religiosity – Indonesia is a Majority Muslim Country

Another potentially important feature that varied between Indonesia and Australia is religiosity. Indonesia is the world's most populous Muslim country (Business Monitor, 2018a). It adheres to the *Sharia* laws which are based on Islamic canonical laws of the Koran and the teachings and traditions of the prophet. *Sharia* is partly regulated in Indonesia; it impacts firms' financial management through the contemplation of risk and uncertainty (Fealy & White, 2008; Lindsey, 2008). *Sharia* also prohibits transactions that involve risks because risks are considered exploitative, placing hardships on the poor. If *Sharia* rules on mitigating risky transactions are considered when making project investment decisions, then it may be that Indonesian firms would adopt sophisticated CBS to moderate environmental uncertainty.

Studies (Ahmad & Hassan, 2007; Chazi, Terra, & Zanella, 2010; Al-Ajmi et al., 2011) have examined *Sharia* compliant approaches in appraising project investment decisions. These studies agree that sophisticated CBS practices such as discounted cash flow calculations that are used to evaluate project investment decisions are permitted under *Sharia* practices (Ahmad & Hassan, 2007). Similarly, Chazi et al. (2010) and Al-Ajmi et al. (2011) found that firms from Islamic countries also commonly adopt sophisticated CBS practices to appraise project investments and to mitigate risks.

4. Literature Review

Literature on contingency theory (e.g. Chenhall & Morris, 1993) has long proposed that CBS practices must be selected to suit firms' environmental conditions. Such CBS practices include the variety of ways firms appraise project investments throughout their project lifecycles. Literature (Chenhall & Morris, 1993; Chittenden & Derregia, 2015; Alkaraan & Northcott, 2013) drawing on contingency theory has categorised CBS practices under four broad headings: capital budgeting techniques (CBT), risk management techniques (RMT), non-financial information (NFI) and capital budgeting procedures (CBP), as explained earlier.

Applying the contingency theory as an approach, this study examines the national differences that could impact on the CBS practices of non-financial listed firms in Indonesia and Australia. Specific contingency factors that were considered for this study include perceived environmental uncertainty, firm size, education attainment and national culture. We contend that a firm's need for sophisticated CBS practices is dependent upon these four factors. Consistent with prior research (Brunzell et al., 2013; Hermes et al., 2007), this study also posits that a firm's use of sophisticated CBS practices is dependent on firm size, education attainment and the degree of environmental uncertainty faced by the firm. Additionally, it is predicted that Indonesian managers would place more importance on sophisticated CBS practices due to cross-cultural differences.

4.1 Perceived Environmental Uncertainty

Perceived environmental uncertainty is the state where managers perceive their environment to be ambiguous and unclear (Chenhall & Morris, 1993). This is manifested when there is a difference in the information available and the information required (Buchko, 1994). Studies (Haka, 1987; Brunzell et al., 2013; Holmen & Pramborg, 2009) suggested that there is a mixed support for the linkage between uncertainty and sophisticated CBS practices. In sophisticated CBT, project outcomes are forecasted by discounting the cash flows to their present value (e.g. net present value). Contrary to that, naïve CBT can be easily calculated by using the rules of thumb (e.g. payback period). Chen (2008) posited that the forecasting of sophisticated CBT is dependent on its ability to estimate model parameters. These parameters are accurately calculated only when firms are faced with more certain environments. As a result of facing a more certain environment as noted by a stable political context firms tend to select sophisticated CBT (Haka, 1987; Brunzell et al., 2013; Holmen & Pramborg, 2009).

In comparison, sophisticated RMT formally estimates the impact of environmental uncertainty by looking at the project outcomes (e.g. probability analysis) while naïve RMT incorporates ad hoc adjustments (e.g. sensitivity analysis). Contingency studies (Chen, 2008) concur that although sophisticated RMT is costly in application, the cost effectiveness of applying the technique improves as uncertainty increases. Consequently, firms commonly select sophisticated RMT when facing higher financial (Verbeeten, 2006), socio-economic (Ho & Pike, 1998) and environmental uncertainty (Chittenden & Derregia, 2015).

Firms are only expected to use sophisticated CBT and sophisticated RMT when both are used in assisting project investment decisions. Elmassri, Harris and Carter (2016) argued that in cases of extreme uncertainty, both the CBT and RMT information is of little benefit to decision makers. In such cases, the management collects sophisticated NFI to support its decision making. Sophisticated NFI comprises the provision of strategic NFI (Farragher et. al., 2001) while sophisticated CBP comprises decision making protocols, committees and other formal procedures (Alkaraan & Northcott, 2013).

4.2 Firm Size

Many studies (Alkaraan & Northcott, 2013; Andrés et al., 2015; Brunzell et al., 2013; Hermes et al., 2007; Rossi, 2014; Verbeeten, 2006) have noted the positive relationship that exists between firm size and the use of sophisticated CBS. Arguments supporting this connection include: (a) larger firms make more rational decisions; (b) larger firms have access to resources, qualified and experienced staff; (c) larger firms apply modern and innovative decision making practices; and (d) larger firms are subject to agency problems, so they apply sophisticated practices to minimise political influences.

4.3 Education

Prior literature (Al-Ajmi et al., 2011; Brunzell et al., 2013; Graham & Harvey, 2002) has also observed that management characteristics such as education and age affect the use of sophisticated CBS. These studies acknowledge that higher levels of education significantly impact the use of sophisticated CBS such as net present value.

4.4 National Culture

Previous research (Carr et al., 2010; Carr & Tomkins, 1998; Shields et al., 1991) reported that national culture is significantly linked to the selection of CBS. Several approaches are used to measure the NC and some of these including the holistic approaches, have been improved (Heidhues & Patel, 2011). The national culture was also calculated based on dimensions (Hofstede, 1980; Triandis et al., 1993). An upsurge of research (Hofstede, 2001) has been relying on narrowly focused and calculated NC dimensions such as those developed by Hofstede (1980) but these have led to some difficulties in comprehending the results. Researchers (Baskerville, 2003; Bhimani, 2006) have deliberated on which path to take in addressing these methodological limitations. In the context of this study, the approach utilised by Heidhues and Patel (2011) was applied for developing the holistic foundations for the national culture differences. This approach was built upon the themes of the economic, legal, political and social lines.

Focussing on Indonesia and Australia, this study aims to link the environmental contexts of both countries to their selection of CBS practices by comparing their respective economic, legal, political and social contexts. Since there are wide differences in the economic development between Indonesia and Australia, it is expected that Indonesia would be utilising more sophisticated CBS, especially, RMT, CBP and NFI. The following reasons support Indonesia's position.

Managers in the Indonesian context would typically experience higher levels of environmental uncertainty and more inclined towards using sophisticated CBP and NFI because of Indonesia's economic, legal, political and social differences. Moreover, the *Sharia* based governance guidelines applied in Indonesia have a bearing on mitigating risks (Sakai, 2010). In that regard, it is expected that managers will be using sophisticated RMT. In comparison, managers in the Australian context would experience lower levels of uncertainty hence their inclination towards using naïve CBS.

From their study, Graham and Sathye (2017) noted several reasons which can explain why sophisticated CBS would suit the Indonesian context. Firstly, in accordance with the practice to mitigate risky transactions, it is obvious that sophisticated RMT would consist of an extensive analysis of uncertainty. Secondly, sophisticated CBP involves the use of formal approaches that can be used to mitigate risks throughout the project management. Thirdly, the NFI provides qualitative information that can be used to moderate uncertainty in project evaluations. Chen (2008) stated that while sophisticated CBT provides superior information for making project investment decisions, sophisticated CBT can only be adequately calculated in certain environments due to difficulties in estimating discounted cash flow parameters. Based on this, it is therefore argued that Indonesian managers are more likely to adopt naïve CBT. Thus, the following hypotheses are developed for testing:

H_1: Indonesian firms will place less importance on sophisticated capital budgeting techniques than Australian firms due to national culture differences.

H_2: Indonesian firms will place more importance on sophisticated risk management techniques than Australian firms due to national culture differences.

H_3: Indonesian firms will place more importance on sophisticated non-financial information than Australian firms due to national culture differences.

H_4: Indonesian firms will place more importance on sophisticated capital budgeting procedures than Australian firms due to national culture differences.

5. Research Design and Methodology

A postal survey was administered on finance managers holding senior positions in 120 non-financial listed firms. Prior to this, the questionnaire was piloted on two managers in Australia and two in Indonesia. Based on the outcome, the final questionnaire was adjusted to 21 questions. The time estimated for answering the questionnaire was between 15 to 20 minutes. Only non-financial listed firms were selected from Indonesia and Australia which totalled 644 and 255 firms respectively. This is because larger firms were expected to be making project investment decisions with certainty. Given the available resources, the sample size was set at 120 and this number was equally divided between Indonesia and Australia. A random sample was picked based on the random number tables that were available online.

The questionnaires were distributed to the respondents between October 2013 and April 2014. A total of 70 questionnaires were retrieved from the sample of 120 sent to non-financial listed firms – 34 (57 per cent response rate) from Australia and 36 (60 per cent response rate) from Indonesia. Three responses were discarded due to incompleteness, leaving a final sample of 32 Australian and 35 Indonesian firms. The final sample totalled 67 usable responses (56 per cent response rate). It is acknowledged that the sample size is not large, but statistically adequate for analysing the data. Van der Stede, Young and Chen (2005, p. 669) had argued that instead of focussing on a large sample size, it is more crucial to focus on minimising non-response bias as this criteria can critically affect the quality of data assessment. The response rate of this study is similar to the average response rate of other survey studies (Van der Stede et al., 2005) done in management accounting.

The demographic information of these samples revealed that all the finance managers were experienced in making project investment decisions. Of these, 97 per cent of the respondents had attained at least a bachelor degree. The respondents' education attainment shows that 84 per cent of the Australian respondents were educated in Australia and 97 per cent of the Indonesian respondents were educated in Indonesia.

5.1 Dependent Variables

In line with Pike's (1988) recommendation, the respondents were asked to rate how important each CBS practice was for making project investment decisions. A five-point Likert scale was used with anchors of 1 = not at all important and 5 = extremely important. Consistent with Graham and Sathye's (2017) outcomes, 31 CBS items were applied on the two countries. These are listed in Figure 1.

As can be seen, five capital budgeting techniques and seven risk management techniques noted in CBS practices were provided followed by nine non-financial information and 10 capital budgeting procedures, totalling 31 items.

Capital Budgeting Techniques

1. Return on investment
2. Discounted payback
3. Internal rate of return
4. Net present value
5. Payback period

Risk Management Techniques

1. Certainty equivalents
2. Discount rate adjustments
3. Monte Carlo simulations
4. Probability analysis
5. Real options and decision trees
6. Scenario analysis
7. Sensitivity analysis

Non-financial Information

1. Strategic and competitiveness information
2. Customer information
3. Employee information
4. Environmental information
5. Political and regulatory information
6. Quality information
7. Social and community information
8. Supplier and raw materials information
9. Synergy information

Capital Budgeting Procedures

1. Obtaining advice from experts and consultants
2. Formal project committees
3. Generation and screening of ideas for new project investments
4. Maintenance of long-term capital plans
5. Post implementation reviews
6. Formal project approvals
7. Preparation of business cases
8. Project monitoring and reviewing
9. Searching and screening of project alternatives
10. Remuneration and rewards linked to project outcomes

Figure 1: Capital Budgeting System Items Included in the Survey and Classified by CBS

5.2 Independent Variables

5.2.1 National Culture

Following several prior studies (Chow, Shields, & Wu, 1999; Leach-Lopez et al., 2007; Jansen et al., 2009), a dummy variable (INDONESIA) was used to proxy for national culture (NC) where zero represents Australia and one represents Indonesia. The purpose is to observe how the NC affected the dependent variable.

5.2.2 Perceived Environmental Uncertainty (PEU)

Prior studies (Brunzell et al., 2013; Ho & Pike, 1998; Verbeeten, 2006) have shown that various measures of environmental uncertainty can impact the use of sophisticated CBS. In those studies, perceived environmental uncertainty was measured through Gordon and Narayanan's (1984) model which consists of seven item instruments that can measure uncertainty from several perspectives including: environment, industry, competitor actions, customer preferences, scientific discoveries in the industry as well as regulatory and economic factors. This approach in measuring perceived environmental uncertainty has been noted to possess a single factor structure (Cronbach alpha = 0.77) which has also been used in a CBS context previously (Chenhall & Morris, 1993).

5.2.3 Firm Size (LOGSIZE)

Firm size impacts the sophistication of CBS (Chen, 2008). In this study, it was measured by using the log of annual sales turnover for the respondent's firm. This is consistent with the assertion made by Hermes et al. (2007).

5.2.4 Education Attainment (EDUC)

Higher education attainment impacts the use of more sophisticated CBS practices (Brunzell, et al., 2013). In this study, education attainment was measured through six items of choices (1 = high school, 2 = technical college, 3 = bachelor degree, 4 = honours degree, 5 = master degree, 6 = doctorate degree).

Table 3 illustrates the descriptive statistics derived for the continuous variables. They encompass perceived environmental uncertainty (PEU), firm size (LOGSIZE) and education attainment (EDUC). The survey responses indicate that on average, respondents consider the PEU to be moderately uncertain (Mean = 3.21; SD = 0.44). The average LOGSIZE for the sample firms was 11.82 (SD = 2.18). Data revealed that managers had an average education level of an honours degree (Mean = 4.13, SD = 1.12).

Table 3: Descriptive Statistics on Continuous Variables

Variable	N	Mean	St. Dev	Min	Max
PEU	67	3.21	0.44	1.90	4.20
LOGSIZE	67	11.82	2.18	5.39	16.70
EDUC	67	4.13	1.12	1.00	6.00

Note: PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

6. Results

6.1 Univariate Analysis

6.1.1 Univariate Tests for Hypothesis 1

Hypothesis 1 (H_1) predicts that Indonesian firms will place less importance on sophisticated capital budgeting techniques (CBT) than Australian firms due to NC differences. As a univariate test of this hypothesis, the t-test results of cross-cultural differences for the CBT practices were calculated. Consistent with prior studies (Hermes, et al., 2007), the respondents were asked to rate the level of importance their firms placed on CBT practices (where 1 = not at all important and 5 = extremely important). Table 4 shows the mean scores for importance placed for each of the CBT practices. This will indicate whether firms from both countries place greater importance on the naïve techniques or on the sophisticated techniques.

In this regard, it was found that the univariate analysis did not support the prediction of H_1. The t-test results for cross-cultural difference as noted in the means for two of the sophisticated CBT (net present value, internal rate of return) were observed to be significant. However, the direction is contrary to expectation. For instance, the mean score for net present value for the Indonesian and Australian samples remained as 3.75 and 2.97 respectively. Further, the difference between the means was also significant at the 10 per cent level ($t = -1.880$, $\rho = 0.066$). Stronger results were also reported for the internal rate of return where the mean score for internal rate of return for Indonesian

Table 4: Importance Placed on Capital Budgeting Techniques (CBT) Used by Indonesian and Australian Firms

Capital Budgeting Technique (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
Sophisticated approaches				
1. Net present value	2.97	3.75	-1.880	0.066*
2. Internal rate of return	2.03	3.19	-2.486	0.016**
3. Discounted payback period	1.23	1.92	-1.432	0.157
Naïve approaches				
4. Payback period	3.03	3.97	-2.662	0.011**
5. Return on investment	3.84	4.28	-1.528	0.131

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

and Australian samples stood as 3.19 and 2.03 respectively (t = -2.486, ρ = 0.016). Finally, the naive payback period was perceived to be significantly more important for Indonesia than for Australia (t = -2.662, ρ = 0.011). Here, the mean scores were 3.97 and 3.03 respectively. The results therefore, suggest that while payback remains to be important in both countries, sophisticated CBT practices are gaining prominence in Indonesia (Leon et al., 2008) but are diminishing in Australia (Truong et. al., 2008). Contrary to predictions, Indonesian managers seem to place more importance on sophisticated CBT than their Australian counterparts, despite theoretical difficulties in using them when faced with higher levels of uncertainty.

6.1.2 Univariate Tests for Hypothesis 2

The variety of risk management techniques (RMT) used by Indonesian and Australian firms were also noted in the results. The mean score demonstrating the evidence is shown in Table 5. The results of the statistical tests of cross-cultural differences project the importance placed on the RMT. It is obvious that scenario analysis, discount rate adjustments and sensitivity analysis are all considered as naïve techniques. At the same time, real options, probability analysis, simulations and certainty equivalents are considered to be sophisticated. H_2 predicts that Indonesian firms will place more importance on

Table 5: Importance Placed on Risk Management Techniques (RMT) Used by Indonesian and Australian Firms

Risk Management Technique (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
Sophisticated approaches				
1. Real options	0.81	3.25	-6.211	0.000***
2. Probability analysis	1.42	3.03	-3.868	0.000***
3. Simulations	0.00	1.33	-4.83	0.000***
4. Certainty equivalents	2.48	3.69	-3.125	0.003***
Naïve approaches				
5. Scenario analysis	3.52	3.56	1.080	0.914
6. Discount rate adjustment	2.35	2.03	0.675	0.502
7. Sensitivity analysis	3.61	3.19	0.996	0.323

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

sophisticated RMT than Australian firms do due to NC differences. The results demonstrate that all the differences of the sophisticated RMT were statistically significant, as noted in Table 5.

The findings of the current study are consistent with the work of Kester et al. (1999). It is apparent that the Australian firms placed more importance on naïve RMT (scenario analysis, sensitivity analysis and discount rate adjustment). In contrast, the Indonesian firms placed more importance on a broader range of RMT. The mean score for real options, as noted by the Indonesian firms, is significantly higher at 3.25, as compared to 0.81 noted in Australian firms (t = -6.211, ρ = 0.000). Similarly, the mean score for probability analysis, simulations and certainty equivalents were significantly higher for Indonesian firms at 3.03, 1.33 and 3.69 respectively as compared to Australian firms, at 1.42, 0.00 and 2.48 respectively. No significant difference was found for the importance placed on the naïve scenario analysis, discount rate adjustment and sensitivity analysis for both countries. The univariate results can thus be said to support H_2 which states that Indonesian firms will place more importance on sophisticated RMT than Australian firms due to national culture differences. The results drawn from the Indonesian firms suggest that the use of sophisticated RMT is expanding in comparison to the results provided by prior studies (Leon et al., 2008).

6.1.3 Univariate Tests for Hypothesis 3

Table 6 presents statistics which describe the importance firms from both countries placed on the various NFI when making project investment decisions. NFI is the qualitative information derived from a strategic nature that can be used to supplement project investment decision-making. H_3 predicts that Indonesian firms will place more importance on sophisticated NFI than Australian firms due to national culture differences. The outcome drawn from the analysis is projected in Table 6. It shows the t-test results of the cross-cultural differences for the NFI practices of the firms involved.

The results illustrate that the respondents placed particular importance on several types of NFI. Among the Australian firms, the most important types of NFI used include strategic, synergistic and customer information. This is evidenced in the mean score of 4.00, 3.77 and 3.39 respectively. Likewise, the Indonesian firms also placed emphasis on similar concerns but greater emphasis was placed on a broader range of the NFI. For instance, the results of the statistical tests

Table 6: Importance Placed on Non-Financial Information (NFI) Used by Indonesian and Australian Firms

Non-financial information (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
1. Customer	3.39	4.39	-3.149	0.003***
2. Employees	3.00	3.17	-0.401	0.690
3. Environmental	2.29	3.39	-2.425	0.019**
4. Political	2.90	2.47	0.873	0.386
5. Quality	2.90	3.86	-2.428	0.019**
6. Social	1.55	1.83	-0.578	0.565
7. Strategic	4.00	4.36	-1.482	0.143
8. Suppliers	2.74	4.06	-3.359	0.001***
9. Synergies	3.77	4.22	-2.051	0.044**

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

indicate that Indonesian firms placed significant emphasis on other types of NFI such as customer, environment, quality, supplier and synergy information. These results support H_3 which states that Indonesian firms will use more sophisticated NFI than Australian firms due to national culture differences. The importance firms placed in strategic NFI has been documented previously (Abdel-Kader & Dugdale, 2001; Alkaraan & Northcott, 2006, Carr et. al, 2010). This study highlights that a broader range of NFI including synergy and environmental NFI, can be important for project investment decision-making.

6.1.4 Univariate Tests for Hypothesis 4

H_4 predicts that Indonesian firms will place more importance on sophisticated CBP due to NC differences when compared to Australian firms. The hypothesis was tested by comparing the t-test results of the cross-cultural differences in the various items of the CBP practices. The t-test analysis shows significant differences for five of the ten CBP items (Table 7).

Consistent with H_4, the Indonesian firms placed greater importance on four of the sophisticated CBP practices. In Indonesia, for example, the mean score for long term capital plan was 3.64 whereas in Australia it was 2.29 (t = -3.193, ρ = 0.002). Similarly, the importance placed on the generation and screening of ideas for the Indonesian and Australian

Table 7: Importance Placed on Capital Budgeting Procedures (CBP) Used by Indonesian and Australian Firms

Capital budgeting procedures (Mean Score)	Australia	Indonesia	t-statistic	ρ–value (2 tailed)
1. Advice from experts	3.16	3.47	-0.816	0.417
2. Formal project committees	1.90	2.56	-1.317	0.192
3. Long term capital plan	2.29	3.64	-3.193	0.002***
4. Generation and screening of ideas for new investments	2.48	3.56	-3.010	0.004***
5. Search and screening of project alternatives	2.87	3.64	-2.241	0.029**
6. Preparation of business case	4.26	2.81	4.015	0.000***
7. Formal project approval	4.00	3.64	1.087	0.281
8. Project monitoring and review	3.71	3.64	0.199	0.843
9. Post implementation review	3.19	3.61	-1.102	0.274
10. Remuneration and rewards linked to project outcomes	2.00	2.97	-2.091	0.041**

Note: *, **, *** denote significance at 10%, 5% and 1% levels respectively.

samples were 3.56 and 2.48 respectively (t = -3.010, ρ = 0.004). It was also observed that the search and screening of project alternatives had been given less emphasis in Australia (2.87) unlike Indonesia (3.64) (t = -2.241, ρ = 0.029). Finally, the results indicate that remuneration linked to project outcomes was significantly higher for the Indonesian firms when compared to Australian firms (2.97 versus 2.00 respectively).

Contrary to H_4, Australian firms placed greater importance on preparing a business case when compared to Indonesian firms. The mean score for a business case in Australia was 4.26 whereas in Indonesia the mean score was 2.81 (t = 4.015, ρ = 0.000). Nevertheless, the differences in the remaining five CBP practices were not significant.

Overall, these results offer some support for H_4. The importance placed on four of the ten sophisticated CBP practices was significantly higher in Indonesia. Prior studies have given limited attention to CBP practices such as decision-making procedures (Alkaraan & Northcott, 2013; Alkaraan, 2016). This study reveals that a variety of CBP practices are important for making project investment decisions in the Indonesian and Australian context.

6.2 *Multivariate Analysis*

By making reference to the results presented in Tables 5 to 8, it is obvious that certain CBS practices assumed higher importance in the decision-making practices of the managers in Indonesian firms when compared to managers in Australian firms. It was further observed that managerial preferences were related to other characteristics such as firm size, perceived environmental uncertainty and education attainment.

In looking at the capital budgeting techniques (CBT), only net present value, internal rate of return and payback period were examined. The other CBT practices were excluded since their results in Table 4 showed no significant difference in the mean scores between Indonesian and Australian firms. The results of the regression analysis for CBT as presented in Table 8 support the conclusions drawn from the univariate analyses. These had emphasised that Indonesian managers placed significantly higher importance on the techniques of the internal rate of return and payback period. The use of net present value was observed to be positively related to perceived environmental uncertainty, firm size and education attainment of the managers. Further, the national setting also indicates a significant effect hence, H_1 was not supported. Contrary to expectations, Indonesian managers placed higher importance on both the sophisticated and naïve CBT items.

Table 8: Regression Analysis on the Determinants of Capital Budgeting Techniques (CBT)

	Net Present Value	Internal Rate of Return	Payback Period
Constant	-3.65**(1.73)	-0.65(2.12)	0.30(1.57)
INDONESIA	0.48(0.40)	1.15**(0.48)	0.88**(0.36)
PEU	1.05**(0.43)	-0.07(0.53)	0.56(0.39)
LOGSIZE	0.18*(0.09)	0.13(0.11)	0.02(0.08)
EDUC	0.32**(0.15)	0.34*(0.18)	0.18(0.13)
N	67	67	67
R^2	24.7%	16.2%	16.1%
F-statistic	5.084***	2.987**	2.972**

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

Table 9 shows the results of the regression analysis for sophisticated risk management techniques (RMT). Results from naïve RMT were not displayed because Table 5 had earlier shown that there was no significant difference between Indonesian and Australian firms. The results had noted that real options, probability analysis, simulations and certainty equivalents had assumed a higher importance in the CBS practices of the Indonesian managers. These findings therefore, support H_2. Of these factors, real options were shown to be significantly related to the level of perceived environmental uncertainty as experienced by managers. In addition, larger firms were more likely to place importance on using certainty equivalents.

Table 9: Regression Analysis on the Determinants of Risk Management Techniques (RMT)

	Real Options	Probability Analysis	Simulations	Certainty Equivalents
Constant	1.16(1.23)	1.60(1.24)	1.08(0.91)	3.88***(1.22)
INDONESIA	1.4***(0.28)	0.74**(0.28)	1.19***(0.21)	0.64**(0.28)
PEU	0.71**(0.31)	0.47(0.31)	0.28(0.23)	0.09(0.31)
LOGSIZE	-0.10(0.06)	-0.05(0.06)	-0.03(0.05)	-0.11*(0.06)
EDUC	-0.02(0.10)	0.04(0.10)	-0.02(0.08)	0.07(0.10)
N	67	67	67	67
R^2	38.4%	15.0%	40.7%	10.1%
F-statistic	9.677***	2.737**	10.636***	1.745

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

Table 10 shows the results for the determinants of non-financial information (NFI). Only those results that carried significant differences in the mean scores between Indonesian and Australian firms, as noted in Table 6, are displayed. Results presented in Table 10 suggest that Indonesian managers placed higher importance on customers, quality, suppliers and synergies. Managers with higher perceived environmental uncertainty placed more importance on customers. These results henceforth, support H_3.

Table 10: Regression Analysis on the Determinants of Non-Financial Information (NFI)

	Customers	Environment	Quality	Suppliers	Synergies
Constant	-0.95(1.34)	-2.14(2.06)	0.08(1.83)	3.19*(1.83)	2.45**(1.02)
INDONESIA	0.75**(0.31)	0.77(0.47)	0.76*(0.42)	1.36***(0.42)	0.47**(0.23)
PEU	0.97***(0.34)	0.68(0.51)	0.55(0.46)	0.06(0.46)	0.36(0.26)
LOGSIZE	0.08(0.07)	0.18*(0.11)	0.09(0.09)	-0.05(0.09)	-0.03(0.05)
EDUC	-0.10(0.11)	0.08(0.17)	0.04(0.15)	-0.02(0.15)	0.13(0.09)
N	67	67	67	67	67
R^2	27.7%	15.8%	12.3%	16.0%	12.0%
F-statistic	5.935***	2.915	2.181*	2.955**	2.105*

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

The determinants of various capital budgeting procedures (CBP) are displayed in Table 11. Other CBP items have been omitted since results in Table 7 had identified no significant differences between Indonesian and Australian firms. The results presented in Table 11

Table 11: Regression Analysis on the Determinants of Capital Budgeting Procedures

	Long Term Capital Plan	Generate and Screen Ideas	Project Alter- natives	Business Case	Rewards Linked to Project Outcomes
Constant	2.05(1.94)	-1.15(1.60)	1.31(1.58)	1.92(1.80)	-1.02(2.17)
INDONESIA	1.47***(0.44)	0.87**(0.37)	0.59(0.36)	-1.60***(0.41)	0.88*(0.50)
PEU	-0.43(0.48)	0.67*(0.40)	0.38(0.40)	0.43(0.45)	0.20(0.54)
LOGSIZE	0.05(0.10)	0.09(0.08)	0.06(0.08)	0.07(0.09)	0.12(0.11)
EDUC	0.24(0.16)	0.12(0.13)	-0.07(0.13)	0.05(0.15)	0.25(0.18)
N	67	67	67	67	67
R^2	18.4%	19.8%	10.3%	20.9%	11.2%
F-statistic	3.503**	3.824***	1.785	4.088***	1.947

Note: 2 tailed significance at * ρ = 0.1, ** ρ = 0.05, and *** ρ = 0.01. Variables: INDONESIA (0=Australia, 1=Indonesia), PEU (perceived environmental uncertainty), LOGSIZE (log of annual sales turnover), EDUC (education attainment).

demonstrate that Indonesian managers perceived certain capital budgeting procedures such as long-term capital plan, generation and screening of ideas, and rewards linked to project outcomes to be more important, unlike their Australian counterparts who perceived business case to be of higher importance. These results are consistent with the univariate results which hereby, support H_4.

7. Discussion and Conclusion

The present study had set out to compare the impact of national culture on the use of capital budgeting systems (CBS) by non-financial listed firms in Indonesia and Australia. Based on a sample of 67 useable responses, it is found that national culture and other variables identified by the contingency theory are useful for predicting the importance which such firms place on capital budgeting systems (capital budgeting techniques, risk management techniques, non-financial information and capital budgeting procedures) when making project investment decisions.

Specifically, this study offers evidence to support three of the four hypotheses formulated. It appears that Indonesian managers place more importance on using sophisticated risk management techniques (e.g. real options, simulations) when compared to Australian managers. Indonesian managers also place greater importance on using non-financial information (e.g. customers, synergies) than their Australian counterparts. In addition, Indonesian managers also place significantly more importance on capital budgeting procedures for long-term capital planning, the generation and screening of ideas for investments and the search and screening of project alternatives. Contrary to expectations, Australian managers place more importance on the capital budgeting procedures for preparing a business case. The outcome derived from this study can be attributed to one possibility, which is that the Indonesian managers do not commonly utilise a business case to weigh out the project outcomes.

Opposite to the expectations made, Indonesian firms also place higher importance on sophisticated capital budgeting techniques such as the net present value and the internal rate of return when compared to Australian firms. Nonetheless, both countries used naïve techniques such as payback period and return on investment. This outcome may be attributed to the possibility that Indonesian managers desire to mitigate risk, hence propelling them to emphasise on sophisticated capital budgeting techniques. This has occurred despite research suggesting that environmental uncertainty forms a barrier in estimating discounted cash flow model parameters (Chen, 2008).

To check the robustness of our results, that is whether cross-cultural differences in capital budgeting systems are really present, the multivariate analysis was conducted. The variable "Indonesia/country" was found to be significant in all the variables except for net present value, environmental information and project alternatives. Accordingly, the national culture factor exerted a significant impact on the firm's capital budgeting systems.

This study contributes to the contingency theory literature. It provides evidence which support the impact contributed by the national culture setting. Differences in the economic development of the two countries, consistent with findings from prior studies (Andor et al., 2015; Hermes et al., 2007), can be used to explain the above results. Moreover, it is argued that the different national cultures of the two countries may have impacted these results. Prior research (Carr et. al., 2010; Heidhues & Patel, 2011) has emphasised on the importance of providing a contextual basis for examining national culture differences. This study is a response to that call. The Indonesian culture continues to emphasise on the avoidance of risk (Lindsay, 2008; Graham & Sathye, 2017). Consequently, more focus was given to using the sophisticated capital budgeting systems. This enabled the Indonesian managers to be more confident about the planned investment yielding benefits. Indonesia's experience in the Asian financial crisis and the global financial crisis appear to have made the Indonesian managers less confident about investing before all aspects of the investment risks are considered through the various capital budgeting systems. Australian managers, in contrast, although affected by the global financial crisis, appeared to be more confident about the stable Australian economy. Consequently, the Australian managers appeared to be risk-takers. This is demonstrated by their use of the naïve capital budgeting systems rather than the more sophisticated approaches (Hofstede, 2001).

The results drawn from this study also contribute to academic literature. It provides evidence which links contingency factors such as perceived environmental uncertainty, firm size and education attainment with the importance placed on capital budgeting systems. Additionally, this study had examined the impact of national culture on four broad categories of capital budgeting systems – a focus that has largely escaped the attention of researchers. This therefore, expands on the knowledge of CBS.

The current findings have important practical implications for managers operating in Indonesia and Australia. They can utilise these findings to revise the design of their capital budgeting systems. The managers involved need to be guided by the national culture of the respective countries and the importance these countries attach to their sophisticated budgeting systems. In an individualistic culture such as Australia where there is economic certainty, project investments can be made with guidance from naïve practices. In a collectivistic culture such as Indonesia, economic uncertainty would be higher because the implementation of laws and governance systems may not be as one finds them in developed countries. In this regard, reliance on less sophisticated capital budgeting systems would be recommended. The results noted from this study assume an increasing importance when noted from the context of foreign direct investments in Indonesia.

This study has revealed some striking cross-cultural differences which are noted in the practices related to the design and use of capital budgeting systems. However, the understanding of the nature and causes of these differences is just the tip of the iceberg. More research needs to be conducted so as to address the limitations of this study and to extend the research in new directions. Specifically, future research looking into the impact of national culture can focus on how *Sharia* impacts the use of capital budgeting systems and the performance effect of using different approaches. The other limitation of this study can be traced to the nature of survey research which is based on perceptions rather than reality. The approach could have been further fortified through other tasks such as interviews. Further to this are the low response rates incurred and other social desirability biases. Since this study had focused on non-financial listed firms in Indonesia and Australia during the recovery period following the GFC, inferences cannot be made to other time periods or countries.

References

Abdel-Kader, M., & Dugdale, D. (2001). Evaluating investments in advanced manufacturing technology: A fuzzy set theory approach. *The British Accounting Review, 33*(4), 455-489. http://dx.doi.org/10.1006/bare.2001.0177

Ahmad, A., & Hassan, M. (2007). *Riba* and Islamic banking. *Journal of Islamic Economics Banking and Finance, 3*(1), 1-33.

Al-Ajmi, J., Al-Saleh, N., & Hussain, H.A. (2011). Investment appraisal practices: A comparative study of conventional and Islamic financial institutions. *Advances in Accounting, 27*(1), 111-124. http://dx.doi.org/10.1016/j.adiac.2011.04.008

Alkaraan, F. (2016). Strategic investment decision-making – scanning and screening investment opportunities: The expansion of Guinness in West Africa. *Meditari Accounting Research, 24*(4), 505-526. http://dx.doi.org/10.1108/MEDAR-01-2016-0007

Alkaraan, F., & Northcott, D. (2006). Strategic capital investment decision-making: A role for emergent analysis tools?: A study of practice in large UK manufacturing companies. *The British Accounting Review, 38*(2), 149-173. http://dx.doi.org/10.1016/j.bar.2005.10.003

Alkaraan, F., & Northcott, D. (2013). Strategic investment decision-making processes: The influence of contextual factors. *Meditari Accountancy Research, 21*(2), 117-143. http://dx.doi.org/10.1108/MEDAR-09-2012-0031

Andor, G., Mohanty, S., & Toth, T. (2015). Capital budgeting practices: A survey of Central and Eastern European firms. *Emerging Markets Review, 23*(June), 148-172. http://dx.doi.org/10.1016/j.ememar.2015.04.002

Andrés, P.D., Fuente, G.D., & San Martín, P. (2015). Capital budgeting practices in Spain. *BRQ Business Research Quarterly, 18*(1), 37-56. http://dx.doi.org/10.1016/j.brq.2014.08.002

AUSTRADE. (2010). *Islamic finance*. Retrieved from www.austrade.gov.au/.../2792/Islamic-Finance-Publication.pdf.aspx

Baskerville, R. (2003). Hofstede never studied culture. *Accounting, Organizations and Society, 28*(1), 1-14. http://dx.doi.org/10.1016/S0361-3682(01)00048-4

Benetti, C., Decourt, R.F., & Terra, P.R.S. (2007). *The practice of corporate finance in Brazil and in the USA: Comparative survey evidence*. Paper presented at the VII Encontro Brasileiro de Finanças. Retrieved from http://bibliotecadigital.fgv.br/ocs/index.php/ebf/7EBF/paper/view/1822/0

Bhimani, A. (2006). Comparative management accounting research: Past forays and emerging frontiers. In C. Chapman, A.G. Hopwood, & M.D. Shields (Eds.), *Handbook of Management Accounting Research, Volume 1* (1st ed., pp. 343-363). Amsterdam, Netherlands: Elsevier.

Borrie, W. (1989). The population. In E. Hancock (Ed.), *Australian society* (pp. 119-142). Sydney, Australia: Cambridge University Press.

Brunzell, T., Liljeblom, E., & Vaihekoski, M. (2013). Determinants of capital budgeting methods and hurdle rates in Nordic firms. *Accounting & Finance, 53*(1), 85-110. http://dx.doi.org/10.1111/j.1467-629X.2011.00462.x

Buchko, A.A. (1994). Conceptualization and measurement of environmental uncertainty: An assessment of the Miles and Snow perceived environmental uncertainty scale. *Academy of Management Journal, 37*(2), 410-425. http://dx.doi.org/10.2307/256836

Business Monitor. (2018a). *Indonesia: Business forecast report (Q1 2018)*. Retrieved from http://web.a.ebscohost.com.ezproxy.canberra.edu.au/ehost/detail/

detail?vid=0&sid=822d023e-0b3c-4c16-aa5d-dae4ebeb86f8%40sessionmgr4008&bdata=#AN=126787990&db=bth

Business Monitor. (2018b). *Australia business forecast report (Q1 2014)*. Retrieved from http://web.a.ebscohost.com.ezproxy.canberra.edu.au/ehost/detail/detail?vid=0&sid=a7f02645-e834-4c96-9f93-ecfa10ee6eac%40sessionmgr4007&bdata=#AN=126258696&db=bth

Carr, C., & Tomkins, C. (1998). Context, culture and the role of the finance function in strategic decisions. A comparative analysis of Britain, Germany, the U.S.A. and Japan. *Management Accounting Research, 9*(2), 213-239. http://dx.doi.org/10.1006/mare.1998.0075

Carr, C., Kolehmainen, K., & Mitchell, F. (2010). Strategic investment decision making practices: A contextual approach. *Management Accounting Research, 21*(3), 167-184. http://dx.doi.org/10.1016/j.mar.2010.03.004

Chazi, A., Terra, P., & Zanella, F. (2010). Theory versus practice: Perspectives of Middle Eastern financial managers. *European Business Review, 22*(2), 195-221. http://dx.doi.org/10.1108/09555341011023524

Chen, S. (2008). DCF techniques and nonfinancial measures in capital budgeting: A contingency approach analysis. *Behavioral Research in Accounting, 20*(1), 13-29. http://dx.doi.org/10.2308/bria.2008.20.1.13

Chenhall, R., & Morris, D. (1993). The role of post completion audits, managerial learning, environmental uncertainty and performance. *Behavioral Research in Accounting, 5*(1), 170-186.

Chittenden, F., & Derregia, M. (2015). Uncertainty, irreversibility and the use of 'rules of thumb' in capital budgeting. *The British Accounting Review, 47*(3), 225-236. http://dx.doi.org/10.1016/j.bar.2013.12.003

Chow, C.W., Shields, M.D., & Wu, A. (1999). The importance of national culture in the design of and preference for management controls for multinational operations. *Accounting, Organizations and Society, 24*(5-6), 441-461.

Department of Foreign Affairs and Trade. (2017). *Joint statement between the Government of Australia and the Government of the Republic of Indonesia*. Retrieved from https://www.pm.gov.au/media/2017-02-26/joint-statement-between-government-australia-and-government-republic-indonesia

Economist Intelligence Unit (EIU). (2013a). *Country report: Indonesia*. Retrieved from https://global-factiva-com.ezproxy.canberra.edu.au/ha/default.aspx#./!?&_suid=142525831279908293800330720842

Economist Intelligence Unit (EIU). (2013b). *Country report: Australia*. Retrieved from https://global-factiva-com.ezproxy.canberra.edu.au/ha/default.aspx#./!?&_suid=142525698541200015337553340941668

Efferin, S., & Hartono, M. (2015). Management control and leadership styles in family business: An Indonesian case study. *Journal of Accounting and Organizational Change, 11*(1), 130-159. http://dx.doi.org/10.1108/JAOC-08-2012-0074

Efferin, S., & Hopper, T. (2007). Management control, culture and ethnicity in a Chinese Indonesian company. *Accounting, Organizations and Society, 32*(3), 223-262. http://dx.doi.org/10.1016/j.aos.2006.03.009

Elmassri, M., Harris, E., & Carter, D. (2016). Accounting for strategic investment decision-making under extreme uncertainty. *The British Accounting Review, 48*(2), 151-168. http://dx.doi.org/10.1016/j.bar.2015.12.002

Farragher, E., Kleiman, R., & Sahu, A. (2001). The association between the use of sophisticated capital budgeting practices and corporate performance. *Engineering Economist, 46*(4), 300-311. http://dx.doi.org/10.1080/00137910108967579

Fealy, G., & White, S. (2008). *Expressing Islam: Religious life and politics in Indonesia*. Singapore: Institute of Southeast Asian Studies.

Geertz, C. (1973). *The interpretation of cultures: Selected essays* (Vol. 5019). New York, NY: Basic Books.

Goodnow, J., Burns, A., & Russell, G. (1989). Australian families. In E. Hancock (Ed.), *Australian society* (pp. 23-43). Sydney, Australia: Cambridge University Press.

Gordon, L., & Narayanan, V. (1984). Management accounting systems, perceived environmental uncertainty and organization structure: An empirical investigation. *Accounting, Organizations and Society, 9*(1), 33-47. http://dx.doi.org/10.1016/0361-3682(84)90028-X

Graham, J., & Harvey, C. (2002). How do CFOs make capital budgeting and capital structure decisions? *Journal of Applied Corporate Finance, 15*(1), 8-23. http://dx. doi.org/10.1111/j.1745-6622.2002.tb00337.x

Graham, P., & Sathye, M. (2017). Does national culture impact capital budgeting systems? *Australasian Accounting, Business and Finance Journal, 11*(2), 43-60. http://dx. doi.org/ 10.14453/aabfj.v11i2.4

Haka, S. (1987). Capital budgeting techniques and firm specific contingencies: A correlational analysis. *Accounting, Organizations and Society, 12*(1), 31-48. http://dx.doi.org/10.1016/0361-3682(87)90014-6

Haka, S. (2006). A review of the literature on capital budgeting and investment appraisal: Past, present, and future musings. *Handbooks of Management Accounting Research, 2*, 697-728. http://dx.doi.org/10.1016/S1751-3243(06)02010-4

Hamid, S., Craig, R., & Clarke, F. (1993). Religion: A confounding cultural element in the international harmonization of accounting? *Abacus, 29*(2), 131-148. http://dx.doi.org/10.1111/j.1467-6281.1993.tb00427.x

Harun, H., Van-Peursem, K., & Eggleton, I. (2015). Indonesian public sector accounting reforms: Dialogic aspirations a step too far? *Accounting, Auditing & Accountability Journal, 28*(5), 706-738. http://dx.doi.org/10.1108/AAAJ-12-2012-1182

Heidhues, E., & Patel, C. (2011). A critique of Gray's framework on accounting values using Germany as a case study. *Critical Perspectives on Accounting, 22*(3), 273-287. http://dx.doi.org/10.1016/j.cpa.2010.08.002

Hermes, N., Smid, P., & Yao, L. (2007). Capital budgeting practices: A comparative study of the Netherlands and China. *International Business Review, 16*(5), 630-654. http://dx.doi.org/10.1016/j.ibusrev.2007.05.002

Ho, S.S.M., & Pike, R.H. (1998). Organizational characteristics influencing the use of risk analysis in strategic capital investments. *Engineering Economist, 43*(3), 247-268. http://dx.doi.org/10.1080/00137919808903198

Hofstede, G. (1980). *Cultures consequences: International differences in work-related values*. Newbury Park, CA: Sage.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. London: Sage.

Holmen, M., & Pramborg, B. (2009). Capital budgeting and political risk: Empirical evidence. *Journal of International Financial Management & Accounting, 20*(2), 105-134. http://dx.doi.org/10.1111/j.1467-646X.2009.01028.x

IHS. (2017a). *Country reports: Indonesia*. Retrieved from http://web.a.ebscohost.com.ezproxy.canberra.edu.au/ehost/detail/detail?vid=0&sid=be7a79c6-a485-4ece-9aa4-f1240a01a862%40sessionmgr4006&bdata=#AN=122281429&db=bth

IHS. (2017b). *Country reports: Australia*. Retrieved from http://web.a.ebscohost.com.ezproxy.canberra.edu.au/ehost/detail/detail?vid=0&sid=8e303003-6728-45f0-b4bb-97900fe62c9f%40sessionmgr4006&bdata=#AN=122027727&db=bth

Jansen, B.J., Zhang, M., Sobel, K., & Chowdury, A. (2009). Twitter power: Tweets as electronic word of mouth. *Journal of the Association for Information Science and Technology, 60*(11), 2169-2188. http://dx.doi.org/10.1002/asi.21149

Kannadhasan, M., & Nandagopal, R. (2010). Do company-specific factors influence the extent of usage of risk analysis techniques in strategic investment decisions? *ICFAI Journal of Financial Risk Management, 7*(4), 55-72.

Kester, G., Chang, R., Echanis, E., Haikal, S., Isa, M., Skully, M., & Wang, C. (1999). Capital budgeting practices in the Asia-Pacific region: Australia, Hong Kong, Indonesia. *Financial Practice & Education, 9*(1), 25-33.

Leach-López, M.A., Stammerjohan, W.W., & McNair, F.M. (2007). Differences in the role of job-relevant information in the budget participation-performance relationship among US and Mexican managers: A question of culture or communication. *Journal of Management Accounting Research, 19*(1), 105-136. http://dx.doi.org/10.2308/jmar.2007.19.1.105

Leon, F., Isa, M., & Kester, G. (2008). Capital budgeting practices of listed Indonesian firms. *Asian Journal of Business and Accounting, 1*(2), 175-192.

Lindsey, T. (2008). Indonesia: Law and society. Annandale, Sydney: Federation Press.

Liu, J., Meng, F., & Fellows, R. (2015). An exploratory study of understanding project risk management from the perspective of national culture. *International Journal of Project Management, 33*(3), 564-575. http://dx.doi.org/10.1016/j.ijproman.2014.08.004

National Committee of Corporate Governance. (2006). *Indonesia's code of good corporate governance*. Jakarta.

OECD. (2016). *OECD economic surveys: Indonesia 2016*. Paris, France: Author.

Patel, C. (2003). Some cross-cultural evidence on whistle-blowing as an internal control mechanism. *Journal of International Accounting Research, 2*(1), 69-96. http://dx.doi.org/10.2308/jiar.2003.2.1.69

Pike, R. (1988). An empirical study of the adoption of sophisticated capital budgeting practices and decision-making effectiveness. *Accounting and Business Research, 18*(72), 341-351. http://dx.doi.org/10.1080/00014788.1988.9729381

Reisinger, Y., & Turner, L. (1997). Cross-cultural differences in tourism: Indonesian tourists in Australia. *Tourism Management, 18*(3), 139-147. http://dx.doi.org/ 10.1016/S0261-5177(96)00115-X

Rossi, M. (2014). Capital budgeting in Europe: Confronting theory with practice. *International Journal of Managerial and Financial Accounting*, 6(4), 341-356. http://dx.doi.org/10.1504/IJMFA.2014.066403

Sakai, M. (2010). Growing together in partnership: Women's views of the business practices of an Islamic Savings and Credit Cooperative (Baitul Maal wat Tamwil) in Central Java, Indonesia. *Women's Studies International Forum, 33*(4), 412-421. http://dx.doi.org/10.1016/j.wsif.2010.02.015

Sandahl, G., & Sjögren, S. (2003). Capital budgeting methods among Sweden's largest groups of companies: The state of the art and a comparison with earlier studies. *International Journal of Production Economics, 84*(1), 51-69. http://dx.doi.org/ 10.1016/S0925-5273(02)00379-1

Seymour-Smith, C. (1986). *Macmillan dictionary of anthropology*. London: Palgrave Macmillan.

Shields, M., Chow, C., Kato, Y., & Nakagawa, Y. (1991). Management accounting practices in the U.S. and Japan: Comparative survey findings and research implications. *Journal of International Financial Management & Accounting, 3*(1), 61-77. http://dx.doi.org/10.1111/j.1467-646X.1991.tb00091.x

Transparency International. (2017). Corruption perception index. Retrieved from https://www.transparency.org/news/feature/corruption_perceptions_index_2017

Triandis, H., McCusker, C., Betancourt, H., Iwao, S., Leung, K., Salazar, J. & Zaleski, Z. (1993). An etic-emic analysis of individualism and collectivism. *Journal of Cross-Cultural Psychology, 24*(3), 366-383. http://dx.doi.org/10.1177/0022022193243006

Truong, G., Partington, G., & Peat, M. (2008). Cost-of-capital estimation and capital-budgeting practice in Australia. *Australian Journal of Management, 33*(1), 95-121. http://dx.doi.org/10.1177/031289620803300106

Tsamenyi, M., Noormansyah, I., & Uddin, S. (2008). Management controls in family-owned businesses (FOBs): A case study of an Indonesian family-owned University. *Accounting Forum, 32*, 62-74. http://dx.doi.org/10.1016/j.accfor.2006.10.001

Van der Stede, W., Young, S., & Chen, C. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society, 30*(7-8), 655-684. http://dx.doi.org/ 10.1016/j.aos.2005.01.003

Verbeeten, F. (2006). Do organizations adopt sophisticated capital budgeting practices to deal with uncertainty in the investment decision? A research note. *Management Accounting Research, 17*(1), 106-120. http://dx.doi.org/ 10.1016/j.mar.2005.07.002

Wihantoro, Y., Lowe, A., Cooper, S., & Manochin, M. (2015). Bureaucratic reform in post-Asian Crisis Indonesia: The directorate general of tax. *Critical Perspectives on Accounting, 31*(April), 44-63. http://dx.doi.org/ 10.1016/j.cpa.2015.04.002

World Bank. (2016a). *Country profile: Australia*. Retrieved from http://data bank.worldbank.org/data/Views/Reports/ReportWidgetCustom.aspx? Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm= n&country=AUS

World Bank. (2016b). *Country profile: Indonesia*. Retrieved from http://data bank.worldbank.org/data/Views/Reports/ReportWidgetCustom.aspx? Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm= n&country=IDN

Yepes, J., & Cuartas, A. (2014). Capital budgeting practices: Empirical evaluation of company practices in the construction sector in Colombia. *Ecos de Economía, 18*(39), 143-163. http://dx.doi.org/10.17230/ecos.2014.39.7

The Impact of Institutional Distance on the Choice of Multinational Enterprise's Entry Mode: Theory and Empirical Evidence from Vietnam

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to investigate the impact of institutional distance between home and host countries on the choice of multinational enterprise's (MNE) entry mode into Vietnam.
Design/ Methodology/ Approach: Transaction cost theory was adopted to develop the hypotheses. The data of 82 MNE subsidiaries located in Vietnam were extracted from the World Bank Enterprise Survey. Probit regression was employed to estimate the impact of the institutional distance between home and host countries on the choice of the MNE's entry mode.
Research findings: The empirical results support the hypotheses, revealing that MNEs are more likely to enter Vietnam via acquisition

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investment rather than greenfield investment. This happens when both the formal and informal institutional distance between Vietnam and the home countries is large. Findings also suggest that the institutional distance between a host country with a transition economy and the home countries is an important element to take into account when MNEs decide to invest in a transition economy that contains high level uncertainties.

Theoretical contributions/ Originality: The adoption of the transaction cost theory enables this study to conceptualise the framework which is used to empirically test the effect of the institutional distance between Vietnam and home countries on the MNEs' entry mode decision. This study shows that the transaction cost approach offers insights into how the institutional distance between the host and home countries affect the choice of the MNEs' entry mode into a transition economy. This study contributes to international business literature by developing theoretical arguments about the role of the national institutional dissimilarities on the choice of the MNEs' entry mode in a transition economy.

Practitioner/ Policy implications: The implication drawn from this study is that MNEs investing through acquired subsidiaries are less burdened by environmental uncertainties since acquired subsidiaries offer more familarity with the formal institutions. This can help the MNEs to establish a close relationship with the local partners and the government. This also increases the MNEs' cross-cultural communication and knowledge thereby, enhancing the investment.

Research limitation: Further research should consider more parent firm characteristics so that implications for the MNEs' entry strategy are developed. Given the role of the different managers at the different levels, future study should capture the perception of these managers who are based at the headquarters so as to further examine the effect of institutional distance.

Keywords: Formal Institutional Distance, Informal Institutional Distance, Entry Mode, MNE, Subsidiary, Transition Economy.
JEL Classification: F23, M16

1. Introduction

Vietnam began to engage in economic liberalisation programmes in 1986. To mark the opening of its economy, a reform policy known as Doi Moi was introduced. This caused a significant inflow of foreign investments marked by multinational enterprises (MNEs) that showed a strong interest in investing in Vietnam although each had a different motivation for doing so (e.g., market seeking, resource seeking, strategic asset seeking, etc.). This phenomenon offers scholars a rich dataset to conduct research and to examine the implications of the institutional effect on the MNEs' entry mode into a transition economy. According to Werner (2002), the choice of foreign entry mode is one of the crucial strategies in an MNE's internationalisation process. The decision on whether to establish sub-units abroad by greenfield investment or by acquiring an established business in a foreign target market is very important for the MNEs (Slangen & Hennart, 2008). The reason is that MNEs often need local resources or market knowledge to achieve their strategic goals (Meyer, Estrin, Bhaumik, & Peng, 2009). These factors are crucial to the success of their overseas operation which is reflected by the subsidiary's performance and its competitive advantage (Chueke & Borini, 2014). Accordingly, the optimal mode of entry provides an important means for the MNEs to manage challenges in the local market (Meyer, 2001).

International business scholars (Anand & Delios, 2002; Hennart & Slangen, 2015; Dikova & van Witteloostuijn, 2007; Brouthers & Brouthers, 2000; Dikova, 2012; Brouthers, 2002; Chueke & Borini, 2014) have examined and analysed MNEs' entry modes. They found that the choice between greenfield investment and acquisition depended on a few factors such as the investing firm's resources and capabilities (Anand & Delios, 2002; Hennart & Slangen, 2015) and the firm's need to minimise transaction costs (Dikova & van Witteloostuijn, 2007; Brouthers & Brouthers, 2000; Dikova, 2012; Brouthers, 2002; Chueke & Borini, 2014). Most of these studies focussed on developed economies. Other scholars (Gelbuda, Meyer, & Delios, 2008; Meyer & Nguyen, 2005; Wright, Filatotchev, Hoskisson, & Peng, 2005; Dikova, 2012) however, indicated that the MNEs' strategies in transition economies differ significantly from that of developed economies due to different institutional frameworks. Institutional dissimilarity also affects the entry strategies of the MNEs into a transition economy (Meyer et al., 2009; Peng, 2003). For these reasons, it is believed that research within the context of a transition economy can be a good ground for evaluating and investigating how institutional distance between the country of origin of the investing firms and the host country with the transition economy can affect the MNEs' entry mode decision into foreign environments.

To address the aforementioned gap noted in the existing literature, this study conceptualises a theoretical framework that empirically tests the effect of the institutional distance between Vietnam and the home countries on the MNEs′ entry mode decision. This is accomplished by adopting the transaction cost theory (Williamson, 1981). In doing so, this study aims to show that a transaction cost approach can offer insights into how the institutional distance between the host and home countries can affect the choice of the MNEs′ entry mode into a transition economy. Theoretical arguments related to the role of the national institutional context dissimilarities and the choice of the MNEs′ entry mode as investors in a transition economy are developed. By doing so, we add new insights to illustrate how institutional distance affects the choice of the MNEs′ entry mode into a transition economy. It is believed that our theoretical arguments provide a new platform in international business literature thereby, offering a future research agenda.

This paper focusses on multinational subsidiaries that are established in Vietnam for several reasons. First, Vietnam has gone through a major economic transition process but there are still weaknesses in the country's formal and informal institutions which remain to be major obstacles to business (Meyer & Nguyen, 2005; Nguyen, Le, & Bryant, 2013). Despite the positive changes that were introduced by the Enterprise Law in 2000, the level of competitiveness and the level of international integration of local counterparts in Vietnam still differ vastly from those of developed economies. Hence, the type of relationships established by foreign firms with the local partners in these economies also differed widely (Giroud, 2007; Meschi, Phan, & Wassmer, 2016; Vo & Le Hoang, 2017). Second, the rich stream of entry mode research has focused mainly on countries with developed economies (Slangen & Hennart, 2008; Brouthers & Brouthers, 2003), Eastern European economies (Dikova, 2012) and emerging economies (Chueke & Borini, 2014). Analyses of the effect of institutional distance affecting the choice of the MNE's entry mode within a transition economy in Vietnam, where economic reforms had been implemented but where political reforms were rejected, can create new insights. Such a situation exists because a transition economy environment of this nature bears additional uncertainties and complexities which can affect knowledge exchange between foreign subsidiaries and the local counterparts. This can impede their absorptive capacity (Meyer, 2004). Compared to the attributes of other transition economy types, it appears that the continuing presence of a Marxist political ideology can influence the values and behaviour of local managers such as those in Vietnam (Meschi et al., 2016; Vo & Le Hoang, 2017). This creates a socialist imprint on local partner firms which can lead to different institution-foreign firms and foreign firm-local partner relationships (Beugelsdijk, Slangen, Maseland, & Onrust, 2015; Beugelsdijk, Maseland, Onrust, van Hoorn, & Slangen, 2015). This transition context can provide useful insights into the MNEs' relation with local actors. For that reason, this study is grounded within the context of a transition economy such as Vietnam. It is hoped that the outcome can enhance the understanding of how the institutional distance between Vietnam and the home countries affect the choice of the MNEs' entry mode into a transition economy.

The rest of the paper is organised as follows. Section 2 reviews prior literature on underpinning theory and hypotheses development. Section 3 explains the research method. Section 4 reports the results. Section 5 discusses the findings and brings the paper to a conclusion.

2. Literature Review and Hypotheses Development

In international business literature, institutional distance refers to "the extent of dissimilarity between host and home institutions" (Xu & Shenkar, 2002, p. 610). Institutional distance is further categorised into formal and informal institutional distance. Formal institutional distance is reflected in the regulatory distance while informal institutional distance is captured by the national cultural distance (De Jong, Vo, Jindra, & Marek, 2015; Li, Jiang, & Shen, 2016). Several studies (Kogut & Singh, 1988; Brouthers & Brouthers, 2000) revealed that institutional differences between countries affect entry costs, process of transferring management practices and the risk of operating in institutionally distant countries (Kogut & Singh, 1988; Brouthers & Brouthers, 2000). With the transaction cost theory, scholars (Brouthers, 2002; Dikova, 2012) have argued that institutional distance impede the transferring of organisational practices from the headquarters to the foreign sub-units. Such transfers are more difficult to achieve if the subsidiary is a locally acquired firm located in a country with institutional dissimilarities. Therefore, when the institutional distance between the home and host countries increases, the business costs and the levels of uncertainty related to business operations in the host countries also increase (Dikova, 2012; Chueke & Borini, 2014).

Literature (Cho & Padmanabhan, 1995) has classified foreign market entry modes into two groups: (1) acquisition – acquiring an existing local firm (or joint-venture), and (2) greenfields – setting up a completely new plant (Harzing, 2002). Choosing between acquisition and greenfields suggests different types of tradeoffs between the level of control, degree of investment risk, resource commitments and information search (Dikova, 2012). While acquisition allows access to the local resources, it also creates challenges for the MNEs in terms of managing the acquired firm and in dealing with the organisational and cultural clashes (Capron, Mitchell, & Swaminathan, 2001). Acquiring firms often have to pay for unwanted assets. This is because making an accurate assessment value of a foreign acquisition target is either difficult or impossible (Dikova, 2012; Lee & Lieberman, 2010). In contrast, greenfields allow the transfer of strategic assets from the headquarters to the subsidiaries. This can generate competitive advantages such as allowing the MNEs to have a higher level of control over their foreign subsidiaries thereby, gaining full benefits from these subsidiaries (Hennart & Park, 1993). Greenfields however, require higher levels of information gathering and processing. They also require more time for the MNEs to establish business relations in the host country (Lee & Lieberman, 2010).

From the standpoint mentioned above, several scholars have observed that MNEs tend to enter institutionally distant countries through greenfields so as to avoid any intra-organisational conflicts and difficulties in integrating the foreign sub-units. Other scholars (Xu & Shenkar, 2002; Dikova, 2012) however, stress that involving and obtaining legitimacy in an institutional distant country is more crucial for the MNEs rather than internal consistency (Zaheer, 1995). This is because making an entry into the target market through acquisition lowers the risk. Given the debate, we argue that institutional distance between host countries with transition economy and home countries cannot be ignored when studying foreign entry modes of the MNEs.

Using the transaction cost theory as a framework, several studies (Williamson, 1981; Hennart & Park, 1993) suggested that MNEs focus on the costs of alternative organisational arrangements. However, Hennart and Park (1993) suggested that MNEs prefer modes of operation that internalises sensitive interfaces. In transition economies, the main dilemma faced by MNEs is probably the need to choose between greenfields on one side and partnering with local firms through acquisition (or joint venture) on the other. The reason is that MNEs entering a transition economy must first choose between accessing local context-specific resources and capabilities in an embedded form or entering the transition economy on their own. Due to the large institutional distance, MNEs often need local resources such as institutional or market knowledge that is embedded within existing organisations (local firms) (Meyer & Estrin, 2001; Anand & Delios, 2002). Adopting the transaction cost approach, this study argues that MNEs are more likely to choose acquisitions (or joint venture) when both the formal and informal institutional distance between the home countries and host countries is large.

The large formal institutional distance between the home and host countries is likely to favour an MNE wishing to establish a subsidiary in an institutionally distant host country whether via greenfields or acquisitions. Each country has its own institution and this generates an institutional distance between the home and host nations (Gaur & Lu, 2007). The institutional distance becomes larger when noted in the context of a developed nation and a transition nation. This is because institutions in transition countries carry a higher level of uncertainty (Harzing & Pudelko, 2016) and create more challenges for the MNEs.

When choosing greenfields, MNEs need to adapt to the requirements, rules and regulations of the local government and local markets in order to operate in the host country. Some MNEs may even be discriminated against by the local government (Dikova, 2012; Delios & Henisz, 2003). When MNEs enter a host country because of the high formal institutional distance by selecting greenfields investment, they face difficulties in terms of labour resources and other input. They also face difficulties in establishing the distribution system because of the discrimination hazards posed by the local government (Eden & Miller, 2004). Such difficulties increase the business cost for the MNEs in the host country.

In contrast, acquired subsidiaries reduce the impact of the environmental uncertainty for the MNEs because they are more familiar with the formal institutions; they also have close relationships with the government (Slangen, 2011; Kostova & Zaheer, 1999). Another advantage is that acquired subsidiaries can access the local resources more easily (Spencer & Gomez, 2011) and they bring in local market knowledge (Wilson, 1980) thereby enabling the MNEs to be locally responsive. Such knowledge is typically location-bound, that is, applicable only in a particular country or a small set of formally institutional similar countries. Since market knowledge is, to a large extent, tacit and experiential, it is difficult to purchase knowledge in a disembodied form (Hennart, 1991). Moreover, it is time-consuming to develop this kind of knowledge through greenfield investments (Johanson & Vahlne, 1977) hence, it is more efficiently obtained through acquisitions (Harzing, 2002). Local market knowledge is particularly important to MNEs seeking to expand into formal institutional distant countries (Tan & Mahoney, 2003). The reason is because such countries have radically different regulations and rules which are unfamiliar or uncomfortable to MNEs (Hofstede, 2001). Based on this, this study proposes the following hypothesis:

H_1: The greater the formal institutional distance between the home and host countries, the greater an MNE tends to enter the formal institutional distant country through acquisitions rather than through greenfields.

Informal institutions (cultural aspects) condition the MNEs' entry strategy (Peng, Sun, Pinkham, & Chen, 2009). They also involve higher management costs for the MNEs to operate abroad. Managers from home countries experience cultural dissimilarities from employees in foreign subsidiaries. In this sense, as the informal institutional distance between the home and host countries increases, the MNEs are less likely to choose greenfields investment. There are several reasons. First, obtaining legitimacy for entering a foreign institution is the crucial responsibility of the MNEs. In this regard, understanding the values, norms and cognition of the host country requires intensive cross-cultural input. Thus, managers need to acquire a greater knowledge about the culture of the others since cultures are often tacit (Boyacigiller, Goodman, & Phillips, 2004). Unlike greenfield subsidiaries, acquired subsidiaries are easier for the MNEs since they can communicate easily with the locals. They are likely to obtain knowledge of the local organisations, making this easier for the MNEs' entry. Greenfield subsidiaries, in contrast, have less cultural knowledge to draw upon when communicating with local peers thereby, inhibiting the MNEs' efforts to gain legitimacy (Meyer, 2001; Li et al., 2016). Based on this, it is deduced that where informal institutional distance is high, interaction with local actors will be particularly crucial as it boosts the importance of generating links with local partners so as to gain local legitimacy. This leads us to propose that when the MNEs need to obtain local legitimacy to reach local business networks, the MNEs will outweigh other considerations. Based on this, this study proposes that:

H_2: MNEs prefer to enter an informally institutional distant country through acquisitions rather than through greenfields.

3. Research Methodology

3.1 Data

To test the hypotheses, we utilised the 2015 dataset on Vietnam. This was extracted from the World Bank Enterprise Survey. A questionnaire that covered a broad range of business environment areas ranging from access to finance, types of establishment, firm and industry characteristic, firm performance measures and so on was administered. In the 2015 Vietnam survey, 996 firms operating in Vietnam were investigated. The population of the current study is made up of foreign investors which had established affiliates in Vietnam. This study only selects firms that are partly- or wholly-owned by foreign investors from the 2015 Vietnam survey. A total of 82 out of 996 firms were foreign-owned. Their headquarters stemmed from 14 different countries. This information allowed us to calculate the formal and informal institutional distances between the home and host countries (14 country pairs). To measure those variables, other data source such as the World Development Indicators' (WDI) database were consulted. This database carries six dimensions of governance quality that are identified by Kaufmann, Kraay, and Mastruzzi (2006) to reflect a country's formal institution. This enabled us to measure the formal institutional distance between the home and host countries (Dikova, 2012). This study also used Hofstede's cultural dimensions obtained from his website to capture the informal institutional distance between the home and host countries (De Jong et al., 2015).

3.2 Variables and Measures

3.2.1 Dependent Variable

The dependent variable of our study is entry mode which is defined as "a structural agreement that allows a firm to implement its product market strategy in a host country. This can be done either by carrying out only the marketing operations (i.e., via export modes) or carrying out both the production and marketing operations, either on its own or in partnership with others (contractual modes, joint ventures, wholly owned operations)" (Sharma & Erramilli, 2004, p. 2). We measure our dependent variable with a dummy variable which equals one when the MNE has established a subsidiary through full or partial acquisition or a joint venture, and zero if otherwise (i.e., in cases of greenfield investments – wholly owned subsidiaries) (Slangen & Hennart, 2008).

3.2.2 Independent Variable

Our independent variable is institutional distance which is defined as "the extent of similarity or dissimilarity between the formal (or regulative) and informal (cultural) aspects of the institution of any two countries" (Gaur & Lu, 2007, p. 87). We measure formal institutional distance by using the six dimensions identified by Kaufmann et al. (2006): voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption (Dikova, 2012). Kogut and Singh's (1988) formula is applied to calculate the formal institutional distance between the home and host countries via the following equation:

$$ID_{vj} = \frac{\sum_{i=1}^{6}\left\{\left(I_{ij} - I_{iv}\right)^2 / V_i\right\}}{6} \tag{1}$$

where ID_{vj} is formal institutional distance index between Vietnam and home countries; I_{ij} is institutional dimension i^{th} of home country j^{th}; I_{iv} is institutional dimension i^{th} of Vietnam, Vietnam is reflected by "V"; and V_i is variance of institutional dimension i^{th}.

Based on formula (1) and the data source noted in the preceding section, institutional distance between home country and Vietnam is measured. A larger value represents greater institutional distance between home country and Vietnam.

Informal institutional distance is captured by the cultural distance between the home and host countries (Slangen & Beugelsdijk, 2010). This variable is measured based on the difference of the six cultural dimensions introduced by Hofstede (1980): power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence. These six dimensions are scaled from 0 to 100 (per cent). The larger the scale that is assigned to each of the six dimensions the country has, the higher the power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence gained. In addition, Kogut and Singh's (1988) formula is used to measure the cultural distance between Vietnam and the home countries. The formula is as follows:

$$CD_{vj} = \frac{\sum_{i=1}^{6}\left\{\left(I_{ij} - I_{iv}\right)^2 / V_i\right\}}{6} \tag{2}$$

where CD_{vj} is the index of cultural difference between Vietnam and home countries; I_{ij} is the i^{th} cultural aspect of j^{th} home countries; I_{iv} is the

i^{th} cultural aspect of Vietnam, V is the abbreviation of Vietnam; V_i is the variance of the i^{th} cultural aspect.

Based on formula (2) and the secondary data (about the national culture) that were obtained from Hofstede's website, the cultural distance index is calculated. The greater the index value, the greater the cultural distance between Vietnam and the home country.

3.2.3 Control Variables

To account for investor firm-level effects, this study included several control variables in the analysis. These control variables were used in past entry mode studies. Results show that they significantly affect the foreign entry mode choice of MNEs. In this study, we first added parent-company age which is calculated by using the difference between the year of the parent firm's founding and 2015. The information about the founding year is taken from the website of the parent company (Harzing, 2002; Chueke & Borini, 2014). It is deemed that the older the parent company, the higher the company's experience will be. This allows us to explore the market more successfully through the acquisition investment (Chueke & Borini, 2014). Second, we control internationality which is measured as the share of international sales to total sales. This information is reported in the questionnaire of the World Bank Enterprise Survey. It appears that firms which are more international have a higher propensity to choose more integrated entry modes (Zejan, 1990; Dikova, 2012). It seems that MNEs with greater international experience are more reluctant to conduct acquisitions because they seek greater returns. This is because the risk of operating abroad decreases as international experience increases. Third, we have the subsidiary's R&D intensity (empirically used in the past) to serve as determinants for the MNE's entry mode choice (Simões, Biscaya, & Nevalo, 2002; Vo, 2013; Vo & Le Hoang, 2017). This variable is measured by the percentage of the subsidiary's R&D expenses in the subsidiary's total sales (this information is reported from the questionnaire). This item is used as a proxy for R&D. Firms with high R&D intensity prefer to enter the host country through greenfields because they aim to explore strategic assets (i.e., knowledge). Fourth, we control the subsidiary size which is measured by initially taking the natural logarithm of the number of its employees. Large firms are assumed to have a predilection for entry through acquisitions because they have more available resources and capital than smaller companies. Large firms also have a limited timeframe to recruit and train managers (Cho & Padmanabhan, 1995). Fifth, we include a dummy to distinguish between the manufacturing (defined as 1) and service subsidiaries (defined as 0) (Brouthers & Brouthers, 2003). The reason is that manufacturing firms prefer to enter through acquisitions rather than greenfields because they adopt strategies to exploit the lower cost of natural resources in the host country (Chueke & Borini, 2014). Measurement for the variables in the model is summarised in Table 1.

Table 1: Measurement of Variables in the Model

Variables	Measurement	Reference
Dependent variable		
Entry mode (Y)	Dummy (1: a full or partial acquisition or a joint venture; and 0: a greenfield investment – wholly owned subsidiary)	Slangen & Hennart (2008)
Independent variables		
Formal institutional distance	Six dimensions identified by Kaufmann et al. (2006); and applied the formula of Kogut and Singh (1988)	Kaufmann et al. (2006); Kogut & Singh (1988)
Formal institutional distance	Six cultural dimensions introduced by Hofstede (1980); and applied by Kogut and Singh (1988)	Hofstede (1980); Kogut & Singh (1988); Slangen & Beugelsdij (2010)
Control variables		
Parent company's age	The difference between the year of the parent firm's founding and 2015	Harzing (2002); Chueke & Borini (2014)
Firm's international experience	The share of international sales to total sales	Zejan (1990)
Subsidiary's R&D intensity	The percentage of subsidiary's R&D expenses in subsidiary's total sales	Vo (2013); Vo & Le Hoang (2017)
Subsidiary size	The natural logarithm of the number of its employees	Cho & Padmana-bhan (1995)
Industry type	Dummy (1: Manufacturing, 0: service)	Chueke & Borini (2014)

3.3 Estimation Method

With the measurement of the dependent variable shown earlier, we used Probit regression to estimate the effect of the formal and informal institutional distance between Vietnam and the home countries that can impact the choice of the MNEs' entry mode. This specification can be described in the following formula:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_0 + \varepsilon \quad (3)$$

where Y is the dependent variable – the choice of MNE's entry mode,

$$Y = \begin{cases} 1: \text{Acquisition/joint venture} \\ 0: \text{Greenfield} \end{cases}$$

β_0 is the intercept, the value of Y when X is zero,
$\beta_{1,2}$ is the regression coefficients of the independent variables,
$X_{1,2}$ is the observed values of the independent variables,
$\beta_{3\to 7}$ is the regression coefficients of the control variables,
$X_{3\to 7}$ is the observed values of the control variables,
ε is the error term of the model.

4. Empirical results

4.1 Descriptive Statistics and Correlation

Table 2 illustrates the means, standard deviation and correlations for the choice of the MNEs' entry mode. Our measurement of the choice of the MNEs' entry mode was dichotomous thus, the Probit estimates were considered to be appropriate.

In preparing the data for the regression analysis, we performed the usual tests to obtain the reliable estimates (Hair, Hult, Ringle, & Sarstedt, 2014). The latter yielded satisfactory results: neither heteroskedasticity nor non-normality was an issue (White and Jarque-Bera tests with p=0.29 and p=0.33, respectively). The maximum value of the correlation coefficients was 0.302 which is well below the threshold of 0.80 thereby, indicating that there were no issues with multicollinearity (Hair et al., 2014). We also tested for possible biases caused by collinearity among the variables by calculating the variance inflation factor (VIF) for each of the regression coefficients (see Table 2). The VIF values for all the variables noted in the model was below 3.0, well below the cut-off value of 5.6 recommended by Hair et al. (2014). The likelihood ratio tests of the chi-square distributions for all the models were significant thereby,

Table 2: Mean, Standard Deviation and Correlation: The Dependent Variable is the Choice of MNE's Entry Mode (n=82)

Variables	VIF	Mean	Std.Dev.	EM	FD	ID	PC	IN	SI	SS	MS
EM		0.420	0.101	1.000							
FD	2.01	1.822	0.906	0.148*	1.000						
ID	2.11	1.916	1.002	0.228***	0.041	1.000					
PC	1.95	6.288	3.242	-0.061	-0.058	0.053	1.000				
IN	2.08	39.76	9.070	0.011**	-0.141	-0.086	0.133	1.000			
SI	1.87	35.29	12.01	-0.132*	0.192	0.063	0.293*	0.009	1.000		
SS	1.20	3.849	1.271	0.096	-0.083	0.247	0.002	0.056	0.302*	1.000	
MS	1.02	0.365	0.091	0.045	0.024	0.220	0.094	0.048	0.149*	0.157	1.000

Note: EM = Choice of MNE's entry mode, FD = Formal institutional distance (regulative distance), ID = Informal institutional distance (cultural distance), PC = Parent company's age (log), IN = Internationality (%), SI = Subsidiary's R&D intensity (%), SS = Subsidiary's size (log), MS = Manufacturing/services. *, ** and *** indicate statistically significant levels at 10%, 5%, and 1%, respectively.

indicating that the final model fitted the data significantly better than a model without any predictors.

4.2 Findings

The results obtained from the Probit regression analyses are summarised in Table 3. The regression results offer two conclusions. Firstly, the various fit parameters show that the models we use fit the data increasingly well. Secondly, the choice of the MNEs' entry mode as shown in Table 3 indicates that the log likelihood value has improved from -186.02 in Model 1 to -82.17 in Model 4. Further, the estimates remain robust in terms of sign and significance levels. Model 1 includes control variables and a constant. The Pseudo-R^2 has improved from 32.6 per cent in Model 1 to 38.3 per cent in Model 4. The parameter estimates remain robust in terms of sign and significance level. The two effects of institutional distance – formal institutional distance and informal institutional distance are included separately. The results show that both the formal and informal institutional distances between Vietnam and the home countries are positively and significantly associated with the choice of the MNEs' entry mode into Vietnam (β = 0.041, $p<0.05$ for formal institutional distance; β = 0.02, $p<0.05$ for informal institutional distance). The results can be explained through the informal institutional distance perspective. When making comparisons between the greenfield subsidiaries and acquired subsidiaries, it is noted that the latter is able to communicate easily with the locals hence, more likely to obtain knowledge of the local organisation that is beneficial to the MNEs. Conversely, the greenfield subsidiaries have less cultural knowledge to draw upon when communicating with the local peers hence, inhibiting efforts to gain legitimacy (Meyer, 2001). In looking at the formal institutional distance, results show that the greenfield subsidiaries suffered many challenges. This implies that the MNEs need to adapt to the requirements, rules and regulations of the local government and local markets with possibilities of being discriminated by the local government (Dikova, 2012; Delios & Henisz, 2003). Clearly, the acquired subsidiaries can reduce the impact of the environmental uncertainty because they tend to have more familiarity with the formal institutions besides having close relationships with the government (Slangen, 2011; Kostova & Zaheer, 1999).

Model 4 includes both the formal and informal institutional distances between Vietnam and the home countries of the MNEs. The

Table 3: The Effect of Formal and Informal Institutional Distances on the Choice of MNE's Entry Mode in Vietnam (Probit estimates)

	MNE's entry mode choice				Marginal effect (dy/dx)
	(1)	(2)	(3)	(4)	
Intercept	0.32 (0.10)***	1.17 (0.16)***	1.26 (0.29)***	3.43 (0.97)***	
Control variables					
PC	-0.07 (0.06)	-0.08 (0.05)	-0.07 (0.101)	0.09 (0.09)	0.03 (0.06)
IN	0.12 (0.06)**	0.13 (0.06)**	0.19 (0.10)**	0.15 (0.07)**	0.08 (0.039)**
SI	-0.47 (0.20)***	-0.45 (0.17)***	-0.35 (0.12)***	0.28 (0.10)***	-0.15 (0.07)**
SS	0.31 (0.10)***	0.28 (0.09)***	0.29 (0.12)***	0.37 (0.01)***	0.16 (0.01)***
MS	-0.01 (0.02)	-0.02 (0.03)	-0.01 (0.02)	-0.01 (0.01)	-0.00 (0.01)
Main variables					
FD		0.041 (0.021)**		0.106 (0.05)**	0.070 (0.01)**
ID			0.020 (0.01)**	0.094 (0.01)***	0.030 (0.01)***
N	82	82	82	82	
Pseudo-R^2	0.326	0.349	0.338	0.383	
Log likelihood	-186.02	-145.12	-111.61	-82.17	
*p*_value	0.002	0.000	0.000	0.000	

Note: Formal institutional distance, ID = Informal institutional distance, PC = Parent company's age (log), IN = Internationality (%), SI = Subsidiary's R&D intensity (%), SS = Subsidiary's size (log), MS = Manufacturing/services. Standard errors are listed in parentheses. * $p<0.1$, ** $p<0.05$, and *** $p<0.01$.

model shows that both are positively and significantly related to the MNEs' choice of entry mode. The result also shows that the MNEs investment in Vietnam would more likely be through acquisitions (or joint-ventures) rather than greenfield investments when both the formal institutional distance (β = 0.106, p<0.05), and informal institutional distance (β = 0.094, p<0.01) between Vietnam and the home countries is large. Taken together, it can be concluded that H_1 and H_2 cannot be rejected due to the evidence noted. The results generally support the transaction cost theory thereby, implying that MNEs often need local resources such as institutional or market knowledge that is embedded within existing organisations (local firms). The last column in Table 3 presents the marginal effect of the formal and informal institutional distance between Vietnam and the home countries on the choice of the MNEs' entry mode. The marginal effect analysis shows that as the formal and informal institutional distance between Vietnam and the home countries increases, the possibility of the MNEs investing in Vietnam through acquisitions also increases.

Here, only the significant control variables are presented. The significant results shown for the control variables are in line with the predictions of the transaction cost theory and consistent with the findings of previous studies (Meyer & Estrin, 2001; Dikova, 2012; Brouthers, 2002). This study has shown that more international MNEs in the sample population employed the less-integrated entry mode (an acquisition or joint-venture) over a more-integrated mode (a greenfield) ($\beta = 0.15$, $p<0.05$). Table 3 shows that a higher R&D intensity has a significant and positive effect on the choice of the MNEs' entry mode into Vietnam ($\beta = 0.28$, $p<0.05$). This result is consistent with the prediction of the transaction cost theory which states that technologically intensive MNEs have a preference for greenfields investment in Vietnam instead of acquisitions or joint-ventures (Brouthers & Brouthers, 2003; Dikova, 2012). In line with the transaction cost theory argument, Table 3 reveals that subsidiary size is positively associated with entry mode through acquisition establishment (or joint-venture) rather than through greenfield establishment ($\beta = 0.37$, $p<0.01$) (Dikova, 2012; Chueke & Borini, 2014).

4.3 Robustness Analyses

In order to explore the robustness of the above findings affecting the choice of the MNEs' entry mode into Vietnam, we perform two additional analyses which are reported in Table 4.

Our results are determined for robustness in measuring the dependent variable i.e., the choice of the MNE's entry mode. We estimated the Logit model by using the same control variables and main variables as our Probit model as noted in Panel A. This does not affect the regression results ($\beta = 0.091$, $p<0.05$ for formal institutional distance, and $\beta = 0.080$, $p<0.01$ for informal institutional distance). As an additional analysis for robustness as shown in Panel B, we alternatively measure formal (regulative) and (cultural) informal institutional distance by using absolute scores that were provided by Xu, Pan, and Beamish (2004) (for a comprehensive review, see Xu et al., 2004). The Probit regression revealed that the results did not alter ($\beta = 0.232$, $p<0.05$ for formal institutional distance, and $\beta = 0.142$, $p<0.05$ for informal

Table 4: Robustness Analysis of the Choice of MNE's Entry Mode in Vietnam

	Original results	Additional tests	
	Initial results extracted from Table 2 [Model (4)]	Panel A: Logit regression	Panel B: Alternative measure for formal and informal institutional distances
Intercept	3.43 (0.97)***	2.68 (0.62)***	1.25 (0.62)**
Control variables			
PC	0.09 (0.03)***	0.07 (0.03)***	0.16 (0.05)***
IN	-0.15 (0.07)**	-0.12 (0.06)**	-0.09 (0.05)**
SI	-0.28 (0.10)***	-0.34 (0.12)***	-0.08 (0.04)**
SS	0.37 (0.01)***	0.29 (0.05)***	0.22 (0.12)*
MS	-0.01 (0.01)	-0.01 (0.09)	-0.01 (0.02)
Main variables			
FD	0.106 (0.05)**	0.091 (0.04)**	0.232 (0.12)**
ID	0.094 (0.01)***	0.080 (0.02)***	0.142 (0.07)**
N	82	82	82
Pseudo-R^2	0.383	0.372	0.349
Log likelihood	-82.17	-87.69	-96.22
*p*_value	0.000	0.000	0.000

Note: Formal institutional distance, ID = Informal institutional distance, PC = Parent company's age (log), IN = Internationality (%), SI = Subsidiary's R&D intensity (%), SS = Subsidiary's size (log), MS = Manufacturing/services. Standard errors are listed in parentheses. * $p<0.1$, ** $p<0.05$ and *** $p<0.01$.

institutional distance). The two additional analyses further confirm that the results are robust.

5. Discussion, Conclusion and Further Research

This study advances our understanding of the choice of the MNEs' entry mode as investors in a transition economy – in this case, Vietnam. We built on the transaction cost theory to predict a linear relationship between the institutional distance of Vietnam and the home countries and the choice of the MNEs' entry mode. Building on a dataset of 82 multinational subsidiaries in Vietnam, the empirical results show that the MNEs are more likely to enter into the transition economy of Vietnam via acquisitions rather than greenfield investments. This occurs when both the formal and informal institutional distance between Vietnam and the home countries are large. This outcome suggests that the institutional distance between a host country with a transition economy and the home countries is an important element to take into account when MNEs decide on investing in a transition economy that has a high level of uncertainty. Given these results, it can be said that this study contributes to the academic discussion and implication about the choice of the MNEs' entry mode in several ways.

First, this study finds that when the formal institutional distance between a transition country – Vietnam and the home countries is large, the MNEs are likely to choose acquisitions for entering Vietnam. This result is consistent with the transaction cost theory and previous studies which stressed that the distance between a home nation and a host nation (with a transition economy) becomes larger because the institution in the transition country carries a high level of uncertainty (Hennart & Park, 1993; Delios & Henisz, 2003; Dikova, 2012). Due to the differences of the legal environments between the home and host country, MNEs need to adapt to the requirements, rules and regulations of the local government and local markets with possibilities of being discriminated by the local government (Dikova, 2012; Delios & Henisz, 2003). MNEs investing through acquired subsidiaries can reduce the impact of the environmental uncertainty because acquired subsidiaries are more familiar with the formal institutions thereby establishing a close relationship with the local partners and government (Kostova & Zaheer, 1999). The result of this study is in line with the argument of Harzing (2002) who stated that acquisitions enable MNEs to gain local legal knowledge hence, enabling the MNEs to be locally responsive. In the context of this study, the Vietnamese government's policy revolution has significantly increased the support for foreign investors. These MNEs have been eased in terms of their integration with domestic firms.

Second, this study finds that MNEs are more likely to choose acquisitions instead of greenfield investments when the informal institutional distance between Vietnam and the home countries is large. This result is also consistent with the argument of previous studies which stated that when the informal institutional distance between the home and host countries is high, the interaction with local actors would also be particularly crucial. Such interactions strengthen the importance of generating links with the local partners which assists in the effort to gain local legitimacy in the host country (Meyer, 2001; Boyacigiller et al., 2004). In other words, entering into a transition nation incurs a high level of cultural dissimilarity therefore, MNEs and the managers need further understanding of the values, norms and cognition of such countries (Meyer & Estrin, 2001). Since intensive cross-cultural communication is crucial, MNEs prefer acquisition establishments more than others.

The limitations of this study can serve as routes for follow up research. Firstly, the data used in this study are collected at the MNEs' affiliate level. Although several characteristics of the parent firm are included in this study, other characteristics of the parent firms can affect the MNEs' foreign investment strategy due to different institutional contexts. For example, operating in a country with high institutional dissimilarity, parent firms with high international experiences can seek greater returns thereby reducing the risk of operating abroad (Chueke & Borini, 2014). These issues are not captured by the current study hence, future research should take as many parent company characteristics as possible into account so that implications for the MNEs' entry strategy can be better developed. Secondly, the current study does not capture the perception of the managers at their headquarters so as to understand the effect of the institutional distance between the host and home countries on the choice of the MNEs' entry mode (Slangen, 2011; Hennart & Slangen, 2015). Thus, it is recommended that the role of the different managers at the different levels based in the headquarters be considered. Some managers may be granted a low decision-making autonomy within the local market and this can limit their engagement activities with the local partners (Vo, 2013). An outcome of this nature can impede the level of local responsiveness and indirectly, decrease the absorption of local knowledge (Vo & Le Hoang, 2017). In addition, this study has no input which explains the role of the headquarters in shaping and designing the local networks since headquarters are expected to manage the complexities of multiple engagements (Meyer, 2004). Therefore, this study is not able to distinguish the role of the headquarters yet, in terms of responding to the different transition economies with the different institutional contexts. In this regard, future research should therefore take into account the entry activities of the MNEs at multi-levels.

References

Anand, J., & Delios, A. (2002). Absolute and relative resources as determinants of international acquisitions. *Strategic Management Journal, 23*(2), 119-134. http://dx.doi.org/10.1002/smj.215

Beugelsdijk, S., Maseland, R., Onrust, M., van Hoorn, A., & Slangen, A. (2015). Cultural distance in international business and management: From mean-based to variance-based measures. *The International Journal of Human Resource Management, 26*(2), 165–191. http://dx.doi.org/10.1080/09585192.2014.922355

Beugelsdijk, S., Slangen, A., Maseland, R., & Onrust, M. (2015). The impact of home–host cultural distance on foreign affiliate sales: The moderating role of cultural variation within host countries. *Journal of Business Research, 67*(8), 1638-1646. http://dx.doi.org/10.1016/j.jbusres.2013.09.004

Boyacigiller, N.A., Goodman, R.A., & Phillips, M.E. (2004). *Crossing cultures: Insights from master teachers*. New York, NY: Routledge.

Brouthers, K.D. (2002). Institutional, cultural and transaction cost influences on entry mode choice and performance. *Journal of International Business Studies, 33*(2), 203-221.

Brouthers, K.D., & Brouthers, L.E. (2000). Acquisition or greenfield start-up? Institutional, cultural and transaction cost influence. *Strategic Management Journal, 21*(1), 89-97. http://dx.doi.org/10.1002/(SICI)1097-0266(200001)21:1<89::AID-SMJ85>3.0.CO;2-8

Brouthers, K.D., & Brouthers, L.E. (2003). Why service and manufacturing entry mode choices differ: The influence of transaction cost factors, risk and trust. *Journal of Management Studies, 40*(5), 1179-1204. http://dx.doi.org/10.1111/1467-6486.00376

Capron, L., Mitchell, M., & Swaminathan, A. (2001). Asset divesture following horizontal acquisitions: A dynamic view. *Strategic Management Journal, 22*(9), 817-844. http://dx.doi.org/10.1002/smj.175

Cho, K.R., & Padmanabhan, P. (1995). Acquisition versus new venture: The choice of foreign establishment mode by Japanese firms. *Journal of International Management, 1*(3), 255-285.

Chueke, G.V., & Borini, F.M. (2014). Institutional distance and entry mode choice by Brazilian firms: An institutional perspective. *Management Research: The Journal of the Iberoamerican Academy of Management, 12*(2), 152-175. http://dx.doi.org/10.1108/MRJIAM-05-2012-0484.

De Jong, G., Vo, V.D., Jindra, B., & Marek, P. (2015). Does the country context distance determine subsidiary-decision making autonomy? Theory and evidence from European transition economies. *International Business Review, 24*(5), 874-889. http://dx.doi.org/10.1016/j.ibusrev.2015.04.003

Delios, A., & Henisz, W.J. (2003). Political hazards, experience, and sequential entry strategies: The international expansion of Japanese firms, 1980–1998. *Strategic Management Journal, 24*(11), 1153-1164. http://dx.doi.org/10.1002/smj.355

Dikova, D. (2012). Entry mode choices in transition economies: The moderating effect of institutional distance on managers' personal experiences. *Journal of East-West Business, 18*(1), 1-27. http://dx.doi.org/10.1080/10669868.2012.675807

Dikova, D., & van Witteloostuijn, A. (2007). Foreign direct investment mode choice: Entry and establishment modes in transition economies. *Journal of International Business Studies, 38*(6), 1013-1033. http://dx.doi.org 10.1057/ palgrave.jibs.8400297

Eden, L., & Miller, S.R. (2004). Distance matters: Liability of foreignness, institutional distance and ownership strategy. In M.A. Hitt & J.L.C. Cheng (Eds.), *Theories of the multinational enterprise: Diversity, complexity and relevance* (pp. 187-221). West Yorkshire: Emerald Publishing Limited. http://dx.doi.org/10.1016/S0747-7929(04)16010-1

Gaur, A.S., & Lu, J.W. (2007). Ownership strategies and survival of foreign subsidiaries: Impacts of institutional distance and experience. *Journal of Management, 33*(1), 84-110. http://dx.doi.org/10.1177/0149206306295203

Gelbuda, M., Meyer, K.E., & Delios, A. (2008). International business and institutional development in Central and Eastern Europe. *Journal of International Management, 14*(1), 1-11. http://dx.doi.org/10.1016/j.intman. 2007.05.011

Giroud, A. (2007). MNEs vertical linkages: The experience of Vietnam after Malaysia. *International Business Review, 16*(2), 159-176. http://dx.doi.org/ 10.1016/j.ibusrev.2006.11.003

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling*. Thousand Oaks, CA: Sage.

Harzing, A.W. (2002). Acquisitions vs greenfield investments: International strategy and management of entry modes. *Strategic Management Journal, 23*(3), 211-227. http://dx.doi.org/10.1002/smj.218

Harzing, A.W., & Pudelko, M. (2016). Do we need to distance ourselves from the distance concepts? Why home and host context might matter more than (cultural) distance. *Management International Review, 56*(1), 1-34. http://dx.doi.org/10.1007/s11575-015-0265-4

Hennart, J.F. (1991). The transaction costs theory of joint ventures: An empirical study of Japanese subsidiaries in the United States. *Management Science, 37*(4), 483-497. http://dx.doi.org/10.1287/mnsc.37.4.483

Hennart, J.F., & Park, Y.R. (1993). Greenfield vs. acquisition: The strategy of Japanese investors in the United States. *Management Science, 39*(9), 1054-1070. http://dx.doi.org/10.1287/mnsc.39.9.1054

Hennart, J.F., & Slangen, A.H.L. (2015). Yes, we really do need more entry mode studies! A commentary on Shaver. *Journal of International Business Studies, 46*(1), 114-122. http://dx.doi.org/10.1057/jibs.2014.39

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage Publications.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Johanson, J., & Vahlne, J.E. (1977). The internationalization process of the firm: A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies, 8*(1), 23-32.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2006). *Governance matters V: Aggregate and individual governance indicators for 1996-2005* (World Bank Policy Research Working Paper 4012). Washington, D.C.: World Bank. http://dx.doi.org/10.1596/1813-9450-4012

Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3), 411-432.

Kostova, T., & Zaheer, S. (1999). Organizational legitimacy under conditions of complexity: The case of the multinational enterprise. *Academy Management Review, 24*(1), 64-81. http://dx.doi.org/10.2307/259037

Lee, G.K., & Lieberman, M.B. (2010). Acquisition vs. internal development as modes of market entry. *Strategic Management Journal, 31*(2), 140-158. http://dx.doi.org/10.1002/smj.804

Li, J., Jiang, F., & Shen, J. (2016). Institutional distance and the quality of the headquarters–subsidiary relationship: The moderating role of the institutionalization of headquarters' practices in subsidiaries. *International Business Review, 25*(2), 589–603. http://dx.doi.org/10.1016/j.ibusrev.2015.09.009

Meschi, P.X., Phan, T.T., & Wassmer, U. (2016). Transactional and institutional alignment of entry modes in transition economies. A survival analysis of joint ventures and wholly owned subsidiaries in Vietnam. *International Business Review, 25*(4), 946-954. http://dx.doi.org/10.1016/j.ibusrev.2015.12.005

Meyer, K.E. (2001). Institutions, transaction costs and entry mode choice in Eastern Europe. *Journal of International Business Studies, 32*(2), 357-367. http://dx.doi.org/10.1057/palgrave.jibs.8490957

Meyer, K.E. (2004). Perspectives on multinational enterprises in emerging economies. *Journal of International Business Studies, 35*(4), 259-276. http://dx.doi.org/10.1057/palgrave.jibs.8400084

Meyer, K.E., & Estrin, S. (2001). Brownfield entry in emerging markets. *Journal of International Business Studies, 32*(3), 575-584. http://dx.doi.org/10.1057/palgrave.jibs.8490985

Meyer, K.E., Estrin, S., Bhaumik, S.K., & Peng, M.W. (2009). Institutions, resources and entry strategies in emerging economies. *Strategic Management Journal, 30*(1), 61-80. http://dx.doi.org/10.1002/smj.720

Meyer, K.E., & Nguyen, H.V. (2005). Foreign investment strategies and subnational institutions in emerging markets: Evidence from Vietnam. *Journal of Management Studies, 42*(1), 63-93. http://dx.doi.org/10.1111/j.1467-6486.2005.00489.x

Nguyen, T.V., Le, N.T.B., & Bryant, S.E. (2013). Sub-national institutions, firm strategies, and firm performance: A multilevel study of private manufacturing firms in Vietnam. *Journal of World Business, 48*(1), 68-76. http://dx.doi.org/10.1016/j.jwb.2012.06.008.

Peng, M.W. (2003). Institutional transitions and strategic choices. *Academy of Management Review, 28*(2), 275-296. http://dx.doi.org/10.5465/AMR.2003.9416341

Peng, M.W., Sun, L.S., Pinkham, B., & Chen, H. (2009). The institution-based view as a third leg for a strategy tripod. *Academy of Management Perspectives, 23*(3), 63-81. http://dx.doi.org/10.5465/AMP.2009.43479264

Sharma, V.M., & Erramilli, M.K. (2004). Resource-based explanation of entry mode choice. *Journal of Marketing Theory and Pratice*, 12(1), 1-18.

Simões, V.C., Biscaya, R., & Nevado, P. (2002). Subsidiary decision-making autonomy: Competences, integration and local responsiveness. In S.M. Lundan (Ed.), *Network knowledge in international business* (pp. 137-166). Cheltenham, UK: Edward Elgar.

Slangen, A.H.L. (2011). A communication-based theory of the choice between greenfield and acquisition entry. *Journal of Management Studies, 48*(8), 1699-1726. http://dx.doi.org/10.1111/j.1467-6486.2011.01013.x

Slangen, A.H.L., & Beugelsdijk, S. (2010). The impact of institutional hazards on foreign multinational activity: A contingency approach. *Journal of International Business Studies, 41*(6), 980-995. http://dx.doi.org/10.1057/jibs.2010.1

Slangen, A.H.L., & Hennart, J.F. (2008). Do multinationals really prefer to enter culturally distant countries through greenfields rather than through acquisitions? The role of parent experience and subsidiary autonomy. *Journal of International Business Studies, 39*(3), 472-490.

Spencer, J., & Gomez, C. (2011). MNEs and corruption: The impact of national institution and subsidiary strategy. *Strategic Management Journal, 32*(3), 280-300. http://dx.doi.org/10.1002/smj.874

Tan, D., & Mahoney, J.T. (2003). Explaining the utilization of managerial expatriates from the perspectives of resource-based, agency, and transaction cost theories. In J. L.C. Cheng & M.A. Hitt (Eds.), *Advances in international management* (pp. 179-205). Amsterdam: Elsevier JAI.

Vo, V.D. (2013). *Subsidiary decision-making autonomy in multinational enterprises*. Groningen, the Netherlands: Groningen University Press.

Vo, V.D, & Le Hoang, D.P. (2017). External linkages and product innovation: Theory and empirical evidence from subsidiaries in Vietnam. *International Journal of Economics and Management, 11*(1), 31-47.

Werner, S. (2002). Recent developments in international management research: A review of 20 top management journals. *Journal of Management, 28*(3), 277-305. http://dx.doi.org/10.1016/S0149-2063(02)00129-0

Williamson, O.E. (1981). The Economics of organization: The transaction cost approach. *American Journal of Sociology, 87*(3), 548-577.

Wilson, B.D. (1980). The propensity of multinational companies to expand through acquisitions. *Journal of International Business Studies*, 11(1), 59-65.

Wright, M., Filatotchev, I., Hoskisson, R.E., & Peng, M.W. (2005). Strategy research in emerging economies: Challenging the conventional wisdom. *Journal of Management Studies, 42*(1), 1-33. http://dx.doi.org/10.1111/j.1467-6486.2005.00487.x

Xu, D., Pan, Y., & Beamish, P.W. (2004). The effect of regulative and normative distances on MNE ownership and expatriate strategies. *Management International Review, 44*(3), 285-307.

Xu, D., & Shenkar, O. (2002). Institutional distance and the multinational enterprise. *The Academy of Management Review, 27*(4), 608-618.

Zaheer, S. (1995). Overcoming the liability of foreignness. *The Academy of Management Journal, 38*(2), 341-363.

Zejan, M.C. (1990). New ventures or acquisitions: The choice of Swedish multinational enterprises. *Journal of Industrial Economics, 38*(3), 349-355. http://dx.doi.org/10.2307/2098503

The Effects of Cash Conversion Cycle on Profitability: An Insight into the Agriculture and Food Industries in Thailand

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study investigates the relationship between cash conversion cycle and profitability that exists in the agriculture and food industries in Thailand. It specifically aims to examine the influence of production cycle, cash collection cycle, and cash payment cycle on profitability. In addition, it also aims to measure the influence of control variables such as size and debt ratios have on profitability.
Design/ Methodology/ Approach: This study analysed the data of 34 listed companies in agriculture and food industry in the Stock Exchange of Thailand from 2009 to 2013. Pearson's correlation and the regression analysis approach were used to examine the relationship between cash conversion cycle and profitability.
Research findings: The results indicate that cash conversion cycle (CCC) has a significant inverse relationship with profitability in the agriculture and food companies in Thailand. Further, production cycle and debt ratio were found to have a significant negative relationship with return on assets (ROA) while payment cycle and size have a positive relationship with return on equity (ROE). No significant relationship was found between cash collection cycle and profitability.
Theoretical contributions/ Originality: This study expands on the theoretical concepts of cash conversion cycle and its effects on profitability. Although studies have been done on manufacturing

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firms and industrial SMEs, no study has focused on the agriculture and food industries in Thailand.
Practitioner/ Policy implications: Insights gained from the findings can be used to improve working capital decisions and to provide policy directions in the management of agriculture and food industries in Thailand. This study is especially significant as it deals with perishable goods where time is of vital importance for the inventory, collection and payment cycle management since these factors have subsequent influence on firm profitability.
Research limitation: This study is limited to 34 listed firms in Thailand and for a period of five years due to the limited access to the annual reports of firms. In addition, some annual reports were only available in the Thai language which hindered the interpretation of data for the current study. Therefore, future studies should investigate the agriculture and food industries of other ASEAN countries by studying the same relationship for comparison.

Keywords: Cash Conversion Cycle, Production Cycle, Cash Collection Cycle, Payment Cycle, Profitability, Working Capital Management.
JEL Classification: M41, L25, Z12

1. Introduction

Robust financial health is vital for every organisation, not only for it to thrive but also to survive. Performance, risk and market value of firms have always been influenced by decisions involving working capital by finance managers. The link between liquidity and profitability is insightful. It is assumed that when the firm has higher liquidity, it has lower risks and lesser profitability (Bolek, 2013). One of the measurements used by organisations to assess how well a firm manages its liquidity and working capital is its cash conversion cycle (CCC).

Cash conversion cycle is determined from the time taken to purchase raw materials, through manufacturing until collecting money from sale of goods on account (Besly, 2000). The CCC is measured by deducting the payment deferral period made to suppliers from the total of inventory conversion period and receivables collection period (Yucel & Kurt, 2002). Payment deferral period (payment cycle) is the time a firm takes for raw materials to be ordered, received and paid for. Inventory conversion period (production cycle) is the time it takes to manufacture and sell its inventory. Receivables collection period (cash collection cycle) is the length of time a firm needs to collect the money from its credit sales. Firms can lessen their cash conversion cycles to boost profitability. This can be done by reducing the receivables collection period, decreasing the inventory conversion period, and lengthening the payment period (Panigrahi, 2013). Since businesses are particularly interested in looking for ways to continue and to increase their financial performance, it is important for them to closely monitor their CCC.

Much research has been done in the area of liquidity, working capital, cash conversion cycle, firm size, and their influence on profitability but there has been no conclusive evidence showing the negative or positive relationship between CCC and profitability. A few studies (Kaur & Singh, 2016; Panigrahi, 2013) have reported the positive relationship whereas others (Oseifuah & Gyekye, 2016; Anser & Malik, 2013; Majeed, Makki, Saleem, & Aziz, 2013; Murugesu, 2013; Attari & Raza, 2012) have reported on the negative relationship showing the inconsistency. To some extent, some studies (Hemalatha & Kamalavalli, 2017; Ikechukwu & Nwakaego, 2016; Bolek, 2013; Wongthatsanekorn, 2010) have even reported that there are no relationship between CCC and profitability. Most of these studies on the relationship between CCC and profitability have been done based on general firms or manufacturing companies, small and medium enterprises, or in some cases selected listed companies in stock exchanges. There is limited work done on the relationship between CCC and profitability of the agriculture and food sector of Thailand.

Data show that by mid twenty-first century, a minimum of 70 per cent increase in agricultural production will be needed to satisfy the world's hunger even as climate change, soil erosion and urbanisation will diminish arable land (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), July 2011). Agribusiness has been influential in increasing exports, and at the same time triggering development of high end yield in national markets. Thailand's agricultural and food industries have been an interesting mix of economic prosperity (resulting in billions of baht a year) and as well as upholding the Thai agrarian culture. Thailand is known as the "Kitchen of the World" largely due to its natural wealth which has been enriched by technology, food safety research and development, and conforming to high quality global standards. Thailand is the leader in food export in Asia and is also one of the biggest producers of food products like rice, tuna, frozen seafood, chicken and canned pineapples (Thailand Board of Investment, 2013). Agricultural productions have increased the Thai GDP by about

8.3 per cent in 2016 (World Bank, 2016). More than half of the food produced in Thailand is exported to other countries, making it one of the leading producers and exporters of processed food products in the world. Statistics show that Thailand exported USD24 billion of food in 2016 and was the largest food exporter in ASEAN and the 12th leading food exporter in the world (Arunmas, 2017).

The study of cash conversion cycle is particularly significant for agriculture and food industries. Unlike other businesses, the agriculture and food industries have some unique risk factors to consider. Besides the general risks (access to growth capital, competition, etc.), the specific risks associated with the agricultural businesses (biological and weather related risks, commodity price volatility, infrastructure in rural areas and government polices) can greatly influence the profitability of this sector. In addition, the special nature of the supply chain and logistics design for food industries can amplify the challenges such companies face in working capital management. More importantly, speed plays a crucial role in this industry. Responsiveness is a key factor which influences speed; and the food industry in particular is an example of this "off-the-shelf" responsiveness characteristic (Kritchanchai, 2004). If a country cannot stock its produced food for a longer period of time, the possibilities of exporting such foods become limited to fresh foods only which are associated with higher costs (Afzal, Lawrey, Anaholy, & Gope, 2018). In other words, the agriculture and food industries are distinctive in the sense that the produce of these industries have a very limited shelf life.

The study also assumes significance because of the unique nature of the agriculture and food industries which deals with perishable commodities. In addition, inventory management is a crucial factor which influences CCC and profitability. The authors have chosen Thailand as their area of study as it is among the highest producers of food products in the world as well as the largest sole net food exporter in ASEAN (Arunmas, 2017).

The primary purpose of the study is to measure the role of cash conversion cycle in explaining the variations in profitability of agriculture and food companies in Thailand. This study also attempts to measure the influence of each of the following: production cycle, cash collection cycle, and cash payment cycle on the profitability of the agriculture and food industries in Thailand. Finally, this study also examines the influence selected proxies of control/moderating variables (size and debt ratio) have on the relationship between CCC and profitability.

The rest of this paper is preceded by Section 2 which reviews the relevant literature leading to the hypotheses development. Section 3 provides a description of the methodology. Section 4 presents and discusses the results of the empirical analysis and Section 5 concludes the study.

2. Literature Review and Hypotheses Development

Studies looking at the relationship between liquidity/working capital and profitability have attracted considerable attention, especially in the field of short-term financial management (Bolek, 2013). In fact, there has been a growing concentration among researchers on this area in the last 20 years (Attari & Raza, 2012). Studies by Deloof (2003) and Yucel and Kurt (2002) stated that the profitability of a business is greatly influenced by the administration of its working capital.

Among the many ways to measure working capital, cash conversion cycle (CCC) has been acknowledged to be a dynamic indicator of working capital management. This is verified by Ebbens and Johnson (2013) who observed that working capital management is more frequently measured by CCC. Literature (Gitman, 1982) has shown that CCC is a more accurate ratio than conventional indicators such as the current ratio. The concept of CCC was initiated by Richards and Laughlin (1980) who recommended it as a strong measure to examine how effectively a company manages its working capital (Attari & Raza, 2012). Gentry, Vaidyanathan, & Wai (1990) confirmed that the value of a business is commonly related to CCC.

A number of studies have established the relationship between CCC and profitability. Earlier works on the impact of working capital management on profitability can be traced to particular lines of businesses like buildings, services, natural resources, energy, logistics or production industries. Studying 60,000 American firms in seven industries over 20 years, Shin and Soenen (1998) used net trade cycle as a proxy for liquidity when analysing the correlation between working capital management and profitability. They found a strong negative relationship. They mentioned that shorter net trade cycles could bring higher stock returns. A similar study by Reheman and Nasr (2007) at Karachi Stock Exchange reported the same negative relationship when studying 94 Pakistani firms over a period of six years. Another study (Majeed et al., 2013) observed the effects of different factors on profitability and determined that the average receivables period, production period, and CCC were negatively associated with firm's performance. The same authors suggested that the possible reasons for this negative relationship could be longer holding period of inventory, delay in collection of receivables, and quick payment of debts resulting in higher CCC and lower profitability.

In another empirical study on the relationship between CCC, cash management and profitability, it is found that the CCC is positively related to liquidity ratios and negatively related to return on asset (ROA) and return on equity (ROE) (Yucel & Kurt, 2002). Similar results are found by Murugesu (2013). Studying 100 companies in the Bombay Stock Exchange, Chatterjee (2012) reports a significant negative relationship between the elements of working capital management and firm's performance. In a more recent study, Oseifuah and Gyekye (2016) confirmed the negative relationship between working capital management and profitability. The same study also reported a negative relationship between inventory conversion and receivables collection with profitability and positive relationship between accounts payable deferral period and profitability. Their findings implied that managers could increase profits by reducing the duration of production and cash collection and by increasing the time period for payables. Grosse-Ruyken, Wagner and Jonke (2011), likewise, also reported a significant negative relationship between CCC and return on capital employed (ROCE). They argued that the optimal level of CCC for responsive supply chain must be evaluated holistically. They then concluded that the right working capital management is determined by the type of business, supply chain design, and risk factors within the supply chain. The authors also proposed that changes in all components of the CCC must be monitored so as to achieve a balanced CCC. This can reduce the total outstanding working capital.

In contrast to the above studies, research also shows conflicting results. Kaur and Singh (2016) reported a positive relationship between profitability as measured by return on assets (ROA) and return on equity (ROE) and accounts receivables days, accounts payable days and cash conversion cycle. Grosse-Ruyken, Wagner and Jonke (2011) found a negative relationship between CCC and return on capital employed for all industries but Panigrahi (2013) reported contrasting results. Panigrahi (2013) investigated cement manufacturing companies in India and found that CCC had a strong positive relationship with return on assets (ROA) and return on equity (ROE). This positive relationship is due to the fact that the firm collects money on receivables before it pays to the suppliers. The finding suggests that the relationship between CCC and profitability may vary due to the nature of the different industries. This also means that it is not mandatory for CCC to be lowered in order to ensure higher profitability. In a study of the Athens Stock Exchange, Lyroudi and Lazaridis (2000) focussed on the association between liquidity, profitability and leverage ratios of 82 firms in the food industry. They concluded that a positive relationship exists between CCC and return on assets (ROA). Similar findings were reported by Sharma (2011) who analysed 263 non-financial firms in India over an eight year period and by Gill, Nahum and Mathur (2010) who inspected 88 American production firms from 2005 to 2007. Nonetheless, Ikechukwu and Nwakaego (2016) reported that CCC has no significant effect on firm's profitability. In a ten year study of tyre companies in India, Hemalatha and Kamalavalli (2017) concluded that CCC has no significant association with ROE and ROA.

Although many studies have reported the correlations between CCC and profitability, the results have been mixed and non-conclusive. In view of these inconsistent findings, it is crucial to test the relationship between CCC and profitability to see if it is positive, negative or neutral, especially for specific industries. In theory, if firms can sell their inventories, collect money from customers quickly, and delay paying their suppliers, it will save costs and as a result increase the profits (Brigham & Houston, 2013). As such, the following hypothesis is proposed:

H_1: Cash conversion cycle has a significant inverse relationship with profitability.

Among the various factors that contribute towards the computation of CCC, it has been noted that not all factors have the same relationships towards profitability. Ikechukwu and Nwakaego (2016) stated that inventory turnover ratio and credit turnover ratio have significant and positive effect on firms' profitability. In contrast, Hemalatha and Kamalavalli (2017) concluded that inventory turnover ratio has no significant association with ROE and ROA. Similarly, Wongthatsanekorn (2010) reported no relationship between inventory conversion period and assets turnover, and negative relationships between receivable conversion period, payable deferral period and assets turnover. In contrast, in a similar study of agriculture and food industries in Saudi Arabia, Husain and Alnefaee (2016) found a high negative correlation between payment cycle and gross operating profit, but a weak positive relationship between collection period and profitability, and moderate negative correlation between inventory turnover and gross profits. Due to these inconsistent findings, the current study proposes the following hypotheses:

H_2: Production cycle has a significant relationship with profitability.
H_3: Cash collection cycle has a significant relationship with profitability.
H_4: Cash payment cycle has a significant relationship with profitability.

3. Research Methodology

3.1 Data and Sampling

The population for this research study includes all the agriculture and food companies listed in Thailand. Secondary data (annual reports for five years from 2009 to 2013) were collected from the listed agriculture and food companies' websites in Thailand. According to the availability of data, the annual reports of a total of 34 listed firms were extracted from the 45 agricultural and food companies listed on the Stock Exchange of Thailand.

Upon collection of the secondary data, quantitative methods were used to perform the statistical analysis. The statistical tools include Descriptive Statistics, Pearson's Correlation, and Regression Analysis.

3.2 Research Models and Variable Definitions

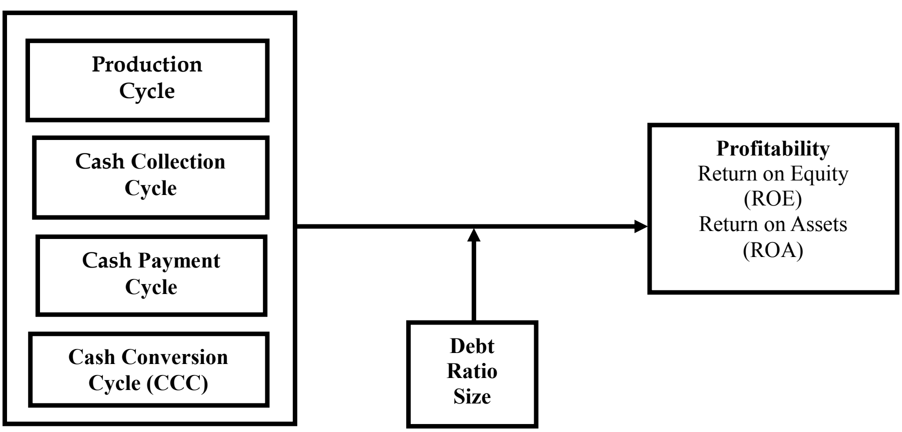

Figure 1: The Effects of CCC and its Components on Profitability
Source: Adapted from Wongthatsanekorn (2010) and Shah and Chaudhry (2013).

The conceptual framework suggests that CCC can influence the bottom line of businesses. In this model, CCC is projected as the independent variable and profitability is projected as the dependent variable. Since CCC is determined by the production cycle, collection cycle and payment cycle, it is only fair to assume and probe if each of these factors may also affect firm's profitability. In this regard, CCC is measured by deducting the payment deferral period made to suppliers from the total of the inventory conversion period and the receivables collection period (Brigham & Houston, 2013).

Profitability is measured by return on equity (ROE) and return on assets (ROA) (Gibson, 2011). Although both ratios are used to assess a company's performance, they do not represent the same thing (McClure, 2014). While ROE indicates how a company effectively generates earnings from the investments of its stockholders, the ROA shows how much profits a company earns for each dollar of its assets. According to McClure (2014), the main difference between ROE and ROA is the financial leverage or debt. If a company does not borrow money, ROE will be the same as ROA. When a company takes on financial leverage, ROE will be higher than ROA. McClure (2014) stated that using both ROE and ROA to assess financial performance and company effectiveness is better. The inclusion of both as proxies of profitability in this study offers a more complete assessment.

In addition, the company's characteristics such as size and debt ratio can also significantly affect firm profitability. Chatterjee (2012) and Majeed et al. (2013) reported a positive relationship between size and profitability while Panigrahi (2013) and Anser and Malik (2013) indicated no link between them. Separate studies (Yucel & Kurt, 2002; Raheman & Nasr, 2007; Bolek, 2013) looking at the relationship between debt ratio and profitability also showed mixed results. While Yucel and Kurt (2002), Raheman and Nasr (2007) and Bolek (2013) highlighted the negative relationship, Panigrahi (2013) and Anser and Malik (2013) maintained that there is no relationship between debt ratio and profitability.

Given these observations, the current study will focus on examining the relationship and influence of these independent variables (CCC, production cycle, collection cycle and payment cycle) as well as the moderating variables (size and debt ratio) on the dependent variables (ROE & ROA). The current study will use the following measures as defined in Table 1.

Table 1: Variable Measurements and Definitions

Variables	Abbreviations	Definitions	Measurements
Independent variables			
Production cycle	PrC	The time it takes to produce and sell the products.	(Average Inventory x 365)/Cost of goods sold
Cash collection cycle	CashC	The time it takes to collect from customers (collecting accounts receivable on credit sales)	(Average net receivables x 365)/Sales
Payment cycle	PayC	The time when raw materials are ordered, received and paid for.	(Average accounts payable x 365)/ Cost of goods sold
Cash conversion cycle	CCC	The time between when the company pays for raw materials and when it collects money for the products sold.	Production cycle + Cash collection cycle – Payment cycle
Dependent variables			
Return on assets	ROA	An overall measure of profit-ability by showing how efficient management is at using its assets to generate earnings.	Net income/Average total assets
Return on equity	ROE	It shows how much net income the company earned for each dollar invested by the owners.	Net income/Average total equity
Moderating variables			
Size	Size	Size of a company in terms of sales revenue.	Natural log of sales
Debt ratio	Debt	It shows the proportion of assets that are financed by debts.	Total liabilities/Total assets

To understand the relationship between cash conversion cycle (CCC) and profitability, this study examines the following models:

$$ROE_{it} = \alpha + \beta_1 CCC_{it} + \beta_2 Size_{it} + \beta_3 Debt_{it} + e_{it} \quad \text{(Model 1)}$$

$$ROA_{it} = \alpha + \beta_1 CCC_{it} + \beta_2 Size_{it} + \beta_3 Debt_{it} + e_{it} \quad \text{(Model 2)}$$

$$ROE_{it} = \alpha + \beta_1 PrC_{it} + \beta_2 CashC_{it} + \beta_3 PayC_{it} + \beta_4 Size_{it} + \beta_5 Debt_{it} + e_{it} \quad \text{(Model 3)}$$

$$ROA_{it} = \alpha + \beta_1 PrC_{it} + \beta_2 CashC_{it} + \beta_3 PayC_{it} + \beta_4 Size_{it} + \beta_5 Debt_{it} + e_{it} \quad \text{(Model 4)}$$

where,

ROE_{it} = Return on equity of firm i at time t
ROA_{it} = Return on assets of firm i at time t
CCC = Cash conversion cycle
Size = Natural log of sales
Debt = Debt to assets ratio
PrC = Production cycle
CashC = Cash collection cycle
PayC = Payment cycle
A = Constant term
β = Coefficient term
e = Error term
i = Number of companies
t = Time period ranging from 2009 to 2013

4. Findings

4.1. Descriptive Statistics

The descriptive statistics extracted from 34 agriculture and food companies for the period of 2009 to 2013, provided a total of 170 observations as tabulated in Table 2. The mean value of production cycle is 58.8 days, indicating that agriculture and food companies in Thailand took 59 days to produce, store and sell the inventory. The standard deviation was 41.92 days. The mean value of cash collection cycle is 34.5 which shows that these companies spent 34.5 days to collect cash from their credit sales (standard deviation is 17.38 days). In addition, payment cycle has a mean value of 34.9 days which is the period that these companies need to pay off their suppliers. The median for production cycle, cash collection cycle and payment cycle are 52.88, 33.24 and 27.47 respectively which shows the centre of the data for

Table 2: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Median	Std. Deviation
PrC	0.00	261.85	58.84	52.88	41.93
CashC	6.47	96.97	34.56	33.24	17.39
PayC	1.53	196.60	34.93	27.47	31.27
CCC	-68.36	327.40	58.47	59.68	52.74
Size	19.06	26.69	22.36	22.15	1.27
DebtRatio	0.03	0.85	0.38	0.36	0.22
ROE	-0.22	3.13	0.17	0.14	0.26
ROA	-0.10	0.49	0.11	0.09	0.10

Note: PrC = Production cycle, CashC = Cash collection cycle, PayC = Payment cycle, CCC = Cash Conversion Cycle, ROE = Return on Equity of firm, ROA = Return on Assets of firm.

these variables. The cash conversion cycle has a mean of 58.47 which indicates that on an average, it took 58 days for the agriculture and food companies in Thailand to transform their inventory and other resource inputs into cash with the standard deviation of 17.38 days and median of 59.67 days. In a study of the same industry which was conducted by Hussain and Alnefaee (2016) in Saudi Arabia, the mean of production cycle, cash collection cycle, payment cycle and cash conversion cycle was 77.01, 26.11, 72.43, and 30.99 days respectively. This implies that production cycle and payment cycle are shorter in Thailand than in Saudi Arabia while cash collection cycle and cash conversion cycle are longer in Thailand than in Saudi Arabia. In a similar study done in food industries in Greece, results showed that the mean of the production cycle, cash collection cycle, payment cycle and cash conversion cycle was reported as 96.95, 122.76, 192.58 and 28.33 days respectively (Lyroudi & Larzridis, 2000). This means that all other variables except for cash conversion cycle are shorter in Thailand.

The findings from Table 2 show that the mean values of return on assets (ROA) is 11 per cent and return on equity (ROE) is 17 per cent with their standard deviations being 2.6 per cent and 1 per cent respectively. These numbers indicate that on an average, the agriculture and food companies in Thailand can generate 11 per cent and 17 per cent profits from their assets and equities. The total debts over total assets of these companies was noted to be 37.5 per cent on average.

4.2 Correlation Analysis

To understand the relationship between the variables being studied, Pearson's correlation was applied. Table 3 confirms the relationship between production cycle, cash collection cycle, payment cycle and cash conversion cycle. The finding reports a strong positive relationship between production cycle, cash collection cycle and cash conversion cycle. It also observes a negative relationship between payment cycle and cash conversion cycle. It further confirms the theory indicating that shorter production cycle and cash collection cycle together with longer payment cycle can result in shorter cash conversion cycle (Brigham & Houston, 2013).

The correlation results also indicate that cash conversion cycle has a significant inverse relationship with profitability (return on equity and return on assets). These results confirm and accept H_1. This effect means that the shorter the cash conversion time is, the higher the profits generated by the agriculture and food companies in Thailand. These findings are consistent with other empirical research results (Oseifuah & Gyekye, 2016; Anser & Malik, 2013; Majeed et al., 2013; Murugesu, 2013; Attari & Raza, 2012).

Findings from Table 3 indicate that moderating variable size does not have any significant relationship with cash conversion cycle or profitability. This is also confirmed by previous studies (Panigrahi, 2013; Anser & Malik, 2013). However, results from Table 3 (Pearson correlation) indicate that the moderating variable debt ratio has a

Table 3: Pearson Correlations

	PrC	CashC	PayC	CCC	Size	DebtRatio	ROE	ROA
PrC	1							
CashC	.092	1						
PayC	.046	.246**	1					
CCC	.798**	.256**	-.475**	1				
Size	-.146	-.129	-.086	-.108	1			
DebtRatio	-.031	.139	.305**	-.160*	.446**	1		
ROE	-.048	.035	.418**	-.275**	-.005	.087	1	
ROA	-.203**	-.078	.067	-.227**	-.087	-.443**	.340**	1

Note: PrC = Production cycle, CashC = Cash collection cycle, PayC = Payment cycle, CCC = Cash Conversion Cycle, ROE = Return on Equity of firm, ROA = Return on Assets of firm, ** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

significant negative relationship with return on assets (ROA) and cash conversion cycle. This outcome suggests that companies with high debt ratios have low profitability (ROA) but take shorter time to convert their input into cash. Research papers of Yucel & Kurt (2002) and Bolek (2013) similarly reported the negative relationship between debt ratio and profitability. The findings demonstrate that the debt ratio has a positive relationship with payment cycle which means that when the debt ratio increases, companies take longer to pay their debts.

The results also demonstrate that production cycle has a negative relationship with return on assets (ROA). This means that when production cycle is short, the firms make higher profits. In fact, short production cycles can help the agriculture and food companies, where production speed and storage time are crucial to save costs and increase profits. Thus, H_2 is accepted. This result supports the findings of Oseifuah and Gyekye (2016) and Deloof (2003) where a similar result of negative correlation was found between the number of days in inventory and gross operating profit. The results presented in Table 3 indicate that there is no significant relationship between cash collection period and ROE or ROA. As such, H_3 is rejected.

The results also indicate that payment cycle has a significant positive relationship with return on equity (ROE) as shown by Pearson's correlation. This suggests that the longer the payment cycle, the higher the company's profitability. The longer these companies delay in paying their creditors, the more profits they can generate, (assuming that they use the money to invest elsewhere). Therefore, H_4 is accepted. This finding also confirms the results of Oseifuah and Gyekye (2016), Kaur and Singh (2016) and Makori & Jagongo (2013) who reported a significant positive relationship between payable period and return on assets. Nonetheless, this result also differs from many studies (Wongthatsanekorn, 2010; Deloof, 2003; Raheman & Naser, 2007; Shah & Chaudhry, 2013) where a negative relationship between payable period and profitability is reported. This may also point to the fact that agriculture and food industries in Thailand practice a deferred payment policy which increases their profitability.

4.3 Regression Analysis

The regression method was used to describe the nature of the relationship between the variables (production cycle, cash collection cycle, cash payment cycle, cash conversion cycle, debt ratio, size, and return on assets or equity) and to indicate whether they are positive or negative, linear or non-linear. More precisely, the analysis seeks to examine the four linear regression models (as listed earlier) and to study their implications. Time (year) dummy variables were also included to control the year effects and they were assigned a value of 1 for each of the following years: 2010, 2011, 2012 and 2013. Year 2009 was used as the comparison year and assigned a value equal to 0. YearDummy2, YearDummy3, YearDummy4, and YearDummy5 represent year 2010, 2011, 2012, and 2013 respectively. Table 4 illustrates the linear relationship between cash conversion cycle (CCC), debt ratio, size, and return on equity (ROE).

Table 4: Effects of Cash Conversion Cycle on Return on Equity

Model 1	Unstandardised		Standardised	T	p
DV: ROE	B	Std. Error	Beta (β)		
Constant	.560	.290		1.928	.056
CCC	-.002	.000	-.315	-4.293	.000**
Size	-.012	.014	-.073	-.846	.399
DebtRatio	.136	.100	.117	1.351	.179
YearDummy2	-.101	.059	-.158	-1.718	.088
YearDummy3	-.090	.059	-.141	-1.532	.127
YearDummy4	-.085	.059	-.133	-1.445	.150
YearDummy5	-.157	.059	-.245	-2.667	.008**
$R = 0.384$, $R^2 = 0.147$, Adjusted $R^2 = 0.111$, $F = 4.003$**					

Note: CCC = Cash Conversion Cycle, ROE = Return on Equity of firm, ** Significant at 1% level.

Linear regression for model 1 is suggested as:

$$\begin{aligned} ROE_{it} = {} & 0.56 - 0.002CCC_{it} - 0.012Size_{it} + 0.136DebtRatio_{it} - \\ & 0.101YearDummy2 - 0.90YearDummy3 - \\ & 0.085YearDummy4 - 0.157YearDummy5 + e_{it} \end{aligned}$$

Table 4 shows that cash conversion cycle has a significant inverse relationship with return on equity ($p < 0.01$) while size and debt ratio do not show any significance. This outcome is consistent with the results of Anser and Malik (2013). The correlation (R = 38.4%) suggests a weak relationship between the independent and dependent variables. The coefficient of the determination (R^2 = 14.7%) means that 14.7 per cent of the variation in return on equity (ROE) can be attributed to cash conversion cycle, size and debt ratio.

According to the results presented in Tables 4 and 5, it can be seen that the coefficients for cash conversion cycle were noted to be significantly negative in relationship with return on equity (ROE) and return on assets (ROA). This result confirms the outcome of previous studies (Anser & Malik, 2013; Yucel & Kurt, 2002; Murugesu, 2013; Majeed et al., 2013). However, the moderate variable size has a significant positive relationship with return on assets while debt ratio has a negative relationship with ROA. This result also supports previous studies (Panigrahi, 2013) and (Raheman & Nasr, 2007) where the coefficient size is related significantly positive to net operating profit. Likewise, Gill et al. (2010) also reported a significantly negative coefficient for debt ratio in relationship with operating profit. In Table 5, the correlation (R = 57.2%) indicates a moderate relationship between the independent and dependent variables. The coefficient of the determination (R^2 = 32.7%) means that 32.7 per cent of the amount of variation in return on assets can be explained by cash conversion cycle, size and debt ratio. The other 67.3 per cent of the variation is a result of other factors.

Table 5: Effects of Cash Conversion Cycle on Return on Assets

Model 2	Unstandardised		Standardised	T	p
DV: ROA	B	Std. Error	Beta (β)		
Constant	-.072	.098		-.728	.468
CCC	-.001	.000	-.328	-5.030	.000**
Size	.014	.005	.228	2.990	.003**
DebtRatio	-.251	.034	-.566	-7.369	.000**
YearDummy2	-.007	.020	-.027	-.333	.739
YearDummy3	.013	.020	.053	.651	.516
YearDummy4	.015	.020	.063	.773	.441
YearDummy5	-.022	.020	-.092	-1.123	.263
R = 0.572, R^2 = 0.327, Adjusted R^2 = 0.298, F = 11.268**					

Note: CCC = Cash Conversion Cycle, ROA = Return on Assets of firm, ** Significant at 1% level.

Linear regression for model 2 can be written as:

$$ROA_{it} = -0.072 - 0.001CCC_{it} + 0.014Size_{it} - 0.251\ DebtRatio_{it} - 0.007YearDummy2 + 0.013YearDummy3 + 0.015YearDummy4 - 0.022YearDummy5 + e_{it}$$

The regression analysis in Table 6 and Table 7 shows the strength of the relationship between production cycle, cash collection cycle, payment cycle and return on equity and return on assets.

Table 6: Effects of Production Cycle, Cash Collection Cycle and Payment Cycle on Return on Equity

Model 3	Unstandardised		Standardised	T	p
DV: ROE	B	Std. Error	Beta (β)		
Constant	.257	.279		.922	.358
PrC	.000	.000	-.057	-.839	.403
CashC	-.002	.001	-.131	-1.831	.069
PayC	.005	.001	.522	7.064	.000**
Size	-.002	.013	-.014	-.173	.863
DebtRatio	-.012	.099	-.011	-.126	.900
YearDummy2	-.103	.054	-.161	-1.900	.059
YearDummy3	-.088	.055	-.137	-1.607	.110
YearDummy4	-.093	.055	-.145	-1.699	.091
YearDummy5	-.182	.055	-.285	-3.333	.001**
$R = 0.529$, $R^2 = 0.28$, Adjusted $R^2 = 0.24$, $F = 6.926$**					

Note: PrC = Production cycle, CashC = Cash collection cycle, PayC = Payment cycle, ROE = Return on Equity of firm, ** Significant at 1% level.

Linear regression for model 3 is suggested as:

$$ROE_{it} = 0.257 + 0.000PrC_{it} - 0.002CashC_{it} + 0.005PayC_{it} - 0.002Size_{it} - 0.012DebtRatio_{it} - 0.103YearDummy2 - 0.088YearDummy3 - 0.093YearDummy4 - 0.182YearDummy5 + e_{it}$$

The outcomes indicate that payment cycle has a significant positive relationship with return on equity (ROE) while other variables (except yeardummy5) do not show any significance in model 3. Majeed et al. (2013) and Hassan, Imran, Amjad and Hussain (2014) also found a positive coefficient for payable period in the relationship with ROE although this is not significant. The correlation (R = 52.9%) indicates a moderate relationship between the independent and dependent variables while the coefficient of the determination (R^2 = 28%) means that 28 per cent of the amount of variation in return on equity (ROE) can be attributed to the independent variables.

Table 7: Effects of Production Cycle, Cash Collection Cycle and Payment Cycle on Return on Assets

Model 4	Unstandardised		Standardised	T	p
DV: ROA	B	Std. Error	Beta (β)		
Constant	-.133	.101		-1.315	.190
PrC	-.001	.000	-.223	-3.455	.001**
CashC	.000	.000	-.036	-.526	.600
PayC	.001	.000	.297	4.224	.000**
Size	.016	.005	.258	3.362	.001**
DebtRatio	-.278	.036	-.628	-7.761	.000**
YearDummy2	-.006	.020	-.026	-.321	.749
YearDummy3	.015	.020	.060	.742	.459
YearDummy4	.016	.020	.066	.815	.416
YearDummy5	-.025	.020	-.102	-1.254	.212
R = 0.59, R^2 = 0.348, Adjusted R^2 = 0.311, F = 9.495**					

Note: PrC = Production cycle, CashC = Cash collection cycle, PayC = Payment cycle, ROA = Return on Assets of firm, ** Significant at 1% level.

Linear regression for model 4 can be written as:

$$ROA_{it} = -0.133 - 0.001PrC_{it} + 0.000CashC_{it} + 0.001PayC_{it} + 0.016Size_{it} - 0.278DebtRatio_{it} - 0.006YearDummy2 + 0.015YearDummy3 + 0.016YearDummy4 - 0.025YearDummy5 + e_{it}$$

The results in Table 7 indicate that all other variables, except cash collection cycle, have significant relationship with return on assets (ROA). Payment cycle and size have a significant positive relationship with return on assets (ROA) while production cycle and debt ratio have a significant inverse relationship with return on assets (ROA). Similar coefficients for these variables are reported in the study of Iqbal and Zhuquan (2015) and Makori & Jagongo (2013). The correlation (R = 59%) indicates a moderate relationship between the independent and dependent variables. The coefficient of the determination (R^2 = 34.8%) means that 34.8 per cent of variation in return on assets (ROA) can be explained by production cycle, cash collection cycle, payment cycle, size and debt ratio. The other 64.2 per cent of the variation is a result of other factors.

5. Conclusion

5.1 Discussion and Implications

This study has investigated the impact of cash conversion cycle on profitability in 34 listed agriculture and food companies in Thailand for a five year period lasting from 2009 to 2013. The results show that cash conversion cycle has a significant inverse relationship with the profitability of agriculture and food companies in Thailand. The results also confirm the earlier studies in this subject and contribute to the existing literature in the study of this relationship. The results of this study are especially crucial to policy makers, industry managers and practitioners in the agriculture and food industries in Thailand as they deal with perishable goods and face unique challenges in logistics and supply chain management. This study also provides useful implications in the broader working capital management for managers in this sector which is consistent with the view that shorter CCC leads to higher profitability.

The findings also indicate that production cycle and debt ratio have a significant negative relationship with return on assets (ROA). It implies that efficient inventory management, production processes, and logistics management are crucial determinants to profitability especially in the agriculture and food industries. In addition, the results also suggest that higher leverage leads to lower profits for the agriculture and food industries in Thailand. The negative relationship between debt ratio and profitability may also help financial managers in this sector to be careful when making decisions for debt financing. Heavy debts can increase interest expenses and thus lower profits.

This study has also pointed out that payment cycle has a significant positive relationship with profitability. A related challenge in the agriculture and food industries is the limited credit period normally allowed by suppliers of perishable goods who may demand immediate payments for supplies provided. Though this may be true, the result of this study provides a challenging insight to managers to delay payments to suppliers to ensure higher profitability. The study did not find any significant relationship between cash collection cycle and profitability. Hence, it implies that receivables and cash collections do not significantly influence profitability in the agriculture and food industries in Thailand. The outcome further indicates that there was a significant positive relationship between size and profitability. From this, it can be concluded that cash conversion cycle has an impact on the financial performance of the agriculture and food industries in Thailand.

5.2 Limitations and Recommendations

The limitations of this study include the following. The sample size is quite small because of the limitation in accessing the companies' annual reports. There were a number of years that the companies did not post the annual reports on their official websites. Thus, it was quite difficult to extend the time frame for this study. In addition, some annual reports were only available in the Thai language which therefore hindered the interpretation of data for this study.

The study recommends that further research examines this relationship on other specific industries beyond the agriculture and food sector to see if they show similar results. Studies may also be conducted to observe the influence of cash conversion cycle on the profitability of all the manufacturing firms located in Thailand. Research can also be expanded to compare and contrast this relationship in the same industry with other ASEAN countries to gain further perspectives.

References

Afzal, M.N., Lawrey, R., Anaholy, M.S., & Gope, J. (2018). A comparative analysis of the efficiency and productivity of selected food processing industries in Malaysia. *Malaysian Journal of Sustainable Agriculture, 2*(1), 19-28. http://dx.doi.org/10.26480/mjsa.01.2018.19.28

Anser, R., & Malik, Q.A. (2013). Cash conversion cycle and firms' profitability – A study of listed manufacturing companies of Pakistan. *Journal of Business and Management, 8*(2), 83-87. http://dx.doi.org/10.9790/487X-0828387

Arunmas, P. (2017, June 1). Food exports forecast to grow 10.8%. *Bangkok Post*. Retrieved from https://www.bangkokpost.com/business/news/1260114/food-exports-forecast-to-grow-10-8-

Attari, M.A., & Raza, K. (2012). The optimal relationship of cash conversion cycle with firm size and profitability. *International Journal of Academic Research in Business and Social Sciences, 2*(4), 189-203.

Besly, S.E., & Brigham, E.F. (2000). *Essentials of managerial finance*. New York, NY: Dryden Press.

Bolek, M. (2013). Profitability as a liquidity and risk function basing on the new connect market in Poland. *European Scientific Journal, 9*(28), 1-15.

Brigham, E., & Houston, J.F. (2013). *Essentials of Financial Management* (3rd edition). Singapore: Cengage Learning.

Chatterjee, S. (2012). *The impact of working capital on the profitability: Evidence from the Indian firms*. London: London School of Business and Finance.

Deloof, M. (2003). Does working capital management affect profitabilty of Belgian firms? *Journal of Business Finance and Accounting, 30*(3-4), 573-588. htpp://dx.doi.org/10.1111/1468-5957.00008

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). (July 2011). *Agriculture finance – Trends, issues and challenges*. Retrieved from http://www.ruralfinance.org/fileadmin/templates/rflc/documents/06__giz2011-0460en-agricultural-finance.pdf

Ebbens, J., & Johnson, A. (2013). Cash conversion cycle management in small firms: Relationships with liquidity, invested capital, and firm performance. *Journal of Small Businesss and Entrepreneurship, 24*(3), 381-396. http://dx.doi.org/10.1080/08276331.2011.10593545

Gentry, J.A., Vaidyanathan, L., & Wai, H. (1990). A weighted cash conversion cycle. *Financial Management, 19*(1), 90-99. http://dx.doi.org/10.2307/3666040

Gibson, C.H. (2011). *Financial reporting and analysis*. Mason, OH: South Western Cengage Learning.

Gill, A., Nahum, B., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and Economics Journal, 10*(1), 1-9.

Gitman, I.S. (1982). A framework for estimating and analysing the required working capital investment. *Review of Business and Economic Research, 17*(3), 36-44.

Grosse-Ruyken, P.T., Wagner, S.M., & Jonke, R. (2011). What is the right cash conversion cycle for your supply chain? *International Journal of Services and Operations Management (IJSOM), 10*(1), 13-29. http://dx.doi.org/10.1504/IJSOM.2011.041987

Hassan, N.U., Imran, M.M., Amjad, M., & Hussain, M. (2014). Effects of working capital management on firm performance: An empirical study of non-financial listed firms in Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 4(6), 114-132. http://dx.doi.org/10.6007/IJARBSS/v4-i6/931

Hemalatha, S., & Kamalavalli, A.L. (2017). Impact of cash conversion cycle on profitability on tyre industry in India. *International Journal of Multidisciplinary Research and Modern Education, 3*(1), 139-142.

Hussain, S., & Alnefaee, S. (2016). The effects of working capital management on profitability of firms: Evidence from agriculture and food industry of

Kingdom of Saudia Arabia. *Journal of Emerging Issues in Economics, Finance, and Banking, 5*(1), 1684-1698.

Ikechukwu, O.I., & Nwakaego, D.A. (2016). Cash conversion cycle management on the financial performance of building materials/chemical and paint manufacturing companies in Nigeria. *Journal of Humanities and Social Science, 21*(7), 62-69. http://dx.doi.org/10.9790/0837-2107066269

Iqbal, A., & Zhuquan, W. (2015). Working capital management and profitability evidence from firms listed on Karachi Stock Exchange. *International Journal of Business and Management, 10*(2), 231-235. http://dx.doi.org/10.5539/ijbm.v10n2p231

Kaur, H.V., & Singh, A. (2016). Relationship of cash conversion cycle with profitability: An analysis of power sector in India. *International Journal of Emerging Issue in Management and Technology, 1*(1), 32-45.

Kritchanchai, D. (2004). Assessing responsiveness of the food industry in Thailand. *International Journal of Industrial Management and Data System, 104*(5), 384-395. http://dx.doi.org/10.1108/02635570410537471

Lyroudi, K., & Larzridis, J. (July, 2000). *The cash conversion cycle and liquidity analysis of the food industry in Greece*. Paper presented at the European Financial Management Association Conference, Athens. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=236175

Majeed, S., Makki, M.A., Saleem, S., & Aziz, T. (2013). The relationship of cash conversion cycle and profitability of firms: An empirical investigation of Pakistani firms. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB)*, 1(1), 35-51.

Makori, D.M., & Jagongo, A. (2013). Working capital management and firm profitability: Empirical evidence from manufacturing and construction firms listed on Nairobi Securities. *International Journal of Accounting and Taxation*, 1(1), 1-14.

McClure, B. (2014, September 14). *ROA and ROE give clear picture of corporate health*. Retrieved from http://www.investopedia.com/articles/basics/05/052005.asp

Murugesu, T. (2013). Effect of cash conversion cycle on profitability: Listed plantation companies in Sri Lanka. *Research Journal of Finance and Accounting, 4*(18), 132-137.

Oseifuah, E.K., & Gyekye, A. (2016). Cash conversion cycle theory and corporate profitability: Evidence from non-financial firms listed on the Johannesburg Stock Exchange. *Journal of Accounting and Management, 6*(9), 37-51. http://dx.doi.org/10.21511/imfi.14(1).2017.08

Panigrahi, A.K. (2013). Cash conversion cycle and firm's profitability – A study of cement manufacturing companies of India. *International Journal of Current Research, 5*(6), 1484-1488.

Raheman, A., & Nasr, M. (2007). Working capital management and profitability – case of Pakistani firms. *International Review of Business Research Papers, 3*(1), 279-300.

Richards, D.V., & Laughlin, J.E. (1980). A cash conversion cycle approach to liquidity analysis. *Financial Management, 9*(1), 32-38. http://dx.doi.org/10.2307/3665310

Shah, S.Z., & Chaudhry, S.N. (October, 2013). *Relationship between cash conversion cycle and profitability: Moderator role of firm size*. Paper presented at 2nd International Conference on Management, Economics and Finance. Kota Kinabalu, Sabah, Malaysia.

Sharma, A.K. (2011). Effect of working capital management on firm profitability: Empirical evidence from India. *Global Busines Review, 12*(1), 159-173. http://dx.doi.org/10.1177/097215091001200110

Shin, H.H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education, 8*(2), 37-45.

Thailand Board of Investment. (2013). *Thailand's food industry*. Bangkok: Thailand Board of Investment.

Wongthatsanekorn, W. (October, 2010). *Study of cash-to-cash cycle management on profitability of private hospital in Thailand by regular and panel data regression analyses*. Paper presented at World Congress on Engineering and Computer Science, San Francisco, USA.

World Bank. (2016). *Value added (% of GDP): Agriculture*. Retrieved from https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?year_high_desc=t

Yucel, T., & Kurt, G. (2002). Cash conversion cycle, cash management and profitability: An empirical study on the ISE traded companies. *The ISE Review, 6*(22), 1-15.

Contingent Factors Affecting the Financial Performance of Manufacturing Companies: The Case of East Java, Indonesia

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to examine how contextual variables which include innovation strategy, management accounting information system and internal business process performance affect the financial performance of manufacturing companies in East Java, Indonesia.
Design/ Methodology/ Approach: This study employs a quantitative approach to explain the relationship among the variables. The data of 135 managers were collected and then analysed through the partial least squares (PLS) approach.
Research findings: Results show that management accounting information system and business process performance partially mediate the innovation strategy-financial performance relationship.
Theoretical contributions/ Originality: This study expands on previous works by investigating the roles of management accounting information system and internal business process performance as mediating variables between innovation strategy and firm's financial performance.
Practitioner/ Policy implications: This study provides insights into how management accounting information system and internal business process performance impact innovation strategy and financial performance. The results imply that managers need to improve the design and implementation of their accounting system and their internal business process performance. This initiative can support

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the firm's innovation strategy which impacts on the firm's financial performance. The implications drawn from this study justify two things: (1) firms need to be more proactive in their product and process innovations so as to remain competitive in the global market; and (2) managers need to develop intangible assets such as a management accounting information system in the era of knowledge economy.

Research limitation: This study focusses on the manufacturing companies of the East Java Province of Indonesia therefore, generalisability of the findings may be restricted. Future studies need to incorporate larger and more diverse samples. This study did not consider the companies' business life cycle hence, the full impact of the firms' financial performance may not have been captured.

Keywords: Financial Performance, Innovation Strategy, Internal Business Process Performance, Management Accounting Information System.
JEL Classification: M41

1. Introduction

The prevalence of globalisation is widespread and impactful, particularly in the world of commerce and business. Organisations are facing more challenging competitions thus many are striving to look for a sustainable and competitive advantage that would help them to achieve better performance. Each organisation must formulate and execute the appropriate strategies to build its competitive advantage (Bowen, Moraga, & Marathi, 2009; Mazanai & Fatoki, 2011). In an effort to effectively execute the strategies chosen, organisations need to implement strategy-based performance management. Performance management should be multidimensional in nature, covering both financial and non-financial information. These two types of performance information must be aligned so that organisations are able to monitor, control, and achieve a comprehensive performance (e.g. Thrikawala, 2011; Arora & Sharma, 2016).

A multi-dimensional performance management provides comprehensive performance information which is very crucial in supporting the execution of effective strategies. A single aspect of performance management is insufficient for the managers (Chen, Feldman, & Tang, 2015). For example, to gain the lowest cost in operations, the management needs to have an excellent business process performance, in terms of operation management process and customer management process. An excellent business process performance, in turn, would also need the support of human capital management, information capital management, and the organisation's capital management. Performance management must provide all aspects of these critical information to managers at every level in the organisation. This study focusses on how excellent internal business process performance can improve firm's financial performance, the outcome of which is dependent on the business process performance. As suggested by Bhargava, Dubelaar and Ramaswami (1994) and Venkatraman and Ramunajam (1986), the firm's management needs to use integrated diverse measurements so as to accomplish excellent business process performance. When the firm's business process performance is excellent, the firm's financial performance also improves. The Balanced Scorecard (BSC) is a well-known example of a multidimensional model which is used to assess performance measurement and management. The BSC appears to be one of the "best practices" of performance management; it has been implemented in various types of organisations worldwide (Kaplan & Norton, 1997). The BSC combines two important performance measurements such as non-financial and financial performance indicators within a cause-effect relationship. The BSC also consists of four perspectives: financial, customer, internal business process and learning and growth.

To determine the factors that would affect a firm's financial performance, this study adopted two approaches: the resource-based view and the contingency theory. According to the resource-based view, the key to improve a firm's performance is to look at the firm's internal characteristics (Barney, 1986; Afrifa & Tauringana, 2015). Any difference noted in the firm's performance is explained primarily by the organisation's resources which should be valuable, rare and not easily imitated or substitutable by rivals. The contingency theory helps to explain how the design of an organisation would only be effective and universally applicable in certain environments when certain conditions are met (Otley, 1980; Uyar & Kuzey, 2016). Since the condition and environment of each organisation is different, its design must also be unique. In this study, we highlight that innovative strategy, management accounting information system and internal business process management can act as contingent factors that affect firm's financial performance.

Prior empirical works (Roxas, Battisti, & Deakins, 2014; Saunila, 2014) have illustrated that success in business is determined by innovation strategy. An innovation is a process that utilises resources (assets, skills, and capabilities) to accomplish something. Innovations are necessary in order to develop new products or services. Innovations are achieved by building new production systems and operations that address the needs of customers (Lopez-Valeiras, Gonzales-Sanchez, & Gomez-Conde, 2015). The influence of innovation on performance indicators (such as customer satisfaction, productivity and technological competitiveness) has been demonstrated by Terziovski (2002). In his research, Terziovski (2002) suggested three types of innovation strategy: (1) integrated innovation strategy, (2) incremental innovation strategy, and (3) radical innovation strategy. He further asserted that incremental innovation strategy consists of product innovation and process innovation and that it is more appropriate to use incremental innovation strategy as an incentive for continuing an innovation. This is because it does not take much time to implement an innovation and innovation does not involve revolutionary changes which have higher risks of failure. In that regard, this study thus focusses on incremental innovation strategy.

The implementation of all types of innovation strategy however, requires a reliable management accounting information system. According to Chenhall and Morris (1986), reliable and accurate information comes from a reliable management accounting information system which carries the following criteria: broad scope, timeliness, aggregation and integration. Managerial performance is influenced by the interaction between management accounting information system and business strategy (Abdallah, 2014; Ali, Rahman, & Ismail, 2012; Almajali, Masa'deh, & Tarhini, 2016). The information provided by the management accounting information system plays a critical role in the managerial's decision making. Nonetheless, a reliable management accounting information system needs the readiness of information technology (Masa'deh, 2013; Masa'deh, Obeidat, & Tarhini, 2016).

To advance the firm, its innovation strategy must be implemented together with its business process. The firm's internal business process is related to its operation management, customer management, innovation, as well as regulatory and social processes (Kaplan & Norton, 1997; Erhemjamts, Li, & Venkateswaran, 2013). In this regard, process innovation is associated with efficient production process, timely delivery to customers, and after-sales service. Excellent business process performance has an impact on cost efficiencies and product quality improvement. It accelerates asset utilisation, which in turn, has a positive impact on a firm's financial performance. To create value in these processes, the firm's accounting information system and business process performance need to play important roles. The effective implementation of a firm's innovation strategy can affect the firm's financial performance thus, it should be supported by a reliable management accounting information system and an excellent business process (Davis & Cobb, 2010; Masa'deh, Shannak, Maqableh, & Tarhini, 2017). Although these studies have demonstrated the importance of the management accounting information system and internal business process performance, little work has been done to explore this issue from the perspective of manufacturing companies in East-Java, Indonesia.

Attempting to fill in the gap, this study is also conducted based on a number of reasons. First, theories, concepts and practices developed in different contexts are not necessarily applicable to the context being studied. Moreover, a firm's resources and capabilities which include its management accounting information system, internal business processes and innovation strategy, are regarded as unique factors hence may vary from one context to another. These factors were thus used to explain the differences in the performance of manufacturing companies based in East-Java. Scholars (Lussier & Pfeifer, 2001; Mazzucato & Donovan, 2016; Mazzucato & Penna, 2016) have argued that the determinants of a firm's performance need to be based on the context of research since performance may differ from one context to another, thus the relevance of the current study.

The manufacturing companies of the East Java Province of Indonesia contributes 10.04 per cent of Indonesia's export. The same area also contributes 20.85 per cent of the nation's GDP (Ministry of Industry, 2013). However, growth of the manufacturing industry in the East Java Province has been fluctuating since 2012. With competition coming from foreign manufacturers such as China, the phenomenon for the East Java Province may worsen. Therefore, it is necessary to conduct a study that can examine which contingent factors are likely to affect the financial performance of these manufacturing companies, in the midst of global competition.

This study contributes to the body of knowledge by providing additional evidence from the East Java Province that shows the mediating effect of management accounting information system and internal business process performance on innovation strategy-financial performance relationship. The findings may be useful to policy decision makers and managers who can use the outcome to improve the financial performance of the manufacturing sector of the East Java Province.

The rest of this paper is organised as follows. Section 2 presents the literature review and hypotheses development, while Section 3 explains the research methodology. Sections 4 reports on the findings and section 5 discusses the empirical results. Finally, section 6 provides the conclusion of the study.

2. Literature Review and Hypotheses Development

2.1 Industry-Organisation (I/O) Paradigm versus Resource-Based Theory

The issue on how an organisation pursues its competitive advantage and achieves above-average returns is still not settled and thus requires further research. The Industry-Organisation (I/O) paradigm states that external environment factors especially, industry factors, significantly affect firm's performance. The first empirical study supporting this paradigm was conducted by Schmalensee (1985) who revealed that industry factors affect firm's performance by approximately 20 per cent while in the case of McGahan and Porter (1997), industry factors affect firm's performance by 19 per cent. To achieve a competitive edge within the industry, an organisation needs to have a good strategy. However, the formulation of a good strategy may be influenced by external factors such as industry factors. These are usually beyond the control of the management as they are independent from the organisation (Morrison & Teixeira 2004). In contrast, internal factors reveal how management preferences and company characteristics can influence the resolution of company issues or the expansion plans of company products, services or processes (Makhija, 2003). Unlike external factors that are out of the company's control, internal factors are unique to the company. They include the firm's resources and capabilities both of which can be controlled (Galbreath & Galvin, 2008). Based on this, the current study focusses only on the internal aspects of the firms being investigated.

The resource-based view (RBV) states that a sustainable and competitive advantage depends on how a firm controls and properly utilises its specific internal resources. This theory focusses on the firm's resources and capabilities that would determine the performance of the firm. Resources that comprise assets, skills, and capabilities will determine the empowerment process of the firm towards the creation of its competitiveness. Teece, Pisano, & Shuen (1997) stated that a competitive advantage depends on the resources owned by the firm.

This is expanded by Barney (1986) who suggested that resources can be generally defined as assets, organisational processes, firm attributes, information, or knowledge, all of which are controlled by a company and which can be used to develop and implement the company's business strategies. Barney, Wright, & Ketchen (2001) explained that a company is a collection of resources, competencies and capabilities. The difference between companies can be noted by their respective resources, competencies and capabilities, all of which can determine the firm's competitive advantage. The firm's management accounting information system and business processes are therefore, employed in this study as critical resources that would help firms to create a superior financial performance.

2.2 *The Contingency Theory*

Otley (1980) states that no single organisational design can be effectively applied universally under any condition or in any context. In this regard, the contingency approach explains why the accounting system can differ from one condition to another. Otley's (1980) findings suggested that three concepts influence the effectiveness of an accounting system namely: (1) technology, (2) organisational structure, and (3) environment. Harash, Al-Timimi, & Alsaadi (2014) has suggested that the contingency approach is appropriate for analysing and designing the control system, particularly in the field of management accounting system.

Researchers in the field of management accounting such as Chong and Chong (1997) have conducted studies to determine the relationship among the contextual variables (or contingent factors) such as environment uncertainty, tasks uncertainty, structure and organisational culture, strategy uncertainty, and management accounting information system design. The contingency approach is used to explain how the contingent factors could affect the competitive advantage or perfor-mance of a firm. Likewise, this study also employed the contextual or contingent variables of innovation strategy, management accounting in-formation system, and internal business process performance as factors that would enable a firm to achieve excellent financial performance.

2.3 *Theoretical Framework and Hypotheses Development*

A research model is developed based on the theoretical reviews covered. This is presented in Figure 1. The model illustrates that financial

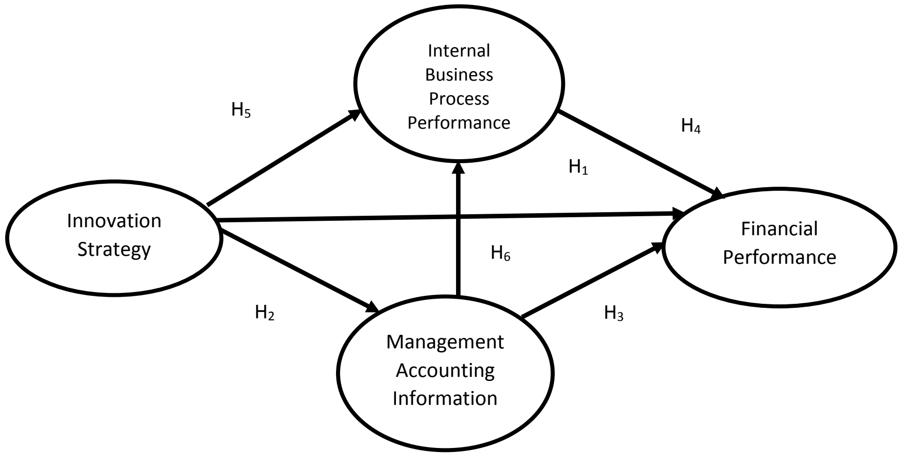


Figure 1: Research Model

performance is affected by innovation strategy which is mediated by the management accounting information system and the internal business process performance.

2.3.1 The Relationship between Innovation Strategy and Financial Performance

Financial performance is a critical aspect of a firm because it is the output of the management's efforts in utilising the firm's resources to maximise shareholders' value. Financial performance reports can indicate whether a firm's strategy contributes to the bottom-line improvement or not. Kaplan (2009) stated that the financial performance of a firm can be improved in two ways i.e., through growth strategy and productivity strategy. Firms are able to generate profit by improving productivity through innovation – product innovation and process innovation. Improvements in productivity can be achieved by: (1) reducing direct and indirect expenses or by using financial and physical assets more efficiently, and (2) reducing the working and fixed capital needed to support a given business level. The linkage strategy in the financial perspective arises when firms achieve a balance between growth and productivity. Three main indicators are used to measure financial performance namely: (1) revenue growth, (2) cost reduction or cost savings and increased asset utilisation and (3) increased customer value.

Innovation is defined as a process created in an organisation to look at how skills and resources are utilised for the purpose of developing new products and or services or to establish new production systems and operations so as to address the needs of customers (Gao, Hsu, & Li, 2018). Innovation is necessary for creating value for example, in penetrating new markets, in retaining existing market shares and in improving a competitive advantage. Innovation is an important element of a business strategy. Through innovation, organisations are better assured in winning the global competition. Innovation has also become the main focus of the academic and industrial research platform. Extensive studies (e.g. Hitt, Ireland, Camp, & Sexton, 2001; Kuratko, Ireland, Covin, & Hoprnsby, 2005) have acknowledged the importance of innovation in achieving a sustainable competitive advantage in the global competition. The goal of innovation is not only to reduce costs but also to help firms to improve the quality of their products and services offered. This is important in the globalisation era as products' lifecycle becomes shorter due to customers who have developed a variety of needs and demands. In sum, innovation is crucial for developing new products and services, for creating organisational models and for marketing techniques.

Early research by Evangelista, Sandven, Sirilli, and Smith (1998) indicated that companies need to be more innovative in order to remain competitive. Global competition is not only forcing firms to enhance product innovation, but also to enhance their technological capabilities in producing products or services at cheaper costs. Firms therefore, need to manipulate the structure and organisation of their work process, improve their core competencies and develop new structures in the effort to respond to new market conditions and customer demands (Ulusoy, Özgür, Bilgiç, Kaylan, & Payzın, 2001). The success or failure of a firm in achieving excellent performance is determined by its innovation (Hamel, 1999). Based on this, the first hypothesis developed is as follows:

H_1: Innovation strategy positively affects financial performance.

2.3.2 The Relationship between Innovation Strategy and Management Accounting Information System

A unique way to achieve excellent performance is to develop innovation strategy. Innovation strategies promote creative ideas and encourage risk taking to experiment with new ways to various firms' activities. A firm that embark on innovative strategy is more likely to seek for new and novel information during information generation, so that they can respond well to potential market opportunities. Hence, this strategy may affect the design of the management accounting information systems in a way that it needs to provide relevant, timely, accurate and complete information. The development of modern performance management, which incorporate innovation strategy proves that characteristics of the management accounting information system such as timeliness, aggregation and integration are useful for managers particularly when it covers a broader scope. Managers depend on the management accounting information system to be able to effectively execute the innovation strategy. The more reliable the accounting information generated, the better the decisions taken by the organisation, and the higher the opportunity for the firm to remain competitive. A company or organisation that implements innovation strategy will be exposing a broad environmental domain hence, it would require larger amounts of information, which may affect the development of management accounting information system. Based on the argument, the second hypothesis developed is as follows:

H_2: Innovation strategy positively affects management accounting information system.

2.3.3 The Relationship between Management Accounting Information System and Financial Performance

The management accounting information, as a product of the management accounting system, plays a critical role in helping the management to predict possible consequences of the various alternative strategies that can be performed in a variety of activities such as planning, controlling and decision making. Information system is effective when it supports good management decisions (Sprinkle, 2003; Nguyen, Mia, Winata, & Chong (2017). The better the system, the higher the quality of the information generated by the system. The quality of the information will improve the quality of the decision to be taken and ultimately, improve the performance of the company (Gerloff, Muir, & Bodensteiner, 1991). In his work, Nazaruddin (1998) suggested that management accounting information system is only reliable if it can improve managerial performance. Chong and Chong (1997) asserted that the availability of the broad scope management accounting information is an important antecedent variable in improving firm's performance. A study by Rawasdeh and Al-namlah (2017) in Saudi Arabia revealed the importance of adopting electronic data interchange in small and medium enterprises so as to improve performance and to remain competitive. Management accounting information system is also expected to positively affect the financial performance through providing relevant, accurate and timely information. Based on the argument, the third hypothesis developed is as follows:

H_3: Management accounting information system positively affects financial performance.

2.3.4 The Relationship between Internal Business Performance and Financial Performance

As previously described, firms must execute their innovative strategies effectively so as to ensure good financial results. Strategies must be executed by conducting strategic activities or processes. Firms must manage their internal business processes in order to achieve excellent operations management, customer management, innovation management, and regulatory management. To achieve excellent internal business process performance, firms must be supported by skillful human resources, a reliable information system as well as a solid organisation capital. Kaplan and Norton (2001) classified internal business processes into four groups. The first group involves the operations management processes. This refers to activities in dealing with suppliers, producing products, distributing products to customers, and managing risks. The second involves customer management processes. This refers to how the firms broaden and deepen relationships with targeted customers. Customer management involves four factors such as the selection of targeted customers, the acquisition of targeted customers, the retention of customers, and the expansion of customers. The third group is the innovation management processes which involve four steps: identifying opportunities for new goods and services, managing a portfolio for research and development, designing and developing new products and putting the new products on the market. The fourth group is the regulatory and social processes which refer to activities that continually help firms to have the right to operate in a specific community, to enjoy safety and health and to promote employee practices as well as community development. Good internal business performance can lead to a healthy organisation thereby enabling it to achieve its objectives. In conclusion, internal business process performance affects firm's financial performance. Based on the argument, the fourth hypothesis developed is as follows:

H_4: Internal business process performance positively affects financial performance.

2.3.5 The Relationship between Innovation Strategy and Internal Business Process Performance

Innovation strategy is a unique way for a firm to reach its targeted performance. The management formulates and implements this innovation strategy to achieve excellent internal business performance. According to Verhoeven and Johnson (2017), firms need to have more dynamic views on their business model innovation. Doing so helps them to enhance the dynamic analysis of their strategic development and business model innovation processes. Chuan and Lin's (2017) empirical study of financial service firms in Taiwan revealed that innovation strategy emphasises on service innovation orientations which in turn, examine the information-value offerings that can elevate the firms' internal business process performance and their customer relationship performance. Gao et al. (2018) provided evidence which suggests that the investment horizon is key to explaining the different innovation strategies used by the public and private firms in improving their business performance and in remaining competitive. Based on the argument, the fifth hypothesis developed is as follows:

H_5: Innovation strategy positively affects internal business process performance.

2.3.6 The Relationship between Management Accounting Information System and Internal Business Process Performance

Kaplan (2009) stated that information capital, including the management accounting information system, has a strategic role in building a company's competitive advantage in the era of knowledge-based economy. Using strategy maps, Kaplan and Norton's (2001) results showed that the firm's learning and growth perspective have direct linkage with the firm's internal business processes. The more excellent the information capital, the more significant the internal business process performance. This justifies the sixth hypothesis which is developed as follows:

H_6: Management accounting information system positively affects internal business process performance.

2.3.7 *Mediating Effect of Management Accounting Information System on the Relationship between Innovation Strategy and Financial Performance*

An innovation strategy that is adopted by a firm impacts the information that is needed to effectively implement the strategy. Bromwich (1990) argues that management accounting information system can help managers to face challenges in a competitive market. Management accounting information system focusses on generating information to create value, to assist managers in monitoring the performance, and to predict possible consequences of various alternative actions that can be performed on a variety of activities. As stated by Gerloff et al. (1991), the information that is available in a firm is considered to be effective if it can support the users or decision-makers. The link between information needed and the decision makers is that good information will increase the quality of the decision; ultimately, this improves the firm's financial performance. Every strategy taken by the firm, including innovation strategy, impacts on the characteristics of the information system including management accounting information system. As stated by Chenhall and Morris (1986), reliable accounting information must have the characteristics of broad scope, aggregation, timeliness, and integration. In conclusion, the implementation of an innovation strategy determines the need for a reliable management accounting information system, which in turn, affects the firm's financial performance. Based on the argument, the seventh hypothesis developed is as follows:

H_7: Management accounting information system mediates the relationship between innovation strategy and financial performance.

2.3.8 *Mediating Effects of Internal Business Process Performance on Innovation Strategy-Financial Performance Relationship*

The innovation strategy implemented will affect the firm's internal business process performance such as innovation, operation, and after-sales service processes. Innovation processes refer to the process of creating products and services that meet the needs of customers; it increases the use of technologies in new product development efforts. Operation processes are associated with efficient production process, timely delivery to customers, and after-sales service. Therefore, an efficient internal business process performance will affect customer relationship performance, increase market share, maintain existing customers, increase new customers, improve customer satisfaction as well as increase customers' value. Terziovski (2002) in his study provided evidence to suggest that innovation strategy affects internal business process performance, customer relationship performance, and financial performance. Based on the argument, the eighth hypothesis developed is as follows:

> H_8: Internal business process performance mediates the relationship between innovation strategy and financial performance.

2.3.9 Mediating Effects of Management Accounting Information System and Internal Business Process Performance on Innovation Strategy-Financial Performance Relationship

Each strategy performed by the firm leads to different designs of the information system. Therefore, innovation strategy also influences the design of the management accounting information system. A good management accounting information system tends to enhance the internal business process performance, helping the firm to achieve better operation management processes (supply chain, production, distribution, risk management), better customer management processes (customer selection, acquisition, retention, growth), better innovation management processes, and better social and regulatory management processes. In this regard, it is evident that an excellent internal business process will improve a firm's financial performance hence, accelerating revenue growth and cost efficiencies. Based on the argument, the ninth hypothesis developed is as follows:

> H_9: Management accounting information system and internal business process performance mediate the relationship between innovation strategy and financial performance.

3. Research Methodology

To operationalise the construct of this study, the operational definitions and measures are developed as follows. Financial performance is defined as the perception of the respondents towards the current financial condition of the strategic business units as compared to previous years. To measure financial performance, we used the financial indicators developed by Kaplan and Norton (2001) namely: improved cost structure, increased asset utilisation, expanded revenue opportunities and enhanced customer value.

Innovation strategy is a means used by an entity to compete in its industry in a sustainable manner (Terziovski, 2002). In this study, innovation strategy is defined as the perception of the respondents towards their unique ways in achieving a sustainable and competitive advantage and excellent performance. To measure innovation strategy, we used two indicators developed by Terziovski (2002) namely: product innovation and process innovation.

Management accounting information system is defined as the perception of the respondents towards the design of the accounting system which generates the management accounting information needed by management so as to make better decisions, in its effort to support the formulation and execution of innovation strategy. To measure management accounting information system, we adopt the instrument developed by Chenhall and Morris (1986) which included four aspects: broadscope, aggregation, integration and timeliness.

Internal business process performance is defined as the perception of the respondents towards the performance of the value chain or the strategic activities that were conducted in strategic business units (SBUs) so as to support customer satisfaction and/or productivity strategy which increases financial performance. To measure internal business process performance, we use four indicators developed by Kaplan and Norton (2001) namely: operation management processes, customer management processes, innovation management processes and regulatory and social management processes. The measurement scales were translated into the Indonesian language and a back-to-back translation was applied to ensure a high level of consistency. The items of measurement are presented in Appendix A. Respondents were asked to rate their perceptions on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.1 Data Collection

This study is designed as a causal study (Cooper & Emory, 1995) using data collected from a questionnaire survey. The unit of analysis is strategic business unit and the respondents recruited comprise managers of these strategic business units in manufacturing companies located in the East Java Province of Indonesia. The sampling frame was drawn from the list of manufacturing firms located in the province and registered with the Ministry of Industry, the Republic of Indonesia as of 2016. The entire population was 398 and so a total of 398 questionnaires were distributed using several channels including emails, snail mails, and personal visits. However, our study drew only 34 per cent response rate, resulting in only 135 respondents who participated. Based on the Law Number 20 Year 2008 report which describes Micro, Small, Medium, and Large Enterprises, it was observed that many of these companies (79 per cent) were manufacturing companies that were also mainly medium enterprises, as illustrated in Table 1. Most (74 per cent) have been in the business between six to 15 years and the type of company varies in terms of products produced.

Table 1: Profile of Respondents

Demographic Variables	Category	Frequency (n=135)	Percentage (%)
Firm Size	Small	0	0
	Medium	107	79
	Large	28	21
Age of Firms	0 – 5	25	19
	6 – 10	40	30
	11 – 15	60	44
	Between 15 to 20	10	7
Type of Firms	Jewelry / Gem	6	4.44
	Fat & Animal / Vegetable oil	12	8.88
	Wood, Articles of Wood	18	13.33
	Fish and Shrimp	11	8.15
	Paperboard	17	12.59
	Organic Chemicals	16	11.85
	Copper	11	8.16
	Meat and Processed Fish	11	8.16
	Furniture, Home Lighting	17	12.59
	Footwear and Shoes	16	11.85

4. Data Analysis and Findings

4.1 Measurement Model Analysis

Partial Least Squares (PLS) is used to examine the hypothesised model. Prior to the structural model analysis, a measurement model analysis is first performed to determine the validity and reliability of the model used. This is done by examining the convergent validity and discriminant validity. The former is assessed through factor loadings, average variance extracted (AVE) and composite reliability (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). The latter is assessed by comparing the squared correlations between the constructs and the AVE for the particular construct (Fornell & Larcker, 1981).

Table 2 highlights loadings of all items which exceeded the threshold value of 0.5 (Bagozzi, Yi, & Phillips, 1991). The composite reliability values ranged between 0.748 to 0.93, exceeding the recommended value of 0.7 (Hair et al. 2014). Additionally, the AVE values are in the range of 0.539 to 0.768, which exceeded the recommended value of 0.5 (Hair et al., 2014).

Table 2: Convergent Validity Analysis

Constructs	Items	Factor Loadings	Composite Reliability	AVE
Innovation Strategy	STR 1	0.92	0.917	0.847
	STR 2	0.92		
Management Accounting	MAIS 1	0.771	0.748	0.539
Information System	MAIS 2	0.552		
	MAIS 3	0.650		
	MAIS 4	0.809		
Internal Business Process	IBP1	0.837	0.918	0.737
Performance	IBP2	0.844		
	IBP3	0.897		
	IBP4	0.855		
Financial Performance	FP1	0.836	0.930	0.768
	FP2	0.855		
	FP3	0.917		
	FP4	0.895		

Table 3 depicts the results of the discriminant validity. It is deemed to exist only if the value of the AVE for a particular construct is higher than its correlation with other constructs. As can be noted in Table 3, all the constructs appear to have a substantially higher AVE as compared to the correlation with other constructs, indicating discriminant validity.

Table 3: Discriminant Validity Analysis

	M	SD	STR	MAIS	IBP	FP
Innovation Strategy (STR)	4.33	0.66	**0.77**			
Management Accounting Information System (MAIS)	4.13	0.55	0.42	**0.79**		
Internal Business Process Performance (IBP)	4.38	0.64	0.57	0.51	**0.73**	
Financial Performance (FP)	4.31	0.63	0.52	0.25	0.32	**0.71**

Note: The numbers in bold in the diagonal row are square roots of the AVE, SD = Standard Deviation, M = Mean.

4.2 Structural Model Analysis

Assuming that the measurement model satisfies the validity and reliability assessment, this study proceeded with the structural model analysis. The predictive accuracy of the model is evaluated in terms of the portion of variance explained. The results reveal that the model is capable of explaining 52.3 per cent of the variance in financial performance. The significance of the direct effect as specified by the research model is evaluated (Table 4). The results reveal that the effects of innovation strategy on financial performance (β = 0.73, p<0.001) and management accounting information system (β = 0.481, p<0.001) are positive and significant. Hence, H_1 and H_2 are supported. Additionally, this study also demonstrates that the effect of management accounting information system on financial performance is significantly positive (β = 0.548, p<0.001) thereby, supporting H_3. The relationship between internal business performance and financial performance (H_4) is also supported (β = 0.485, p<0.001). This study also reports that the effect of innovation strategy on internal business performance is significantly positive (β = 0.687, p<0.001) hence, supporting H_5. Finally, this study also reveals that the effect of management accounting information system on internal business process performance is significantly positive (β = 0.550, p<0.001), thereby, supporting H_6.

Table 4: Direct Effect

Hypothesis	Path	β	Decision	t-value	Standard Error
H_1	IS→FP	0.730***	Supported	11.63	0.08
H_2	IS→MAIS	0.481***	Supported	2.87	0.00
H_3	MAIS→FP	0.548***	Supported	3.04	0.07
H_4	IBP→FP	0.485***	Supported	2.99	0.16
H_5	IS→IBP	0.687***	Supported	11.28	0.06
H_6	MAIS→IBP	0.550***	Supported	10.29	0.07

Note: IS = Innovation Strategy, MAIS = Management Accounting Information System, IBP = Internal Business Process Performance, FP = Financial Performance, ***p<0.001.

4.3 Indirect Effect

Baron and Kenny's (1986) procedure is applied in this study to analyse the mediating effect of management accounting information system and internal business process performance on financial performance. Four conditions must be satisfied to establish a mediating effect. First, a direct link between the independent and dependent variable must be established; second, the independent variable must be associated to the mediating variable; third, the mediator must be significantly related to the dependent variable when both the mediating variables are predictors of the dependent variable; and fourth, the relationship between the independent and dependent variable must be significantly reduced when the mediator is added.

As indicated in Appendix B, innovation strategy has a significant relationship with management accounting information system (H_2) and financial performance (H_1). This satisfies the first and second requirements. The mediator variable of management accounting information system has a positively significant relationship with financial performance (H_3). This satisfies the third requirement. The fourth step is to incorporate the mediator into the model. It is found that including management accounting information system into the model reduces the effect. The β value dropped from 0.73 to 0.56, indicating the existence of a mediator. Thus, H_7 is supported.

This study also examines the impact of internal business process performance as a mediator between innovation strategy and financial performance. As indicated in Table 4, innovation strategy has a positive effect on financial performance (H_1) hence, satisfying the first condition. Innovation strategy has a positive and significant relationship with internal business process performance (H_5) thus, satisfying the second condition. Internal business process performance has a positive relationship with financial performance (H_4) therefore, satisfying the third condition. The fourth step is to incorporate the mediator into the model. It is found that by including internal business process performance into the model, the effect has been reduced, as the β value dropped from 0.73 to 0.56, thereby, indicating the existence of a mediator. Thus, H_8 is supported.

This study also revealed the significant impact of management accounting information system on internal business process performance (H_6). In this regard, it supports H_9, showing the innovation strategy-management accounting information system-internal business process performance-financial performance relationship.

5. Discussion

This study provides empirical evidence that support the contingency theory. The results indicate that the financial performance of the manufacturing firms in the East Java Province is affected by contingent factors such as innovation strategy, management accounting information system, and internal business process performance. This outcome is in line with extensive previous studies (Evangelista et al., 1998; Hamel, 1999; Hitt et al., 2001; Ulusoy et al., 2001; Terziovski, 2002; Kuratko et al., 2005; Kaplan, 2009). Recently, there was an extensive movement made by the government of Indonesia to boost innovation-based industry in the East Java Province. The government encouraged the manufacturing companies to collaborate with universities as one measurement to help these companies to improve their competitive edge and performance in response to global competition, especially those coming from China, in the era of the ASEAN Economic Community (AEC). This movement reflects the government's recognition of innovation strategy as a critical factor for achieving good financial performance in view of global competition.

The findings of this study support the outcome noted by Chenhall and Morris (1986) where it was shown that strategy affects the design of the management accounting information system. In the context of this study, the respondents were managers of medium and large manufacturing companies which used extensive information communication technology. As mentioned earlier, modern performance management requires both the financial and non-financial information so as to be able to effectively formulate and execute the strategy. Chenhall and Morris (1986) indicate that management accounting information system is useful for managers when it covers broad scope, timeliness, aggregation and integration. The outcomes gathered from the current study also explain why management accounting information system is required by the managers of the manufacturing companies in the East Java Province. Nonetheless, different strategies require different designs in management accounting information system thus companies need to be more innovative in their approach.

The outcomes drawn from the current study also support the findings of previous studies conducted by Gerloff et al. (1991), Chong and Chong (1997) and Nazarruddin (1998) whose studies have highlighted the relationship between information needs of decision-making and performance. Managers of companies in the East Java Province realise that they are entering a knowledge-based competition ground where innovation and the use of information communication technology are crucial for achieving excellent financial performance. The difficulty of competing against cheap products from China has driven these managers to innovate and they would require strong strategic information in order to make good decisions. In this regard, the managers perceive that they would achieve excellent financial results if they have the strategic and useful information that is generated by the management accounting information system.

The results of the current study also endorse the study of Kaplan and Norton (2001) who stated that excellent financial performance is the result of excellent internal business process performance which comprises operation management, customer management, innovation management and regulatory management processes. Due to the global competition offered by China and other ASEAN countries, there is no choice for the managers in the East Java Province but to find better ways of improving their internal processes. These processes should also include aggressive marketing and cost reduction schemes so that they can still remain competitive. The current study provides empirical evidences which show that the managers of the manufacturing companies in the East Java Province have the perception that excellent internal business process performance will directly affect their financial performance (revenue growth and cost efficiencies).

The results of this study also support the outcomes of previous studies (Lichtenthaler, Hoegl, & Muethel, 2011; Dorweiler & Yakhou, 2005) which show the important role innovation has on internal business process excellence. Innovation is a source enhancing added-values and profits hence, vital for improving performance and competitiveness. The findings of this study also endorse the observations of Chenhall and Morris (1986) and Kaplan (2009) who stated that management accounting information system has a strategic role in building a firm's competitive advantage in the era of knowledge-based economy. In the context of this study, the managers of the manufacturing companies in the East Java Province use massive computerised-based information system to generate more accurate information that can support better decision making. The better the information they get, the better the internal business process performance they achieve (operation management processes and customer management processes). This justifies why the managers of the manufacturing companies in the East Java Province perceive that management accounting information system affects internal business process performance.

This study provides empirical support which shows the mediating roles of management accounting information system and internal business process performance on the relationship between innovation strategy and financial performance. This study also confirm previous studies conducted by Gordon and Narayanan (1984), Chenhall and Morris (1986), Gerloff et al. (1991), Chong and Chong (1997) with regards to the importance of management accounting information system in relation to organisational performance. In addition, findings of this study also support Kaplan and Norton (1997, 2001) who stated that strategy must be translated into internal business processes so as to create excellent customer relationship performance and financial performance. The internal business processes include operations management processes, customer management processes, innovation management as well as regulatory and social processes.

Based on the above discussions, this study thus concludes that strategy affects the design of management accounting information system; management accounting information system influences internal business performance and internal business performance affects financial performance. The path tests also reveal that the managers are aware that they should align the design of their management accounting information system to innovation strategy. The better the quality of their management accounting information system, the better it will support their internal business processes. Further, the higher the internal business performance, the better it supports financial performance. The findings of this study also confirm the results of other studies conducted by Clemons and Row (1991), Mahmood and Mann (1993), Kettinger, Grover, Guha and Segars (1994), all of whom have concluded that management accounting information system offers a big opportunity for firms to improve their coordination and control. Alternatively, the findings of this study can be used by the respective companies to innovate and to gain a competitive advantage in the world market.

6. Conclusion

From the discussions noted above, several conclusions can be deduced. First, innovation strategy significantly affects financial performance. Second, management accounting information system and internal business process performance partially mediate the relationship between innovation strategy and financial performance. Third, management accounting information system mediates the relationship between innovation strategy and business process performance. Fourth, internal business process performance mediates the relationship between management accounting information system and financial performance.

This study has important future implications on manufacturing companies in the East Java Province, Indonesia. The outcome suggests that manufacturing firms in the East Java Province need to be more innovative, both in product innovation and process innovation so as to remain competitive in the marketplace. The findings also imply that these manufacturing companies need to focus on the development of intangible assets, among others, its management accounting information system. This manifestation is very crucial because without a reliable information system, innovative strategy cannot be executed properly, and so, it cannot drive excellent internal business process performance. Moreover, bad internal process performance may result in unhappy customers causing firms to lose their customer base. All these outcomes can affect the companies' financial performance badly. In conclusion, this research has offered an adequate explanation on how contextual variables or contingent factors can affect the financial performance of manufacturing firms in the East Java Province. The results of this study have important implications on the management of manufacturing firms in the East Java Province. Clearly, the management must improve its awareness of products as well as its process of innovation strategy in order to achieve excellent performance. Furthermore, the management must increase its concerns in the development of its management accounting information system because the system plays a strategic role in helping managers to make good decisions and to improve internal business performance.

This study has several limitations, including: (1) it does not consider product life cycle, and (2) it is limited to the manufacturing industry in the East Java Province, Indonesia only. Therefore, the results cannot be generalised. Future research should consider using other contextual variables such as human capital, organisation capital, and customer relationship performance as new contingent factors in the model.

References

Abdallah, A.A.J. (2014). The impact of using accounting information systems on the quality of financial statements submitted to the income and sales tax department in Jordan. *European Scientific Journal, 9*(10), 41-48.

Afrifa, G.A., & Tauringana, V. (2015). Corporate governance and performance of UK listed small and medium enterprises. *Corporate Governance, 15*(5), 719-733. http://dx.doi.org/10.1108/CG-03-2015-0029

Ali, A., Rahman, M.S.A., & Ismail, W.N.S.W. (2012). Predicting continuance intention to use accounting information systems among SMEs in Terengganu, Malaysia. *International Journal of Economics and Management, 6*(2), 295-320. http://dx.doi.org/10.4172/2162-6359.1000466

Almajali, D.A., Masa'deh, R., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: A study on Jordanian healthcare sector. *Journal of Enterprise Information Management, 29*(4), 549-565. http://dx.doi.org/10.1108/JEIM-03-2015-0024

Arora, A., & Sharma, C. (2016). Corporate governance and firm performance in developing countries: Evidence from India. *Corporate Governance, 16*(2), 420-436. http://dx.doi.org/10.1108/CG-01-2016-0018

Bagozzi, R.P., Yi, Y., & Phillips, L.W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly, 36*(3), 421-458. http://dx.doi.org/10.2307/2393203

Barney, J., Wright, M., & Ketchen, D.J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management, 27*(6), 625-641. http://dx.doi.org/10.1177/014920630102700601

Barney, J.B. (1986). Strategic factors markets: Expectations, luck, and business strategy. *Management Science, 32*(10), 1231-1241. http://dx.doi.org/10.1287/mnsc.32.10.1231

Baron, R.M., & Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bhargava, M., Dubelaar, C., & Ramaswami, S. (1994). Reconciling diverse measures of performance: A conceptual framework and test of a methodology. *Journal of Business Research, 31*(2-3), 235-246. http://dx.doi.org/10.1016/0148-2963(94)90087-6

Bowen, M., Moraga, M., & Marathi, M. (2009). Management of business challenges among small and micro enterprises in Nairobi-Kenya. *KCA Journal of Business Management, 2*(1), 16-31. http://dx.doi.org/10.4314/kjbm.v2i1.44408

Bromwich, M. (1990). The case for strategic management accounting: The role of accounting information for strategy in competitive markets. *Accounting, Organizations and Society, 15*(1-2), 27-46. http://dx.doi.org/10.1016/0361-3682(90)90011-I

Chen, L., Feldmann, A., & Tang, O. (2015). The relationship between disclosure of corporate social performance and financial performance: Evidence from GRI reports in manufacturing industry. *International Journal of Production Economics, 170*, 445–456. http://dx.doi.org/10.1016/j.ijpe.2015.04.004

Chenhall, R.H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *Accounting Review, 61*(1), 16-35.

Chong, V.K., & Chong, K.M. (1997). Strategic choices, environmental uncertainty and SBU performance: A note on the intervening role of management accounting systems. *Accounting and Business Research, 27*(4), 268-276. http://dx.doi.org/10.1080/00014788.1997.9729553

Chuan, S.H., & Lin, H.N. (2017). Performance implications of information-value offering in e-service systems: Examining the resource-based perspective and innovation strategy. *Journal of Strategic Information Systems, 26*(1), 22-38, http://dx. doi.org/10.1016/j.jsis.2016.09.001

Clemons, E.K., & Row, M.C. (1991). Sustaining IT advantage: The role of structural differences. *MIS Quarterly, 15*(3), 275-292. http://dx.doi.org/10.2307/249639

Cooper, D.R., & Emory, C.W. (1995). *Business research methods*. Chicago, IL: Richard D. Irwin. Inc.

Davis, G.F., & Adam Cobb, J. (2010). Resource dependence theory: Past and future. In C.B., Schoonhoven & F. Dobbin (Eds.), *Stanford's Organization Theory Renaissance, 1970–2000* (pp. 21-42). UK: Emerald Group Publishing Limited.

Dorweiler, V.P., & Yakhou, M. (2005). Scorecard for academic administration performance on the campus. *Managerial Auditing Journal, 20*(2), 138-144. http://dx.doi.org/10.1108/02686900510574557

Erhemjamts, O., Li, Q., & Venkateswaran, A. (2013). Corporate social responsibility and its impact on firms' investment policy, organizational structure, and performance. *Journal of Business Ethics, 118*(2), 395-412. http://dx.doi.org/10.1007/s10551-012-1594-x

Evangelista, R., Sandven, T., Sirilli, G., & Smith, K. (1998). Measuring innovation in European industry. *International Journal of the Economics of Business, 5*(3), 311-333. http://dx.doi.org/10.1080/13571519884413

Fornell, C., & Larcker, D.F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382-388. https://dx.doi.org/ 10.2307/3150980

Galbreath, J., & Galvin, P. (2008). Firm factors, industry structure and performance variation: New empirical evidence to a classic debate. *Journal of Business Research, 61*(2), 109-117. http://dx.doi.org/10.1016/j.jbusres.2007.06.009

Gao, H., Hsu, P.H., & Li, K. (2018). Innovation strategy of private firms. *Journal of Financial and Quantitative Analysis, 53*(1), 1-32. http://dx.doi.org/10.1017/S0022109017001119

Gerloff, E.A., Muir, N.K., & Bodensteiner, W.D. (1991). Three components of perceived environmental uncertainty: An exploratory analysis of the effects of aggregation. *Journal of Management, 17*(4), 749-768. http://dx.doi.org/10.1177/014920639101700408

Gordon, L.A., & Narayanan, V.K. (1984). Management accounting systems, perceived environment uncertainty and organization structure: An empirical investigation. *Accounting, Organizations and Society, 9*(1), 33-47. http://dx.doi.org/10.1016/0361-3682(84)90028-X

Hair, J.F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V.G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review, 26*(2), 106-121. http://dx.doi.org/10.1108/EBR-10-2013-0128

Hamel, G. (1999). Bringing silicon valley inside. *Harvard Business Review, 77*(5), 70-84.

Harash, E., Al-Timimi, S., & Alsaadi, J. (2014). The influence of finance on performance of small and medium enterprises (SMES). *International Journal of Engineering and Innovative Technology (IJEIT), 4*(3), 161-167.

Hitt, M.A., Ireland, R.D., Camp, S.M., & Sexton, D.L. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. *Strategic Management Journal, 22*(6-7), 479-491. http://dx.doi.org/10.1002/smj.196

Kaplan, R.S. (2009). Conceptual foundations of the balanced scorecard. *Handbook of Management Accounting Research, 3*, 1253-1269. https://doi.org/10.1016/S1751-3243(07)03003-9

Kaplan, R.S., & Norton, D.P. (1997). Why does business need a balanced scorecard? *Journal of Cost Management, 11*(1), 5-11.

Kaplan, R.S., & Norton, D.P. (2001). *The strategy-focused organization: How balanced scorecard companies thrive in the new business environment*. Boston, MA: Harvard Business School Press.

Kettinger, W.J., Grover, V., Guha, S., & Segars, A.H. (1994). Strategic information systems revisited: A study in sustainability and performance. *MIS Quarterly, 18*(1), 31-58. http://dx.doi.org/10.2307/249609

Kuratko, D.F., Ireland, R.D., Covin, J.G., & Hornsby, J.S. (2005). A model of middle-level managers' entrepreneurial behavior. *Entrepreneurship Theory and Practice, 29*(6), 699-716. http://dx.doi.org/10.1111/j.1540-6520.2005.00104.x

Lichtenthaler, U., Hoegl, M., & Muethel, M. (2011). Is your company ready for open innovation? *MIT Sloan Management Review, 53*(1), 45-48.

Lopez-Valeiras, E., Gonzalez-Sanchez, B., & Gomez-Conde, J. (2016). The effects of the interactive use of management control systems on process and organizational innovation. *Review of Managerial Science, 10*(3), 487-510. http://dx.doi.org/10.1007/s11846-015-0165-9

Lussier, R.N., & Pfeifer, S. (2001). A crossnational prediction model for business success. *Journal of Small Business Management, 39*(3), 228-239. http://dx.doi.org/10.1111/0447-2778.00021

Mahmood, M.A., & Mann, G.J. (1993). Measuring the organizational impact of information technology investment: an exploratory study. *Journal of Management Information Systems, 10*(1), 97-122. http://dx.doi.org/10.1080/07421222.1993.11517992

Makhija, M. (2003). Comparing the resource-based and market-based views of the firm: Empirical evidence from Czech privatization. *Strategic Management Journal, 24*(5), 433-451. http://dx.doi.org/10.1002/smj.304

Masa'deh, R. (2013). The impact of information technology infrastructure flexibility on firm performance: An empirical study of Jordanian public shareholding firms. *Jordan Journal of Business Administration, 9*(1), 204-224. http://dx.doi.org/10.12816/0002054

Masa'deh, R., Obeidat, B.Y., & Tarhini, A. (2016). A Jordanian empirical study of the associations among transformational leadership, transactional leadership, knowledge sharing, job performance, and firm performance: A structural equation modelling approach. *Journal of Management Development, 35*(5), 681-705. http://dx.doi.org/10.1108/JMD-09-2015-0134

Masa'deh, R., Shannak, R., Maqableh, M., & Tarhini, A. (2017). The impact of knowledge management on job performance in higher education: The case of the University of Jordan. *Journal of Enterprise Information Management, 30*(2), 244-262. http://dx.doi.org/10.1108/JEIM-09-2015-0087

Mazanai, M., & Fatoki, O. (2011). The effectiveness of Business Development Services Providers (BDS) in improving access to debt finance by start-up SMEs in South Africa. *International Journal of Economics and Finance, 3*(4), 208-216. http://dx.doi.org/10.5539/ijef.v3n4p208

Mazzucato, M., & O'Donovan, C. (2016). The BBC as market shaper and creator. In N., SethSmith, J. Mackay, & D. Hind (Eds.), *Rethinking the BBC: Public media in the 21st Century* (pp. 101-105). London: Commonwealth Publishing.

Mazzucato, M., & Penna, C. (2016). *The Brazilian innovation system: A mission-oriented policy proposal*. Retrieved from https://www.cgee.org.br/the-brazilian-innovation-system

McGahan, A.M., & Porter, M.E. (1997). How much does industry matter, really? *Strategic Management Journal, 18*(special issue), 15-30.

Ministry of Industry. (2013). *Facts and figures*. Retrieved from http://www.kemenperin.go.id/majalah/11/facts-and-figures-industri-indonesia

Morrison, A., & Teixeira, R. (2004). Small business performance: A tourism sector focus. *Journal of Small Business and Enterprise Development, 11*(2), 166-173. http://dx.doi.org/10.1108/14626000410537100

Nazaruddin, I. (1998). *Pengaruh desentralisasi dan karakteristik informasi sistem akuntansi manajemen terhadap kinerja manajerial*. Indonesia: Universitas Gadjah Mada.

Nguyen, T.T., Mia, L., Winata, L., & Chong, V.K. (2017). Effect of transformational-leadership style and management control system on managerial performance. *Journal of Business Research, 70*(January), 202-213. http://dx.doi.org/10.1016/j.jbusres.2016.08.018

Otley, D.T. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society, 5*(4), 413-428. http://dx.doi.org/10.1016/0361-3682(80)90040-9

Rawashdeh, A., & Al-namlah, L. (2017). Factors influencing electronic data interchange adoption among small and medium enterprises in Saudi Arabia. *Asian Journal of Business and Accounting, 10*(2), 253-280.

Roxas, B., Battisti, M., & Deakins, D. (2014). Learning, innovation and firm performance: Knowledge management in small firms. *Knowledge Management Research and Practice, 12*(4), 443-453. http://dx.doi.org/10.1057/kmrp.2012.66

Saunila, M. (2014). Innovation capability for SME success: Perspectives of financial and operational performance. *Journal of Advances in Management Research, 11*(2), 163-175. http://dx.doi.org/10.1108/JAMR-11-20130063

Schmalensee, R. (1985). Do markets differ much? *The American Economic Review, 75*(3), 341-351.

Sprinkle, G.B. (2003). Perspectives on experimental research in managerial accounting. *Accounting, Organizations and Society, 28*(2-3), 287-318. http://dx.doi.org/10.1016/S0361-3682(01)00058-7

Teece, D.J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal 18*(7), 509-533. http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:73.0.CO;2-Z

Terziovski, M. (2002). Achieving performance excellence through an integrated strategy of radical innovation and continuous improvement. *Measuring Business Excellence, 6*(2), 5-14. http://dx.doi.org/10.1108/13683040210431419

Thrikawala, S.S. (2011). Impact of strategic networks for the success of SMEs in Sri Lanka. *World Journal of Social Sciences, 1*(2), 108-119.

Ulusoy, G., Özgür, A., Bilgiç, T., Kaylan, A.R., & Payzın, E. (2001). A study on technology management process: The parts and components suppliers in the Turkish automotive industry. *Technology Management, 5*(4), 245-260.

Uyar, A., & Kuzey, C. (2016). Contingent factors, extent of budget use and performance: A structural equation approach. *Australian Accounting Review, 26*(1), 91-106.

Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *Academy of Management Review, 11*(4), 801-814. http://dx.doi.org/10.2307/258398

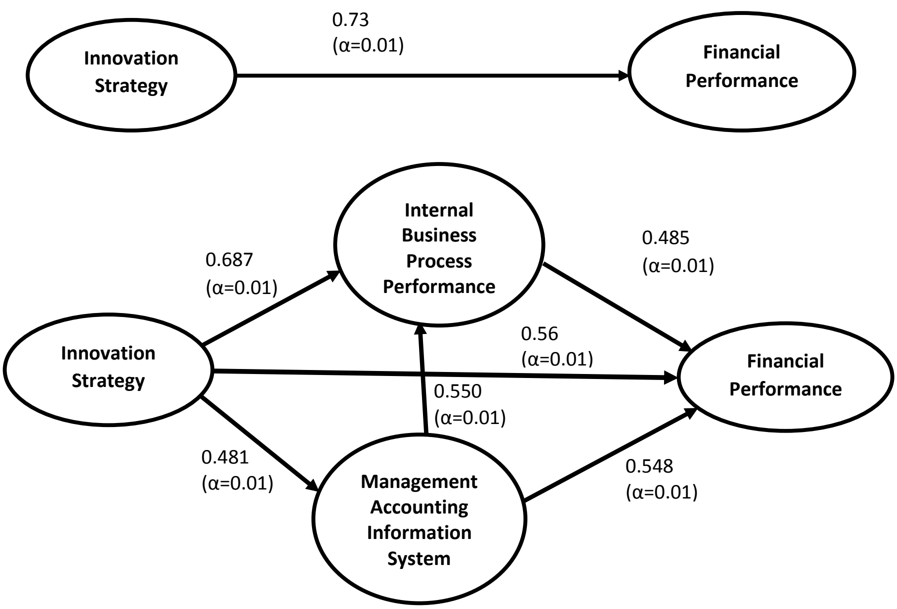
Verhoeven, B., & Johnson, L.W. (2017). Business model innovation portfolio strategy for growth under product-market configurations. *Journal of Business Models, 5*(1), 35-50. http://dx.doi.org/10.5278/ojs.jbm.v5i1.1924

Appendices

Appendix A: Items of Measurement

No.	Name of Variable	Indicator
1	Innovation Strategy	1. Innovation 2. Technology
2	Internal Business Process Performance	1. Operations Management Process 2. Customer Management Process 3. Innovation Process 4. Regulatory and Social Processes
3	Management Accounting Information System	1. Broadscope 2. Timeliness 3. Integration 4. Aggregate
4	Financial Performance	1. Cost Reduction 2. Improvement in Asset Utilisation. 3. Revenue Growth, 4. Improvement in Customer Value

Appendix B: Direct Effect and Indirect Effect



20 Years of Performance Measurement System (PMS) Implementation in Indonesian Local Governments: Why is Their Performance Still Poor?

Hafiez Sofyani*, Rusdi Akbar and Rodiel C. Ferrer

ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to investigate the Performance Measurement System implementation in Indonesian local governments and the phenomenon of institutional isomorphism.
Design/ Methodology/ Approach: This paper employed a qualitative approach, using semi-structured interviews and observations. The samples comprise the heads of departments and individuals representing the agencies and institutions in the Yogyakarta Special Region. A deductive thematic method was utilised as the data analysis technique.
Research findings: The study reveals that institutional isomorphism is still in existence. It plays a dominant role in the Performance Measurement System (PMS) implementation of Indonesian local governments at the coercive level. This situation leads to the underachievement of the successful PMS implementation.
Theoretical contributions/ Originality: This paper fulfills an identified need for studying how institutional isomorphism influences PMS implementation. This area of study is underresearched in the public sector of accounting, particularly in Indonesia.

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Practitioner/ Policy implications: The results of this study show that there is a need for the government or authorities to focus more on understanding how institutional isomorphism at the coercive level may lead to poor PMS implementation. The authorities also need to improve the condition by emphasising on normative isomorphism which can address the problems caused by limited information system, budgetary, human resources and difficulties in determining performance measures.
Research limitation: This study is limited to the Yogyakarta Special Region province thus findings cannot be generalised while the approach used is confined to the qualitative method only. This may also affect the outcome of the findings to some extent.

Keywords: Local Government, Institutional Isomorphism, Performance Measurement System, Public Sector Accounting.
JEL Classification: G11, G02, C91

1. Introduction

Performance Measurement Systems (PMS) is an area of interest in organisational studies. It is the process of collecting, analysing and reporting information about the performance of the organisation to see if what has been achieved is the same as what was intended or should have been achieved. The technique that is to be used to measure the performance of the public sector, nonetheless, was not discussed until 1993 when the United States developed a series of laws which led to the enactment of the Government Performance and Results Act, the GPRA, 1993 (Ittner, Lacker, & Randall, 2003; Atkinson, Waterhouse, & Wells, 1997; Sofyani & Akbar, 2013). The GPRA 1993 requires all agencies to participate in the performance management tasks which involve setting goals, measuring results and reporting on progress. As a developing country, Indonesia only began to introduce the PMS to its public institutions a little later, through the issuance of the Presidential Instruction (PI) No. 7 1999. The PI was issued as a consequence of the governance reform, moving from the New Order Era which is said to be corrupted, non-transparent and non-unaccountable, to the Reform Era which emphasises on better governance, responsibility, transparency, and accountability. Through the Reform Era, the PMS implementation is perceived to be more advanced and of good governance (Sofyani & Akbar, 2013).

Previous studies (Jurnali & Siti-Nabiha, 2015; Sihaloho & Halim, 2005) have highlighted the importance of the PMS as a key component of public sector management. The PMS is said to help organisations to develop integration between strategic planning, target formulation and measurement and reward and punishment (De Araújo, Branco, & Francisco, 2009). Despite the significant role of the PMS, its implementation in Indonesia has not achieved the full aim of improving performance and accountability. According to Jurnali and Siti-Nabiha (2015), the assessment of local public institutions and agencies by the central government has demonstrated poor results. In 2013, only 24 per cent of the districts and cities in Indonesia had achieved good rankings after 14 years of PMS implementation. A more recent data on the performance of accountability reporting was extracted from the Ministry of Administrative Bureaucratic Reform of Indonesia. Data revealed that in 2016, only 12 per cent of local governments in Indonesia had obtained predicates A (excellent), BB (very good) and B (good) for their performance. Meanwhile, 83 per cent of the data had attained predicates CC (more than fairly good), C (fairly good) and D (poor) in their performance.

Sihaloho and Halim (2005) mentioned that most government agencies that implement the PMS are commonly subjected to external pressures due to coercive and mimetic isomorphisms. Undoubtedly, this could cause agencies to display fake obedience (Gudono, 2014). A situation of this nature can cause the PMS implementation to fail or to lead to poor performance of the PMS among local government agencies and institutions (Akbar, Robyn, & Brian, 2012; Sofyani & Akbar, 2013). While institutional isomorphism has been suggested to be the source of disappointing results, its role and level of existence in Indonesian local public agencies and institutions is still less researched. Previous works (Berry, Coad, Harris, Otley, & Stringer, 2009; Akbar et al., 2012) related to PMS had mostly used the institutional theory to provide some insights but these were limited in scope. Theoretically, the enactment of the PI No. 7 1999, as proposed by the Indonesian government, was considered to be mimetic isomorphism, when viewed from the perspective of institutional isomorphism. The PI No. 7 1999 was the government's effort to imitate another more "superior" institution in governance for its mechanism of actions, in this case, the United States' GPR Act of 1993 (Gudono, 2014). The Act made it imperative for the Indonesian government to implement it on its respective institutions. The aim was to enable these institutions to gain insight into how institutional isomorphism may influence successful PMS implementation.

Previous studies (e.g., Julnes & Holzer, 2001; Ittner et al., 2003; Cavalluzzo & Ittner, 2004; Nurkhamid, 2008; Speklé & Verbeeten, 2014; Wijaya & Akbar, 2013; Sofyani & Akbar, 2013) which examined the factors impacting the effectiveness of PMS had been dominated by the quantitative approach, mainly using surveys to collect data. Despite its advantages, the approach also offers risk of partiality because respondents tend to answer the questionnaire normatively or even carelessly, ignoring what would have been reality.

The current study aims to explore the phenomenon of institutional isomorphism in the PMS implementation of local governments in Indonesia. It also aims to look at the effectiveness of the PMS execution. This study extends on the previous research of Sofyani and Akbar (2013) by employing a qualitative research technique. Previously, Sofyani and Akbar (2013) had studied the relationship between training, performance measures, information system limitations, decision-making authority and incentive, and PMS implementation. Their findings indicated that only the training variable had some association with the PMS implementation. Thus, additional explorations are necessary in order to gauge how other variables influence the PMS implementation of local governments. A qualitative approach comprising observations and interviews is thus deemed to be suitable in the context of this study (Kristiantoro, Basuki, & Fanani, 2018). This is because exploring the phenomena in a realitistic world can help to capture the underlying reasons not usually stated in surveys.

The findings of this study expands on the literature of institutional isomorphism, particularly from the Indonesian perspective. This study is believed to carry important implications for government authorities who are compelled to develop a more comprehensive and effective strategy for the successful implementation of the PMS in Indonesian local governments.

The rest of this paper is organised as follows. Section 2 reviews the literature on institutional isomorphism and performance measurement system. Section 3 explains the methodology employed. Section 4 discusses the findings and Section 5 concludes the paper.

2. Literature Review and Focus of the Study

2.1 Institutional Isomorphism

Institutional isomorphism is a concept that is used to explain the homogeneity of organisations in the same field. DiMaggio and Powell

(2000) mentioned that organisations in the same field tend to be alike due to isomorphism caused by imitation or independent development. Isomorphism is more influential on the institution itself than customer demands or market power. Isomorphism has shown that when organisations reach an established level, they tend to move toward uniformity. This is why the best term to describe the process of "uniformity" is "isomorphism". Studies (e.g. Akbar et al., 2012) showed that organisational structures and processes tend to become uniform (isomorphic) and this is characterised by certain acceptable norms for certain types of organisations. The condition can lead to the emergence of certain organisational behaviour to become legitimised. For example, Tolbert and Zucker (1983) found that from time to time, civil service reforms are adopted because it is symbolic of good governance rather than because of efficient goals.

According to Meyer (1979), Fennell (1980) and DiMaggio and Powell (2000), there are two types of isomorphism: competitive and institutional. Competitive isomorphism emphasises the rationality assumption of market competition whereas institutional isomorphism explains that organisations compete not just for resources and customers but also for the power of political legitimacy and institutional, economic and social conformity. Institutional isomorphism is a useful tool to be used to understand the politics and procedures of modern organisational life. It is an equally useful tool for organisations where politics and the culture of "ceremonial and formal administration" are embedded into the organisational environment (e.g., in the local government of Indonesia).

DiMaggio and Powell (2000) further suggested three different mechanisms through which isomorphism occurs. These mechanisms can be described as coercive, mimetic or normative. Coercive isomorphism occurs as a result of pressures exerted by other external parties, upon which the organisation is dependent on for some reason. The pressure can be felt as a force, a persuasion, or an invitation, for instance, to join collusions. Gudono (2014) explained that coercive isomorphism refers to the process where an organisation uses specific features due to the impact caused by coercion or pressure from the state, other organisations or the community. A typical example is when strict regulatory or legal requirements are imposed on companies, requiring them to conform to certain operational standards. Mimetic isomorphism occurs when organisations imitate other organisations that are perceived as having a successful track record. The imitation can occur through the sharing of information among employees or through recommendations from consulting firms or industry associations. In some cases, the adoption of “innovation” that aims to improve the legitimacy is applied so as to show other organisations that they are also trying to improve working conditions. DiMaggio and Powell (2000) gave examples of how the Japanese corporate management style is imitated by companies from other countries because it is deemed to be successful. Finally, normative isomorphism occurs when organisations naturally conform to the context of their industry as a result of their normal business practices. Normative isomorphism is derived from two important sources: formal education and legitimacy. These two elements are noted in the cognitive skills of the professionals produced by university experts. In other words, normative isomorphism is the growth and spread of a professional network that forms the organisation (Larson, 1977; Collins, 1979; DiMaggio & Powell, 2000).

Pacheco, York, Dean, and Sarasvathy (2010) stated that the three institutional isomorphisms can also be graded according to levels. The highest level is normative isomorphism which occurs when organisations have embedded certain practices into their cultural norms, customs and artefacts. The intermediate level is mimetic isomorphism which occurs due to pressure. At the fundamental level is coercice isomorphism where the rules of the game are defined by institutionalism.

Turning their attention to the civil service, Tolbert and Zucker (1983) found that over time, the reforms of the civil service has became pillars of good governance while the purposes of efficiency has been disregarded. These reforms then become a form of political legitimacy where it is seen by the government to have concerns for good governance. This occurs because the government has adopted a mechanism based on legal pressure or coercion from higher institutions and not by normative consciousness from organisations to implement the policies. Based on the explanation by Tolbert and Zucker (1983), it would appear that the isomorphic phenomenon in the PMS implementation of Indonesian local governments, whether based on achieving the organisations’ objectives or imitating the patterns of other institutions, needs to be reviewed. Doing so will help to illustrate whether or not the isomorphic phenomenon is functioning legitimately or whether it signals that the public (stakeholders) and the Indonesian local government are following the new public management concept (Akbar, Robyn, & Brian, 2015). From this perspective, the logic of change in PMS that is institutionalised into the organisation can be perceived through three mechanisms: coercive, mimetic or normative (Scott, 1998; DiMaggio & Powell, 2000). These mechanisms will then indicate whether isomorphism occurred partially or coherently or through trigger or as a triggered object (Sofyani & Akbar, 2013).

2.2 *Implementation of Performance Measurement System and Isomorphism in Indonesia*

PMS implementation in Indonesia began from the issuance of the PI No. 7 of 1999, as mentioned earlier. This instruction has also mandated the implementation of the Government Performance Accountability Report (GPAR) on all Indonesian local governments. The GPAR report carries a comparison result showing what the original plan was and what the actual results had achieved. This report helps the government agencies to determine their performance on a quantitative scale (number or percentage). The benefits of preparing the GPAR include: (1) increasing the accountability of agencies, (2) providing information that is useful for feedback, (3) improving planning in all fields for both programmes or activities and the organisation's resources, (4) improving the agency's credibility in the eyes of a higher institution and ultimately, improve public trust, (5) identifying and assessing the success or failure of the agency in carrying out the duties and responsibilities of the agency and (6) ensuring that government agencies are transparent and accountable in carrying out the common tasks of the government and development.

Although the Indonesian local governments have already implemented the PMS for about 20 years, its implementation scale has not achieved the aims of performance improvement. According to the 2016 report (see Table 1) posted on the website of the Ministry of Administrative and Bureaucratic Reform (MABR), 16 out of 34 provincial governments had obtained a CC-rated performance and one had even obtained a D performance. Only two provincial governments had achieved A performance with 15 obtaining B and BB predicates. The two provincial governments were from the Special Region of Yogyakarta and East Java. At the regency and city level, 83 per cent or 425 of the institutions had obtained ratings of C, CC and D. In general, the MABR minister had considered the performance of the local governments (regency and city level) in Indonesia to be at the C predicate still. The table indicates that Yogyakarta achieved the highest predicate while North Borneo achieved the lowest predicate.

Table 1: Performance Score of Provincial Government 2016[1]

No.	Provincial Governments of Indonesia	Score	Predicate
1	Daerah Istimewa Yogyakarta / Special Region of Yogyakarta	80.68	A
2	Jawa Timur / East Java	80.04	A
3	Kalimantan Selatan / South Borneo	76.30	BB
4	Bali / Bali	75.39	BB
5	Kalimantan Timur /East Borneo	75.15	BB
6	Sumatera Selatan / South Sumatera	75.11	BB
7	Jawa Tengah / Central Java	72.09	BB
8	Sumatera Barat / West Sumatera	70.52	BB
9	Jawa Barat / West Java	70.06	BB
10	Kepulauan Riau / Riau Archipelago	68.62	B
11	Bengkulu / Bengkulu	63.74	B
12	Nusa Tenggara Timur / East Nusa Tenggara	62.42	B
13	Sulawesi Utara / North Sulawesi	61.00	B
14	Bangka Belitung / Bangka Belitung	60.96	B
15	Kalimantan Barat / West Borneo	60.85	B
16	Sulawesi Tenggara / Southeast Sulawesi	60.85	B
17	Kalteng / Central Borneo	60.69	B
18	Daerah Khusus Ibu Kota Jakarta / Jakarta Capital City	58.57	CC
19	Nusa Tenggara Barat / West Nusa Tenggara	58.56	CC
20	Aceh / Aceh	58.24	CC
21	Sumatera Utara / North Sumatera	58.00	CC
22	Sulawesi Selatan / South Sulawesi	56.25	CC
23	Maluku / Maluku	55.62	CC
24	Gorontalo / Gorontalo	55.15	CC
25	Riau / Riau	54.73	CC
26	Jambi / Jambi	52.87	CC
27	Lampung / Lampung	51.13	CC
28	Banten / Banten	51.12	CC
29	Sulawesi Tengah / Central Sulawesi	50.56	CC
30	Sulawesi Barat / West Sulawesi	50.23	CC
31	Papua / Papua	46.03	C
32	Papua Barat / West Papua	32.81	C
33	Malaku Utara / North Maluku	31.24	C
34	Kalimantan Utara / North Borneo	25.34	D

Source: Ministry of Administrative and Bureaucratic Reform (MABR), (2016).

[1] In Indonesia there are 2 (two) levels of local government as a form of regional autonomy, namely the local government level 1 (provincial government) and government level 2 (regency/city government). The performance of local governments evaluated by the Ministry of Administrative and Bureaucratic Reform (MABR) includes both of them. The ranking or predicate of local government performance issued by MABR is AA (excellent), BB (Very Good), B (Good), CC (More than Fairly Good), C (Fairly Good), D (Poor).

Table 2: Aspects of Assessment by MABR

No.	Aspects	Weightage (%)	Components Evaluated
1	Planning	35	Strategic Planning Performance Planning Determination of Performance Alignment between Subcomponents
2	Performance Measurement	20	General Performance Indicators Key Performance Indicators Measurement Performance Measurement Analysis
3	Performance Reporting	15	Reporting Compliance Disclosure and Presentation Utilisation of Performance Information
4	Performance Evaluation	10	Implementation of Performance Evaluation Utilisation of Evaluation Results
5	Performance Achievement	20	Achievement of Performance Determination Achievement of Targets Reliability of Data Alignment with Achievement of Development Targets in Planning Documents

According to the Regulation of the Minister of Administrative and Bureaucratic Reform No. 13/2010 which focussed on the Guidance for Evaluation of Accountability Performance of Governmental Institution, the MABR had conducted the assessment based on aspects depicted in Table 2.

As can be seen in Table 1, the PMS implementation at different levels of the Indonesian local governments is still facing problems that are related to the five assessment aspects set by the MABR. It is assumed that one of the major setbacks is due to the practice of imitating the PMS implementation of more advanced countries. This is also known as mimetic isomorphism. Although mimetic isomorphism is the result of mimicking other organisations because of the good practices and values, mimetic isomorphism also carries adverse effects. For instance, improvement tends to get stuck at the implementation phase. This happens because the implementation is ceremonial in form and not oriented on the substance (Tolbert & Zucker, 1983). The adverse effect is especially more obvious if the implementers fail to understand the substance of the policy. In line with this, Sihaloho and Halim (2005) observed that the majority of government agencies which consistently follow the PMS formulated by the Financial Supervisory Agency and the Institute of Public Administration, tend to be dominated by external pressures. This is recognised as coercive isomorphism (Tolbert & Zucker, 1983). Such pressures often raise false compliances (Gudono, 2014). Another setback is the conflict of interest where most agencies are motivated towards meeting or complying with the requirements of the central government and not the public services (Akbar et al., 2012).

Adapting institutional theory in their study, Akbar et al. (2012) also found that organisations compete with each other for political power and institutional legitimacy. Wijaya and Akbar (2013) focussed on the impact of information, objectives and organisational goals and external pressures against the PMS adoption. They found that PMS implementation is influenced by information and pressure by other parties. In their study, Sofyani and Akbar (2013) categorised the factors which impacted the PMS implementation of agencies into technical and organisational factors. The technical factors include the difficulty of agencies to determine performance measures and the limitation of the information system. Organisational factors include decision-making authority, training and incentives. Their study also demonstrated that training is the only factor that is related to the PMS implementation. Therefore, it is imperative to use the qualitative approach to explore why other variables may not play a substantial role in the PMS implementation. Following Sofyani and Akbar (2013), this study attempts to understand how the technical and organisational factors are relevant to the PMS implementation of Indonesian local governments in the Special Region of Yogyakarta.

2.3.1 Technical Factors

Difficulty to Determine Performance Measures and Information System Limitations

According to the Government Accountability Office (Gates, 1999), the multiple overlapping objectives of public organisations in Indonesia is one of the factors which could potentially hinder successful PMS implementation. This is because it is difficult for organisations to evaluate the policies, programmes and activities which have been implemented for various purposes. Another reason is because the information systems that are employed in implementing the PMS is limited. The limitations of the information system is restrained by its reliability, completeness, timeliness in data acquisition and validity of the data produced (Cavalluzzo & Ittner, 2004). These conditions may trigger imitations from other institutions that are facing similar demands in the PMS implementation. This condition encourages the emergence of mimetic isomorphism (Tolbert & Zucker, 1983; DiMaggio & Powell, 2000). Other situations representing normative isomorphism or coercive isomorphism may also occur because the conditions on the organisations are uncertain and unpredictable. Based on the above arguments, the statement of the problem to be investigated is deliberated as:

RQ1: How do the local government organisations cope with information system limitations and difficulties in determining the performance measures? What is the isomorphism phenomenon that occured?

The answer to this question will be discussed in the following sub-section.

2.3.2 Organisational Factors

Decision-making Authority

As heads of organisations, managers are granted the authority to make decisions. This authority enables them to determine the conditions and methods of work procedure as well as to develop and legitimise the autonomy of their work, with the aim of fostering professionalism (Larson, 1977; Collins, 1979; DiMaggio & Powell, 2000). This practice of professionalism that is developed within an organisation is an indication that there are plans to manage the organisation in accordance with expected normative rules. Hence, professionalism is associated with the isomorphism perspective. The presence of authority in decision making will probably lead to the phenomenon of normative isomorphism (Gudono, 2014). However, the greater authority of managers can create potential barriers in increasing the accountability of government organisations. This happens when the law, the bureaucratic rules, or the separation of powers between the organisational units of the local government increases the limit of authority for decision making by managers (Cavalluzzo & Ittner, 2004). Undobtedly, the increased decision-making authority will hinder the onset of normative isomorphism thereby leading to mimetic isomorphism or coercive isomorphism.

Training

Focussing on government institutions, Nurkhamid (2008) stated that training could serve as an opportunity for employees to understand, accept, and be well versed with the innovation of their institutions. Training can also be an opportunity to reduce employees' stress on the need to implement the innovation. The training in question, among others, include the preparation of performance reports and strategic planning, the preparation of the working plans of the government, the defining and development of the performance target and the indicators of a programme, and evaluating the implementation of the agencies' objectives. Such trainings, it is argued, may have a positive impact on the government employees into implementing a particular policy. This is even more applicable to those employees who are in charge of the PMS implementation of their organisations. Based on the institutional isomorphism theory, it can be said that training can be a driving factor for the emergence of normative isomorphism (Larson, 1977; Collins, 1979; DiMaggio & Powell, 2000; Gudono, 2014).

Incentive

Incentives drive motivations and the key to motivate people into performing what is expected by an organisation is to connect their organisational achievements to organisational incentives that are related to their individual goals. This can propel the individuals to have stronger motivations especially when their actions generate a potential reward. In this regard, it is advisable to have a reward-oriented management control system (Anthony & Govindarajan, 2004). Another perspective is offered by Simons (2000) who proposed that there are two ways to encourage people to work in accordance with the objectives of the organisation. First, when people believe the ultimate goal of the organisation can be achieved (so there is more effort to achieve it), and second, when the management draws the employee's attention to the objectives to be achieved through formal incentives (reward or payment). The result of the incentive policy is in line with the PMS implementation and this can enhance professionalism. This is a form of normative isomorphism (March & Olsen, 1976; Larson, 1977; Collins, 1979).

Based on the above arguments, the objects of observation included in the organisational factors are decision-making authority, training and incentives. Each of these carry different implications. Trainings that are directly related to professionalism will probably lead to normative isomorphism. As said earlier, organisational professionalism is an indication of the organisation's plan to adhere to normative rules (Larson, 1977; Collins, 1979; Gudono, 2014). However, decision-making authority and incentives will probably lead to the emergence of a different phenomenon of isomorphism. Therefore, in studying the isomorphism phenomenon of organisational factors, it is necessary to explore what actually happens, from a neutral and objective point of view. Based on this, the formulation of the problem to be investigated is as follows:

RQ2: How did the local government run the PMS? What kind of isomorphism phenomenon is related to the decision-making authority, training and incentives?

3. Methodology

3.1 Research Approach and Model

Extending on the empirical works of Sofyani and Akbar (2013), this study uses a qualitative approach to collect and analyse data based on thematic interpretations. Since Sofyani and Akbar (2013) had failed to establish the relationship between performance measures, information system limitations, decision-making authority and incentives with the PMS implementation, the current study aims to address the gap by exploring why these variables did not influence the PMS implementation of the Indonesian local governments. A semi-structured interview approach was used to collect data. This approach allows the interviewer to have some control on the interview whilst giving the interviewees some space to present their views in more detail (Eriksson & Kovalainen, 2008; Ahyaruddin & Akbar, 2017).

The respondents were selected through a purposive sampling technique because this approach emphasises on individuals who are available, willing to be interviewed and possess the knowledge needed (Nagy Hesse-Biber & Leavy, 2011). An invitation to participate in the study were sent through email. The respondents were informed about the study, its purpose, and the type of information that will be sought. Respondents who expressed interests to participate were contacted to arrange a convenient time, and were provided with a copy of an interview guide. Each interview lasted between one to two hours and was audio-recorded. The interviews were conducted in the Indonesian language and done at the respondents' workplace.

They were assured that the information they provided would be used only for research purposes, and that anonymity of their names and particulars would be maintained. The recorded data were then transcribed using verbatim. The interview guide shown in Table 3

Table 3: Interview Guidance

Factors	Variables	Exploratory question
Technical	Limitation of Information System	1. What obstacles are often faced by local government units in PMS implementation? 2. What intervention is done in the face of information system limitations?
	Difficulty in determining performance measurement	1. How difficult is it to determine appropriate performance measure? 2. What interventions were done to respond to those difficulties?
Organisational	Decision-Making Authority	1. Is there any authority in the formulation and implementation of PMS? 2. What are the visible effects of granting authority in PMS implementation?
	Training	1. How often were trainings related to PMS conducted? 2. How does the perceived impact of training relate to PMS?
	Incentive[2]	1. Are there any special incentives to support the implementation of PMS? 2. What incentive mechanisms were put in place? 3. How does the existence of such incentives impact the PMS implementation?

[2] The incentives referred to in this study are monetary rewards that are given to local government employees to support the PMS implementation.

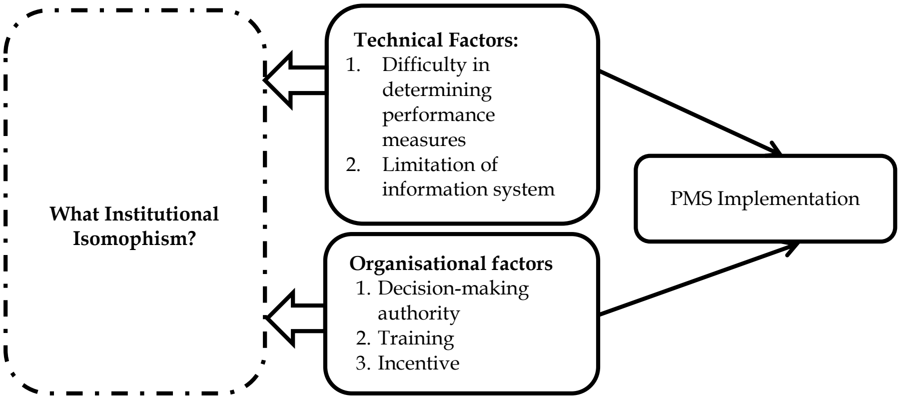

Figure 1: Research Framework

was adopted from Koh, Mohan, and Tan (2015) and Yaya (2017). The research framework used is illustrated in Figure 1. Observations were also conducted on the organisational structure, especially the functions related to PMS implementation, performance reporting, and the relationship of the PMS implementation with other governance activities, specifically those that relate to planning and budgeting. At the observation stage, the researchers examined whether the organisational structure of the local government unit is in accordance with the needs of the PMS implementation and also whether the parties (capabilities and the number of employee) involved were ideal or not, as stated in the Presidential Instruction No. 7 1999. The researchers also examined the completeness of the performance report and its preparation process by assessing the PMS flow chart as well as the transparency of its reporting to the public. Finally, the researchers examined how the performance report was used in relation to planning and budget formulation and the evaluation of strategic plans of the local government. As can be noted, the interview questions were extended to the interviewees according to the desired factors. Figure 1 illustrates the theoretical framework which is based on organisational theories of institutional isomorphism.

3.2 *Respondents' Profiles*

The respondents for this study comprised individuals who were attached to the local government agencies and institutions in the Special Region of Yogyakarta. These respondents were responsible for the respective units hence they were generally, heads of the units such as Head (Sleman Regency), Head of Planning Department (Yokyakarta City, Special Region of Yogyakarta Province, Bantul and Kulon Progo Regency), Head of Administration (Gunung Kidul) in the local government unit. In total there were six respondents. Their details are presented in Table 4.

Table 4: Codification of Interviewees

Code	Detail	Degree	Experience
#YP	Respondent from Yogyakarta Special Region	Master	8 years
#YK	Respondent from Yogyakarta City	Master	12 years
#SL	Respondent from Sleman Regency	Bachelor	21 years
#BL	Respondent from Bantul Regency	Doctorate	25 years
#KP	Respondent from Kulon Progo Regency	Bachelor	13 years
#GK	Respondent from Gunung Kidul Regency	Bachelor	15 years

It appears that the respondents were fairly experienced in their position, with a minium of eight years and a maximum of 25 years. The mean for their total years of work experience is 15.66 years, which is quite an impressive length of experience.

3.3 Data Analysis Technique

Data were analysed using the thematic deductive analysis approach based on Braun and Clarke (2006). As a qualitative analytical method, it identifies, analyses and reports a pattern or theme that is contained in the data. The steps taken in this study encompass coding the data, categorising the data, identifying the main idea and grouping them into themes until a general pattern of tendency emerged from the data. Aronson (1994) had also mentioned that thematic analysis focuses on themes and patterns. Professional linguists (translator) were also consulted when transcriptions were translated into English, to ensure that the research data are communicated clearly.

To ensure the reliability and validity of the data collected, three members of the research team first read each transcript independently, and created a preliminary list of salient and noteworthy respondents' quotes; and identified the reflected themes from the data. The identified codes and themes then, were reviewed and discussed among the team members. The aim is to formalise on an agreed upon code list. Next, final coding of the data was done independently by the team members and compared. During this process, particular attention was paid to themes marked by recurrence, repetition and emphasis. Coding and analysis were facilitated by the qualitative data software, verbatim. All three members reached agreement on final themes, which remained stable and consistent across all the semi-structured interviews conducted. Data were then summarised and grouped into conceptual themes.

4. Research Findings

4.1 Technical Factors and Institutional Isomorphism

4.1.1 Information System Limitations

Based on the analysis, it was established that civil servants do not face issues using the information systems employed by their units to support the PMS implementation (#KP, #GK, #YK, #BL, #YP and #SL). This is because the implementation of the PMS in several local government units which included the determination of performance indicators, data collection and reporting were still done manually. As stated by respondent #KP:

> PMS implementation in this unit is still manual. But Bappeda (Local Government's Planning Board) of Kulon Progo regency are designing and holding preparatory steps of PMS Implementation, including performance reporting, which are based on Information System. (#KP)

Respondent #SL also mentioned:

> … for the overall PMS implementation including performance rating … are still done manually…. Automation is still unimplemented. (#SL)

This finding is very interesting. It tells us that after almost 20 years of introducing the PMS, the local governments in the Yogyakarta region are still running it manually. To further understand the phenomenon, we asked our interviewees, "How to improve the process of determining the performance indicators and reporting?" One of the respondents (#GK) explained that since the implementation of the PMS is a strategic move, the head of the regency needs to ensure that the implementation of the PMS and the reporting is done regularly and executed according to the prevailing regulations. The strategic aspect mentioned here is that PMS and the performance report is one of the information that was highlighted by the respondents. It seems to be influenced by the electability of the Head of the Regency. As stated by #GK:

> … although the PMS implementation in here is still manual, we are still required to implement PMS and report the performance of agencies in accordance with applicable law. It is always emphasised by the Head of the Regency. (#GK)

4.1.2 Difficulty to Determine Performance Measurement

Based on the observations, it was found that the PMS implementation was not done en masse nor was it done systemically. It appears to be handled by two or three local government officers (#BL, #GK and #KP) only. In reality, the PMS implementation should be an integral mechanism where all the local government officers in the respective units should be conducting it together. It also appears that the numerous duties encompassing: (1) budgeting, (2) planning of the work programme, (3) executing the planned programme, (4) running the administration, and (5) preparing the financial statements were each handled by different officers. This suggests that there could be a lack of synchronicity. However, as many agencies had focussed on the timeliness and compliance of budgetary targets and financial statement requirements, only those officials who were affected were engaged in the PMS implementation. These results confirm the findings of Wijaya and Akbar (2013) who noted that the number of local government units implementing the PMS were negatively impacted by the pressure from higher authorities (in this case the central government). Evidence for this is traced to the following responses.

> … PMS implementation, especially the performance reporting is done by two to three employees, including me, and my colleagues. While, ideally everyone should be involved. That is because our work requires a lot of time, so our main focus is achieving our targets and deadlines rather than performance reporting…. (#BL)
>
> In here, specifically in formulating of work plans and reporting of performance accountability, almost all of them were done by me

> …. Because I also have many works, so I ask 2-3 new employees to help me. (#GK)

> … for the performance report, everything about it, is done by a special team consisting of three employess here…. (#KP)

With regards to the problem of determining the performance measurement, the respondents from the Yogyakarta Special Region and Gunung Kidul reported that the constraints pertaining to the technical information systems and the determination of performance measures were already anticipated by the employees at the local government unit. Thus, they would consult academics from universities during the planning and formulation of the performance measurements (#YP and #GK). Despite the constraints in the PMS implementation, they had taken steps to adapt thereby developing their cognitive autonomy which in turn, legitimises their work towards professionalism. This phenomenon fueled normative isomorphism as is evident among competent civil servants who implement the PMS. However, there were also local government units which perceived the determinants of performance measurement related to the performance evaluation of local government agencies as a major obstacle. This is supported by respondent #YK:

> The difficulty occurs during creation and identification… it's difficult to formulate, and this is our weakness. Thus, Bappeda/ Local Government's planning in recent years have tried to revise the strategic planning related performance measures to be more scalable and reliable. (#YK)

Furthermore, the number of tasks and objectives that must be implemented by local government units were numerous. They include strategic planning, determining performance measurements, implementing the PMS, evaluating the performance, reporting and revising the work programme, preparing financial statements and performance reports. These were required by the higher organisation and also regulated by law, as described by the interviewee of Bantul Regency. Respondents were of the opinion that the number of tasks given to local government units were too many and too difficult to manage simultaneously. This had caused the poor performance which is further compounded by the unequal distribution of work structure. For instance, the PMS implementation is assigned to a special team of only two or three members (#BL, #GK and #KP). Besides being overwhelming, this structure is not aligned to the full intention that the PMS implementation should involve all employees in the local government unit.

To complete the task that was usually not understood by their colleagues in the same local government units, the majority of respondents (#SL, #BL, #KP, #GK and #YK) revealed that they would communicate with employees in other units. Hence mimetic isomorphism was triggered. This situation eventually led to fake observance as described by Gudono (2014). The response of #KP is illustrated.

> … Planning, implementing activities and so on, as well as about the controls in the execution of the work including the absorption of the budget, we are always controlled by the leaders, particularly related to the absorption of budget and performance achievements… if we do not understand we usually discuss with colleagues from other (local government) units…. (#KP)

Observations in the field also located evidence of other problems that were not defined in the formulation of the research problem. They include difficulty in defining the strategies for achieving predetermined performance indicators. According to the respondents from Kulon Progo, Gunung Kidul and Yokyakarta, the PMS is triggered by a bureaucratic system and administration which is not supported by budgets. This problem leads to the issue of budgets being overspent and unscheduled.

As the representative of one local government, one respondent (#YK) mentioned that the local government unit was not able to adhere to its budget plan and programme made during the beginning of the year due to inadequate funds. As a result, the implementation of the work programme was delayed and not executed in the latter part of the year. The issue was further burdened by the weak cash management of the agencies (#KP, #BL and #YK). It appears that the availability of funds within local government agencies depend on the realisation of regional revenues. These, in turn, depend on the timeliness of the people paying the taxes and their retribution liabilities. Consequently, it can lead the local government units to overuse their budget massively at the end of the fiscal year without considering the efficiency and usefulness of the expenses. This is supported by respondent #KP:

> … When the activities of a technical nature, in the field we have limited time … administrative constraints that must be met

> occasionally for one reason or another cannot be completed, causing melting of constrained budgets, so work is also hampered. There is also an impact on the percentage of absorption. Usually it makes problems that often occur technically. (#KP)

Respondent #BL also said:

> Usually the obstacles that arise relate achievement targets are not entirely met …. (#BL)

The same issue was also indicated by respondent #YK:

> … In essence achievement is not always in line with budget realisation…. (#YK)

In the condition described above, the executive local government units usually prioritise accountability reporting rather than the realisation of the programme (#YK). In other words, the local government units tend to prioritise the completion of the performance report rather than the achievement of the programme implemented. Clearly, this is caused by the pressure of the head of the institution, both on local government units and the central government. The pressures usually emerge in the form of compulsions to local government units to implement the PMS and to accomplish the performance report with an appropriate format and within the delivery time. It seems that this phenomenon had caused the local government units to implement the PMS and the performance reporting rigidly. However, they were merely legitimate attempts made by the respective units to show obeyance. Their obeyance did not lead to the achievement of the targets hence it can be said that the PMS implementation by the government was dominated by coercive isomorphism. This argument is consistent with the findings of Wijaya and Akbar (2013) and Akbar et al. (2015).

4.2 Organisational Factors and Institutional Isomorphism

4.2.1 Decision-Making Authority

The outcome of this study has shown that one of the barriers in the PMS implementation in local governments was the bureaucratic system that had limited the space/creativity and authority given to civil servants in general (#YK and #BL). It was clear that the authority in strategic planning and decision making of policies were held by the top management. As a result of this, the PMS implementation appeared to be stiff and rigid, pursuing only administrative demands. This was explained by Akbar et al. (2015) who mentioned that the documents projecting the performance report was actually untouched, once the report was written. This condition suggests that the document was merely stored and not employed as an input material or as information for future policy formulation. The claim was endorsed by Cavalluzzo and Ittner (2004). They argued that the law, rules of the bureaucracy, and the separation of powers between organisational units of government increases the limitations of authority for the decision making of the managers or leaders in local governments. This was also articulated by #YK:

> … The space we have is limited…. We already have the plot of jobs. So we only had to fill that. Our expressions were also limited…. (#YK)

Meanwhile, the representative of Bantul Regency (#BL) mentioned that his unit was able to implement the PMS and performance reporting in detail. He asserted that the bureaucratic imposition had limited the creativity of his unit. It also hindered the improvisation which the local government employees could carry out in their roles as employees, especially in relation to the PMS implementation. The respondent from Kulon Progo Regency (#KP) also supported the comments of the respondent from Bantul Regency (#BL). They claimed that the PMS implementation was conducted with full authority mainly to fulfil its objectives. However, due to the restrained authority given, the responsibility and the competence of those who should perform those tasks were often not aligned. For example, in the Department of Tourism, Youth and Sports, the head and the subordinate's expertise were not related to the objectives of the department. Nonetheless, the head would still be in charge of implementing the PMS even though he may have no expertise or knowledge. Therefore, if there were ideas proposed for the PMS implementation and these were not favoured by the head, the idea can be dismissed even though it may be good. This can be traced to the comments of respondent #BL.

> … In the PMS implementation and reporting, we have determined who does what by the regulations. Therefore, excessive improvisation is not allowed, even though the goal is for the essence of the implementation of PMS itself…. (#BL)

This was collaborated by respondent #KP who stated:

> We often find incompatibility of authoritative positions. It constrains ideas that can be used to achieve our targets. If I have any

> idea for a particular activity and my Department Head did not like it, most likely than not, the idea is rejected even though it is a good idea that can help achieve our targets…. (#KP)

4.2.2 Training

The concept of training for employees were perceived by some of the respondents to be beneficial for the PMS implementation (#GK, #YP and #BL). However, they also pointed out that the actual training is merely complementary because training alone was not enough to help in the PMS implementation and PMS reporting. The training became even more important for those who need to implement the PMS but do not have the competencies (#YK and #KP). This observation may be related to the lack of training conducted for the local government employees for the PMS implementation. This is evidenced by what the following respondents mentioned:

> … Somehow training cannot solve the problem (PMS implementation and PMS reporting). I am an engineer and administration process is my weakness, but my boss took me as head of administration in my agency…. (#YK)

Respondent #KP also mentioned:

> … The trainings were done once or twice a year. The government is more focused on the implementation of new regulations, the accrual basis in financial reporting, etc.… (#KP)

4.2.3 Incentives

The analysis of data also showed that the local government units in the Special Region of Yogyakarta (Daerah Istimewa Yogyakarta-DIY) except the Bantul local government, do not impose reward systems such as giving certain incentives as a strategy to stimulate PMS implementation. In the Sleman regency, however, incentives to support the PMS implementation had existed previously. However, the policy was abolished by the Head of the Regency. The interviewees however, do not know the exact reason for the abolition of the policy. It was presumed that this was caused by the absence of a legislative governance (#GK, #KP, #SL and #YP). In the Provincial Government of Yogyakarta (Special Region) however, these monetary incentives were replaced by morale boosters such as appreciation, attention and other intangible rewards. It cannot be denied that the motivation to implement the PMS in accordance with its normative goals is necessary for the local government employees. The claim is supported by some of the interviewees' comments below.

As indicated by respondent #GK,

> Incentives to support PMS and performance reporting do not exist. That is because the practice of PMS and reporting of performance is part of a mandatory civil service duty. The payment is our monthly salary (#GK)

Respondent #YP also mentioned,

> Monetary incentives do not exist. But, the moral incentives are provided, such as appreciation, attention and other forms of non-material incentives…. (#YP)

At the organisational level, normative isomorphism appears to be triggered by the training given to employees. Some respondents however, said that the trainings contributed little to the implementation and the reporting of the PMS (#YK and #KP). The summary of this study is presented Table 5.

From the analysis noted from the interviews and observations, it is without doubt that the PMS implementation in the Indonesian local government units of the Special Region of Yogyakarata is very heavily affected by coercive isomorphism. A number of respondents (#GK, #KP, and #YK) had implied that the implementation and reporting of the PMS were caused by the demands of leadership. These demands need to be obliged by the government agencies. The impact of this on the PMS implementation causes agencies to 'model' their organisation after more successful organisations in order to meet the objectives of the law. This argument is in line with the proposition that the issuance of Instruction No. 7 1999 is the reason why isomorphism is so prevalent in the Indonesian local governments. It is their way of empowering themselves by copying other more advanced countries. Further to that, we also find that the performance report we obtain in this research is also untouched and underutilised. The interviewee from Bantul Regency (#BL) explained that after the performance report was completed, the documents were stored and rarely referred to. This condition characterises the fact that the PMS implementation is indeed limited to fulfilling the legislative requirements only (Akbar et al., 2015). This implies that the PMS implementation is the result of coercion.

Table 5: Summary of Institutional Isomorphism Phenomenon on PMS Implementation in Local Governments

Code	Informant	Factors	Conclusion	Isomorphism Type
#YP	Respondent from Yogyakarta Special Region	Technical		
		• Difficult to determine performance measures	Not felt	Mimetic
		• Information system limitations	Does not exist	Mimetic
		Organisational		
		• Decision-making authority	No authority	Coercive
		• Training	Helpful	Normative
		• Incentive	Non-monetary incentive	Coercive
#YK	Respondents from Yogyakarta City	Technical		
		• Difficult to determine performance measures	Felt and became an obstacle	Coercive
		• Information system limitations	System error could occur	Coercive
		Organisational		
		• Decision-making authority	No authority	Mimetic
		• Training	Not always helpful	Coercive and Mimetic
		• Incentive	No incentive	Coercive
#SL	Respondents from Sleman Regency	Technical		
		• Difficult to determine performance measures	Can be overcome with experience	Normative
		• Information system limitations	Not felt due to PMS implementation still manually	Mimetic
		Organisational		
		• Decision-making authority	No authority	Mimetic
		• Training	Helpful	Normative
		• Incentive	No incentive anymore	Coercive

Table 5: (continued)

Code	Informant	Factors	Conclusion	Isomorphism Type
#BL	Respondent from Bantul Regency	Technical		
		• Difficulty to determine performance measures	Due to mismatch between tasks and competencies	Coercive
		• Information system limitations	Not felt	Normative
		Organisational		
		• Decision-making authority	No authority	Mimetic
		• Training	Helpful	Normative
		• Incentive	Encourage employee performance	Normative
#KP	Respondent from Kulon Progo Regency	Technical		
		• Difficult to determine performance measures	Sometimes occur, due to mismatch between tasks and competencies	Mimetic
		• Information system limitations	Not felt due to PMS implementation still manually	Mimetic
		Organisational		
		• Decision-making authority	No authority	Coercive
		• Training	Helpful	Normative
		• Incentive	No incentive	Coercive
#GK	Respondent from Gunung Kidul	Technical		
		• Difficult to determine performance measures	Can be overcome with training	Normative
	Regency	• Information system limitations	Not felt due to PMS implementation still manually	Mimetic and coercive

Table 5: (continued)

Code	Informant	Factors	Conclusion	Isomorphism Type
		Organisational		
		• Decision-making authority	No authority	Coercive
		• Training	Helpful	Normative
		• Incentive	No incentive	Coercive

Findings Summary

Type of Institutional Isomorphism	Number	Percentage
Coercive	13	40.63
Mimetic	10	31.25
Normative	9	28.12

However, in addressing the various obstacles and discrepancies that occurred, some agencies have initiated and sought for the best solution by adapting their knowledge, experience, and capabilities where these are needed. Where there is normative isomorphism, it is deployed not only as a motivating factor but also as a consequence of the constraints faced by agencies such as limitations of information systems, difficulties in determining performance measures, the limitations of budgetary and human resources. Table 6 summarises the isomorphism phenomenon that have occurred in the Indonesian local government agencies.

5. Conclusion, Implication and Limitation

This study contributes to the body of knowledge by exploring how institutional isomorphism theory is associated with the PMS implementation of Indonesian local governments. In doing so, this study contributes to the underresearched area of institutional isomorphism in the context of public sector accounting in Indonesia. The importance of this study is further enhanced by the issuance of the Presidential Instruction and the reform of governance drawn from the Reform Era. The study of Sofyani and Akbar (2013) served as the basis of the exploration of the institutional isomorphism phenomenon. In particular, it focussed on technical factors such as information systems limitation and the difficulty of determining the performance measures as well as organisational factors such as decision-making authority, training and incentives. The study conducted by Sofyani and Akbar (2013) was limited to testing the influence of organisational variables toward PMS implementation. This study extends on the study of Sofyani and Akbar (2013) by exploring the PMS implementation from the viewpoint of institutional isomorphism which is further classified as: normative isomorphism, mimetic isomorphism and coercive isomorphism.

From the viewpoint of institutional isomorphism, the findings showed the outcome drawn from each of the factors mentioned above: information systems' limitations, the difficulty of determining the performance measures, decision-making authority, training and incentives. Each of these can trigger either coercive isomorphism, mimetic isomorphism or normative isomorphism. However, the dominance of isomorphism occurring in each of the factors related to the PMS implementation is still at the coercive level. This indicates

Table 6: Summary of Institutional Isomorphism Phenomenon Based on Matching Indicators: Those Inferred from Interviews and Observation

Factor	Variable	Consequences	Indicators Obtained
Technical	Limitation of information system	Coercive isomorphism occurs as driver of PMS implementation.	PMS implementation was forced for assertion by regents and legislation.
	Difficulty in determining performance measures	PMS implementation is mainly due to coercion. However, some local government unit's mimetic and normative isomorphism are responses to the obstacles encountered in PMS implementation and to coercive influence mentioned earlier.	Some local government units improvised normative efforts through involving professors from universities and imitating other local government units in determining the appropriate performance measures.
Organisational	Decision-making authority	PMS as coercive demands for accountability with improvised format. This happens because the authority is not really given to those who run PMS.	There is no decision-making authority in both implementation and formulation of PMS.
	Training	It drives normative isomorphism. However, training may also fail to encourage the achievement of normative isomorphism.	There is increased understanding of local government employees hence triggering the birth of normative idea regarding PMS implementation.
	Incentive	No incentive.	Encourage PMS implementation as a compulsion and a mere compliance with the rules.

that the PMS implementation in the local governments is still not in accordance with the actual purpose of the PMS itself. As a constitutional government that is decentralised, it is not suprising that the local governments in Indonesia experienced pressures from the central government to report their performance. The existence of such pressures could be due to the fact that most of them were dependent on the financial resources and various acknowledgements of the central government. This situation however, is not an exception since public institutions in the UK are also considering the law as a change factor (Talbot, 2008). While this appears to be a push factor for PMS implementation, this study suggests that the local government should attempt to naturally build the implementation of the PMS through their daily normal practices, thereby pratising normative isomorphism. An important aspect that must be considered is to continuously conduct structured trainings and to provide rewards either monetary or intangibles for PMS implementation. This can motivate employees to be even more committed to their work. Additionaly, providing the minimal level of training to local government officials would also be able to drive normative isomorphism. Among the local governments situated within the Special Region of Yogyakarta, it appears that only the government of Bantul was implementing an incentive system to support the PMS implementation. It is asserted that the absence of an incentive system drives the PMS implementation towards mimetic isomorphism because the execution of the administrative tasks is based purely on performance only.

This study has several limitations that could potentially affect the results. It was confined to the Special Region of Yogyakarta only. Interviews were only performed in six different local government agencies. Since each local government is unique by itself, neither the local governments' PMS implementation practices nor the respondents from those governments, can be used to generalise the practices of other government units and other government employees working on the PMS. The data obtained and analysed were relatively minimal because the researchers were barred from accessing additional data in their efforts to explore the overall status of the PMS implementation in the local governments. This study is confined to the qualitative approach only, hence it is recommended that future studies apply a mixed research method to enable a more in-depth study and evaluation from different points of views.

References

Ahyaruddin, M., & Akbar, R. (2017). Indonesian local government's accountability and performance: The isomorphism institutional perspective. *Journal of Accounting and Investment, 18*(1), 1-11. http://dx.doi.org/10.18196/jai.190187

Akbar, R., Robyn, P., & Brian, P. (2012). Performance measurement in Indonesia: The case of local government. *Pacific Accounting Review, 24*(3), 262-291. http://dx. doi.org/10.1108/01140581211283878

Akbar, R., Robyn, P., & Brian, P. (2015). Implementing performance measurement systems: indonesian local government under pressure. *Qualitative Research in Accounting and Management, 12*(1), 3-33. http://dx.doi.org/10.1108/QRAM-03-2013-0013

Anthony, R.N., & Govindarajan, V. (2004). *Management control system*. New York, NY: McGraw-Hill.

Aronson, J. (1994). A pragmatic view of thematic analysis. *The Qualitative Report, 2*(1), 1-2.

Atkinson, A.A., Waterhouse, J.H., & Wells, R.B. (1997). A stakeholder approach to strategic performance measurement. *Sloan Management Review, 38*(3), 25-37.

Berry, A.J., Coad, A.F., Harris, E.P., Otley, D.T., & Stringer, C. (2009). Emerging themes in management control: A review of recent literature. *The British Accounting Review, 41*(1), 2-20. http://dx.doi.org/10.1016/j.bar.2008.09.001

Braun, V., & Clarke,V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. http://dx.doi.org/ 10.1191/1478088706qp063oa

Cavalluzzo, K.S., & Ittner, C.D. (2004). Implementing performance measurement innovations: Evidence from government. *Accounting, Organizations and Society, 29*(3-4), 243-267. http://dx.doi.org/10.1016/S0361-3682(03)00013-8

Collins, R. (1979). *The credential society: A historical sociology of education and stratification*. New York, NY: Academic Press.

De Araújo, J.F.F.E., Branco, A., & Francisco, J. (2009). Implementing performance-based management in the traditional bureaucracy of Portugal. *Public Administration, 87*(3), 557-573. http://dx.doi.org/10.1111/j.1467-9299.2009.01762.x

DiMaggio, P.J., & Powell, W.W. (2000). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. In J.A.C. Baum, & F. Dobbin (Eds.), *Economics meets sociology in strategic management* (pp. 143-166). Bingley, UK: Emerald Group Publishing Limited.

Eriksson, P., & Kovalainen, A. (2008). *Qualitative research in business studies*. New York, NY: SAGE Publication.

Fennell, M.L. (1980). The effects of environmental characteristics on the structure of hospital clusters. *Administrative Science Quarterly, 25*(3), 484-510. http://dx. doi.org/10.2307/2392265

Gates, S. (1999). *Aligning strategic performance measures and results*. New York, NY: The Conference Board.

Gudono. (2014). *Organization theory* (3rd Ed.). Yogyakarta: BPFE-Yogyakarta.

Ittner, C.D., Larcker, D.F., & Randall, T. (2003). Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society, 28*(7-8), 715-741. http://dx.doi.org/10.1016/S0361-3682(03)00033-3

Julnes, P.D.L., & Holzer, M. (2001). Promoting the utilization of performance measures in public organization: An emprirical study of factors affecting adoption and implementation. *Public Administration Review, 61*(6), 693–708. http://dx.doi.org/10.1111/0033-3352.00140

Jurnali, T., & Siti-Nabiha, A.K. (2015). Performance management system for local government: The Indonesian experience. *Global Business Review, 16*(3), 351-363. http://dx.doi.org/10.1177/0972150915569923

Kristiantoro, H., Basuki, B., & Fanani, Z. (2017). The institutionalization of spending review in budgeting system in Indonesia. *Journal of Accounting and Investment, 18*(1), 36-53. http://dx.doi.org/10.18196/jai.190190

Koh, E.H., Mohan, A.V., & Tan, K.H. (2015). A more comprehensive approach to competency development: An exploratory study on the risk management function of banks. *Asian Journal of Business and Accounting, 8*(2), 1-24.

Larson, M.S. (1977). *The rise of professionalism: A sociological analysis*. Berkeley, CA: University of California Press.

March, J.G., & Olsen, J.P. (1976). *Ambiguity and choice in organizations*. Bergen, Norway: Universitetsforlaget.

Meyer, J.W. (1979). *The impact of the centralization of educational funding and control on state and local organizational governance* (Institute for Research on Educational Finance and Governance, Report No. IFG-PR-79-B20). Retrieved from https://files.eric.ed.gov/fulltext/ED202139.pdf

Ministry of Administrative and Bureaucratic Reform (2016). *Economic Report on Indonesia*. Retrieved from https://www.bi.go.id/en/publikasi/laporan-tahunan/perekonomian/Pages/LPI_2015.aspx

Nagy Hesse-Biber, S., & Leavy, P. (2011). *The practice of qualitative research: Engaging students in the research process*. Thousand Oaks, CA: Sage Publications.

Nurkhamid, M. (2008). Implementasi inovasi sistem pengukuran kinerja instansi pemerintah. *Jurnal Akuntansi Pemerintah, 3*(1), 45-76.

Pacheco, D.F., York, J.G., Dean, T.J., & Sarasvathy, S.D. (2010). The coevolution of institutional entrepreneurship: A tale of two theories. *Journal of Management, 36*(4), 974-1010. http://dx.doi.org/10.1177/0149206309360280

Scott, R.W. (1998). *Organizations: Rational, natural, and open system* (4th ed.). Upper Saddle River, N.J.: Prentice Hall.

Sihaloho, F.L., & Halim, A. (September, 2005). *Pengaruh faktor-faktor rasional, politik dan kultur organisasi terhadap pemanfaatan informasi kinerja instansi* *pemerintah daerah*. Paper presented at Simposium Nasional Akuntansi VIII Solo, Indonesia.

Simons, R. (2000). *Performance measurement and control system for implementing strategy: Text and cases*. Upper Saddle River, NJ: Prentice Hall.

Sofyani, H., & Akbar, R. (2013). Hubungan faktor internal institusi dan implementasi sistem akuntabilitas kinerja instansi pemerintah (sakip) di pemerintah daerah. *Jurnal Akuntansi dan Keuangan Indonesia, 10*(2), 184-205. http://dx.doi.org/10.21002/jaki.2013.10

Speklé R.F., & Verbeeten, F.H.M. (2009). The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research, 25*(2), 131-146. http://dx.doi.org/10.1016/j.mar.2013.07.004

Talbot, C. (2008). Performance regimes—the institutional context of performance policies. *International Journal of Public Administration, 31*(14), 1569-1591. http://dx.doi.org/10.1080/01900690802199437

Tolbert, P.S., & Zucker, L.G. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reforms 1880-1935. *Administrative Science Quarterly, 28*(1), 22-39.

Wijaya, A.H.C., & Akbar,R. (2013). The influence of information, organizational objective and targets, and external pressure toward the adoption of performance measurement system in public sector. *Journal of Indonesian Economy and Business, 28*(1), 62-83. http://dx.doi.org/10.22146/jieb.6230

Yaya, R. (2017). Twelve years of scottish school public private partnerships: Are they better value for money? *Journal of Public Procurement, 17*(2), 187-228. http://dx.doi.org/10.1108/JOPP-17-02-2017-B002

Regulation

Regulation of The Minister of Administrative and Bureaucratic Reform No. 13/2010 about The Guidance for Evaluation of Accountability Performance of Governmental Institution.

Presidential Instruction (PI) No. 7 1999 about Performance Measurement Accountability System and Performance Accountability Report for Government's Institutions.

Corporate Ownership, Internet Penetration and Internet Financial Reporting: Evidence from the Gulf Cooperation Council Countries

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to examine how the individual effect of company-level ownership structure and the joint-effect of company-level ownership structure with country-level Internet penetration, can impact on Internet Financial Reporting (IFR).
Design/ Methodology/ Approach: An index consisting of 35 IFR items was used to collect information from 152 listed financial companies from the Gulf Cooperation Council (GCC) countries. These companies were from Bahrain, Oman, Qatar, Saudi Arabia and the United Arab Emirates. Data were analysed using regression analysis.
Research findings: The findings imply that companies with high government and family ownerships have lower extent of IFR. High quality IFR is evident in companies located in countries with a strong Internet penetration. However, the association between corporate ownership structure and IFR is not influenced by the country's Internet penetration.
Theoretical contributions/ Originality: Our study is the first cross-country comparative analysis that utilises data from the GCC countries to explore the determinants of the IFR. This study incorporates

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company-level governance and country-level institutional factors which are relevant and unique in the context of the GCC to add to the existing evidence that had mainly concentrated on a single-country setting or the developed market.

Practitioner/ Policy implications: The findings of this study, which are related to the negative impact of government and family ownership on IFR can be attributed to the regulators in the GCC countries. It is recommended that the GCC improve its enforcement of legal protection for shareholders so as to protect the minority shareholders' interests.

Research limitation: Future cross-country analysis on IFR can focus on other emerging markets that differ from the GCC. In addition, these studies can consider other relevant company-level governance aspects such as managerial ownership and country-level institutional factors such as cyber security risks as variables.

Keywords: Ownership, Internet Penetration, Gulf Cooperation Council.

JEL Classification: G11, G02, C91

1. Introduction

Internet Financial Reporting (IFR) benefits companies. It increases the companies' overall transparency and promotes the public's awareness about the performance of these companies (Kelton & Yang, 2008). At the same time, it reduces information asymmetry (Puspitaningrum & Atmini, 2012). Financial companies in the Gulf Cooperation Council (GCC) region are expected to expand their activities globally and to raise their capital internationally (Al-Obaidan, 2008; Aly, Simon, & Hussainey, 2010) and without doubt, this goal can be accomplished through technology. The heightened use of the Internet can facilitate the dissemination of information to a wider circle of potential stakeholders comprising national and cross-border investors. However, since the IFR practices are generally voluntary and unregulated (Dutta & Bose, 2007), there are variations in the manner companies implement their IFR practices. This study examines the effect ownership structure and Internet penetration of companies have on their IFR practices. The aim of this study is to test whether Internet penetration moderates the relation between ownership and IFR.

Corporate governance refers to the mechanisms, processes and relations by which companies are monitored and controlled for good practices. Some corporate governance mechanisms that are used to gauge a company's overall information disclosure have significant roles to play in the IFR practices policy (Kelton & Yang, 2008). Prior studies that examined the role of corporate governance in IFR practices have tended to focus on developed countries (e.g. Kelton & Yang, 2008; Xiao, Yang, & Chow, 2004) or on a single-country (e.g. Elsayed, El-Masry, & Elbeltagi, 2010). Undeniably, the findings of these empirical investigations are significant but there appears to be a lack of focus in looking at some aspects of governance that can hamper good governance and IFR in developing countries such as the GCC region.

Aiming to address this gap, the current study thus concentrated on the GCC countries. The empirical evidence drawn from the GCC market can add to the existing knowledge involving IFR studies. Our study takes into account the legal system, providers of finance, socio-economic environment and political norms of the institutional environment of these countries and we hypothesise that these will differ from those of the developed regions. We reason that these institutional factors can significantly influence the accounting systems/standards of the respective countries in the region thereby affecting the region's disclosure of financial information. In this regard, we argue that robust corporate governance plays an important role in less matured economies because its good practices can encourage foreign investments and promote economic growth.

Instead of focussing on corporate governance from the board of directors' composition and their roles (e.g. Botti, Boubaker, Hamrouni, & Solonandrasana, 2014), our study focusses on the governance aspect which involves the composition of corporate ownership structure. This is because unlike developed markets, emerging countries face issues such as agency costs which have resulted from the conflicts that exist between controlling owners and minority shareholders and not conflicts between managers and owners (Fan & Wong, 2002). There is evidence to show that companies in emerging markets adhere to the checklist of best practices as set by the security regulators. However, this adherence is conducted mainly for appearances and not for substance. Corporate boards are also deemed as mere rubber stamps for management decisions (Bussin, 2012) because these boards are often made up of the "old boys' clubs" whose members are so familiar with each other that they often overlook regulations. Without doubt, this phenomenon had caused the role of corporate governance to be more focused on ownership structure rather than on the composition of the boards.

Turning our attention to the institutional context of the GCC region, this study examines the company-level governance that is related to government ownership and family ownership. Both types of ownership structures, although commonly employed and are essential in the economic development of the GCC countries (Santos, 2015; Baydoun, Maguire, Ryan, & Willett, 2013; Maghyereh & Awartani, 2012), may provide a source of incentives that have the propensity to generate a substantial agency problem.

By making a cross-country comparative analysis, this study is able to further explore the interplay that exists between governance and the IFR. This is achieved by considering the firm's external environment as an important factor in influencing IFR decisions (Debreceny, Gray, & Rahman, 2002). Despite the many sociocultural and institutional similarities, the GCC countries also have disparity in terms of their respective Internet penetration rates (Alqudsi-ghabra, Al-Bannai, & Al-Bahrani, 2011). Further, in the GCC countries, the interplay between significant aspects of corporate governance of companies and their institutional environment is essential. It helps to disentangle the factors that are most prevalent in determining corporate disclosure practices and transparency. Our study adds to the literature of the IFR by examining the joint effect of company-level and country-level factors on the IFR. One of the contributions drawn from our study will show that when the country's Internet penetration rate is strong, it is easier and less costly to strategically provide financial information via the Internet. This occurs despite getting no pressure from the controlling shareholders hence, it increases the quality of the IFR. However, despite the feasibility of providing company information via the Internet, there is a prevalence of a core factor which hinders the process. This can be traced to the lack of demand for IFR disclosures from the controlling shareholders hence, a low quality IFR is expected.

Our sample consists of 152 financial companies enlisted from the six countries of the GCC: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The financial sector in the GCC countries is relatively developed (Khediri, Charfeddine, Youssef, 2014) due to the high economic growth that prevailed in the last two decades (Mohamed & Basuony, 2014) and also as a result of the development of Islamic banking in the region (Gheeraert, 2014). The strength of financial companies is fundamental in establishing a sound financial system within the GCC countries. In this regard, we posit that government and family ownerships of these financial companies affect the IFR. However, the association between these corporate ownership structures and the IFR is influenced by the country's Internet penetration rate. We believe that our findings, which are derived from analysing the 2012 data of these GCC countries, are relevant in the current scenario. This is because the need to provide transparency in securing investments has escalated but the process is still being hampered by the embedded deficiencies of the ownership structure and the governance practices of the companies concerned.

The remainder of this paper is structured as follows. Section 2 provides the literature review and the hypotheses development. Section 3 discusses the research methodology. Section 4 presents the results and Section 5 concludes the paper.

2. Literature Review and Hypotheses Development

2.1 The Role of the Financial Sector in the GCC Countries

During the period when economic growth in the GCC countries was fuelled by booming oil revenues, the interest for investment opportunities was also developing at a rapid rate (Basuony & Mohamed, 2014). This interest is still very prevalent today in these countries although they are experiencing a subdued GDP growth which is caused by the slide in oil prices as well as the political unrest of neighbouring countries. Under both these circumstances, companies in the GCC countries have no choice but to expand their activities globally, with the intention of raising their capital internationally. This desire has become a global objective of the GCC (Al-Obaidan, 2008; Aly et al., 2010) as is evidenced by the reforms implemented by the GCC countries. These reforms were implemented as a move towards improving their business climate and competitiveness, a move that has been approved by the World Bank (2018), as stated in its *Doing Business Report 2018*. There has been a mixed picture painted about foreign direct investments (FDIs) coming into the GCC countries (United Nations, 2017) but the GCC is forging ahead with their economies because it is believed that the long-term economic diversification plans can help to build their economies. To stimulate this economic growth, support has to be provided through the fiscal policies and the growth in non-hydrocarbon sectors. Some examples of this long term plans include Saudi Arabia Strategy 2025, Oman – Vision 2020, the UAE – Vision 2021, Bahrain – Vision 2030 and the Qatar National Vision 2030.

The financial sector plays a key role in the economies of the GCC countries. This is because it serves as the financial intermediaries which support the continuing growth of the countries' oil and gas sector as well as their non-oil sectors. Analysis on the 2016 published annual earnings of 56 leading listed commercial banks across all the GCC countries stated that the overall outlook for the GCC's banking sector is positive and that the sector will remain resilient to the current economic challenges (KPMG, 2017). This outcome could be accomplished through the ongoing government support and their infrastructure investments. The financial sector is one of the most economically viable diversification option for investors. It is the second highest contributor to the country's GDP, after the oil and gas sector. It is also dominated by the banking sector which remains to be the cornerstone of the non-oil GDP growth in the economies of the GCC countries (Al-Obaidan, 2008; Al-Hassan, Oulidi, & Khamis, 2010). Due to the growth of Islamic finance in the GCC region, as one of the world's largest Islamic banking markets, the role of the financial sector have become even more emphasised (Khediri et al., 2014).

The GCC countries' dominance in oil, gas and other natural resources makes the region similar in some ways. These countries possess specific features that differentiate them from other industrialised or developing economies. An example is their high degree of state regulation (Samargandi, Fidrmuc, & Ghosh, 2014). There has also been extensive reforms involving the financial sectors of the GCC countries as the GCC region aims for more integration with the global community and a diversification in their economies (Kamla & Roberts, 2010; Maghyereh & Awartani, 2014). Some of these reforms include strengthening banking regulations and supervision, removing interest rate controls, and making moves towards open market policies. This means that the financial sectors are facing major challenges which involve dynamic shifts in regulations, demands for deregulation, globalisation and development in banking techniques and services (Chahine, 2007; Al-Obaidan, 2008). The significant structural changes involving the financial sector aim to stimulate financial liberalisation and financial restructuring which can make the banking sector more competitive (Maghyereh & Awartani, 2012). In particular, the Islamic financial institutions face additional agency problems (Safieddine, 2009) because of the need to maximise shareholders' wealth which is in compliance with Shari'ah laws. In this regard, financial companies in the GCC region are more highly motivated in disseminating information which is done by engaging in Internet activities (Bollen, Hassink, & Bozic, 2006).

2.2 *Internet Financial Reporting (IFR)*

The objective of financial reporting in the modern business environment is to assemble financial information that is useful to existing and potential investors, lenders, creditors and other users for making decisions about providing resources to a company (Al-Shammari, 2013). Rapid developments in information and communication technology have led organisations in many countries to consider the impact of the Internet on the delivery and dissemination of business information (Beattie & Pratt, 2003; Jones & Xiao, 2004). The developments involving the Internet have increased the demand for online corporate information, in general, and financial information, in particular (Alali & Romero, 2012). These demands have resulted in the evolution of financial reporting, shifting from conventional means of the print-based to the modern Internet-based reporting (Al-Htaybat, 2011).

Corporate information disclosed through the Internet helps users, especially small or foreign investors who do not have direct and immediate access to the company's financial information (Trabelsi, Labelle, & Dumontier, 2008). Likewise, the IFR is seen as a mechanism that can help to reduce information asymmetry (Healy & Palepu, 2001; Trabelsi et al., 2008; Cormier, Ledoux, & Magnan, 2012) and this can therefore, increase the liquidity of the firm's stocks and reduce its cost of capital (Healy & Palepu, 2001; Botosan & Plumlee, 2002). The IFR enables a relatively cheap and an extremely fast and great presentation of useful information in varying formats. It helps companies to disclose and share information about the companies' performances and activities through interactive and connected reports, to millions of Internet users on a daily basis (Pervan, 2006). The mechanism provides information instantaneously to a global audience (Abdelsalam, Bryant, & Street, 2007), disclosing a more up-date information hence improving efficiency and effectiveness (Kelton & Yang, 2008). The mechanism also encourages investment (Aly et al., 2010) and creates an overall increased market transparency and public awareness (Kelton & Yang, 2008; Ali-Khan, Ismail, & Zakuan, 2013). These advantages make the IFR an increasingly preferred means of corporate communication. It also helps companies to overcome issues such as significant maintenance costs, information overload as well as trust and security (Andrikopoulos, Merika, Triantafyllou, & Merikas, 2013).

Despite the usefulness of the IFR, there are variations in how this is practised among countries. Many studies (Ashbaugh, Johnstone, & Warfield, 1999; Craven & Marston, 1999; Ghnaya, 2015) have focussed on firms' characteristics as the determinants behind the variations. Focussing on developed countries, Ashbaugh, Johnstone and Warfield (1999) examined U.S. firms while Craven and Marston (1999) studied companies in the U.K. context. Both these studies indicate that larger firms have more tendencies to utilise IFR. Studies that follow suit expanded the earlier researches by including data from developing countries such as Ghnaya (2015) and Ahmed, Bruce and Theresa (2017). Literature discussing the IFR (e.g. Ali-Khan & Ismail, 2011; Turmin, Hamid, & Ghazali, 2015, Qasim & Al-Barghouthi, 2017) has introduced various theories which also disclosed the identification of various determinants of the IFR. These determinants include leverage, profitability, liquidity and types of auditors. A meta data analysis done by Mokhtar (2017) confirmed the prediction stressed by the agency theory, signalling theory, political cost hypothesis and innovation theory for explaining the IFR. Mokhtar (2017) found that other than size, there was a significant positive association between profitability, leverage, auditor type and Internet reporting. Therefore, it was recommended that studies on IFR consider these characteristics of firms as determinants for IFR practices.

Despite the growing importance of the IFR and the advantages it offers to the financial markets, the IFR is still in its infancy stage in the GCC countries (Oyelere & Kuruppu, 2012; Basuony & Mohamed, 2014). Many factors impede the utilisation of the Internet for financial reporting in the GCC countries and this encompass the social, cultural, institutional, and legal factors (Moradi, Salehi, & Arianpoor, 2011). Prior studies (e.g., Al-Shammari, 2007; Basuony & Mohamed, 2014), including those conducted in the GCC countries, indicate that the variation or differences noted in the level of IFR disclosure between these countries are expected. This is attributed to the differences in capital market development, differences in macroeconomic trends and differences in corporate governance practices and reporting (Bartulović & Pervan, 2012; Botti et al., 2014). Evidence was traced to the Behavioural Assessment Score for Investors and Corporations (BASIC) which had observed that companies in the GCC region had received a low score on disclosure (3.24/10.0). The BASIC score that looked into the communication standards for disseminating important information to the stakeholders such as the availability of websites, had observed that companies in the GCC countries were still withholding important information from shareholders due to the region's renowned culture of secrecy (Halawi & Awan, 2008). While there is an increasing need for the IFR to be implemented in the GCC region, information has not been forthcoming. The poor IFR disclosure practices may lead to losses for domestic as well as foreign shareholders.

2.3 *Corporate Governance and IFR*

Studies (e.g. Ojah & Mokoaleli-Mokoteli, 2012; Debreceny et al., 2002; Turrent & Ariza, 2012) linking the IFR disclosures with the dimensions of corporate governance, such as the board of directors, audit committee and ownership structure, provide evidence from the perspective of a single country or a few countries. The results gathered from these studies suggest that there is a greater demand for information to be delivered in content details and in speed among companies that practises good governance. As such, corporate governance is important in the adoption of the IFR. However, empirical evidence noting the relationship between corporate governance characteristics and IFR disclosures had been mixed and inconclusive. The mixed findings could be attributed to the different types of corporate governance mechanisms which have been applied in different institutional settings. In addressing this concern, our study explores the governance aspects from the corporate ownership structure in the GCC countries by focusing on government and family ownerships.

Contrary to a majority of companies in developed countries, corporate ownership structures in GCC countries are highly concentrated. Many GCC listed companies are mainly dominated by families (Chahine, 2007; Baydoun et al., 2013) whose members can influence the board's decision and where family members can be appointed onto the corporate board. GCC listed companies can also be dominated by the government (Maghyereh & Awartani, 2012). As can be noted, governments and quasi-government agencies take charge of funds such as pension and sovereign funds. These agencies own a substantial amount of securities (Al-Khouri, 2012). Such concentrated ownerships could adversely affect the rights of minority shareholders (Baydoun et al., 2013) and this is an indication of the high information asymmetry

(Orens, Aerts, & Cormier, 2010). In this regard, the demand for IFR is expected to vary as a result of these dominant ownerships, based on the variations in agency conflicts and information asymmetry. Therefore, it is unclear whether the GCC companies, which explicitly suffer from high ownership concentrations, have the tendency to improve their IFR so as to protect the rights of minority shareholders.

2.3.1 Government Ownership and IFR

Theoretically, there are two opposite perspectives on how government ownerships affect voluntary disclosure. Firstly, according to the agency theory, government ownership increases moral hazards and agency problems. Wang (2003) argued that government shareholders have a higher degree of political influence due to its status of being purely government agencies. Disclosure is a means of mitigating these problems. Therefore, a positive relationship between government ownership and disclosure is expected (Eng & Mak, 2003). Contrastingly, the capital need theory assumes that companies with high governmental ownership may not be motivated to raise their capital by releasing voluntary information due to the availability of government funding and also other financial resources. Xiao et al. (2004) observed that companies characterised by government ownerships are less motivated to maintain a healthy demand for shares.

Consistent with the two opposing perspectives, there is evidence illustrating mixed results on the association between government ownership and voluntary disclosure. Some studies (Xiao et al., 2004) had reported a negative relationship between higher government agencies' ownership and website information disclosure. Other studies (Kelton & Yang, 2008; AbuGhazaleh, Qasim, & Roberts, 2012) demonstrated that there was a positive and significant relationship between government ownership and the IFR. Although the role of government ownership is substantial in the GCC countries (Al-Khouri, 2012), its impact on the IFR disclosure has not been thoroughly explored. To the best of our knowledge at the time this study was conducted, only one study (Momany & Pillai, 2013) had explored the impact of government ownership on the IFR in the GCC setting. Using data extracted from 65 companies listed on the Abu Dhabi Securities Exchange (ADX), Momany and Pillai (2013) evaluated the extent of these companies' IFR. Their results revealed that 89 per cent of the quoted companies had websites and 60 per cent of the companies that had websites presented their financial information on the websites. The findings also revealed that profitability and corporate governance were significant determinants of the IFR. In relation to government ownership, there was no evidence to indicate that government ownership was associated with the IFR among companies in the United Arab Emirates. Nevertheless, the findings in Momany and Pillai (2013) were based on a small sample size and a dummy variable to proxy for the dependent variable. Our study seeks to contribute to literature by expanding and improving on the evidence of these past studies.

Overall, literature suggests that there are two possible ways on how government ownership can affect the IFR – from the theoretical perspective and from empirical evidence. As an external governance mechanism, the monitoring role of government ownership may likely encourage IFR practices due to the need to reduce the high agency costs arising from such ownerships. However, government ownership corporations may have a less desire to promote the IFR since there are less pressures to gain capital from the larger market. In the context of the GCC countries, there is a relatively large government stake in the listed companies (Santos, 2015). This can trigger various concerns. On the one hand, firms with highly concentrated government ownership would need to be more transparent to legitimise the support that they might have received from the government. On the other hand, these companies might feel less pressured to make substantial disclosures due to their position of being in secure positions as government-backed companies. In this study, we focus on government ownership and family ownership structures so as to unravel the dilemma, and accordingly, contribute to the discipline. Our focus on government ownership is in line with the need to explore the agency costs arising from concentrated ownership rather than the role of management, which is more apparent in the GCC countries. In line with the inconclusive findings that have been discussed above, we posit that government ownership does affect corporate disclosure practices via the IFR. Thus, the hypothesis formulated is as follows:

H_1: There is an association between government ownership and the level of IFR.

2.3.2 Family Ownership and IFR Disclosure

Companies characterised by concentrated and controlling ownerships such as family ownership, may be reluctant to provide voluntary disclosures. This is because as a family, the owners in these companies have alternative ways (inside) of getting information (Wang, Ali & Al-Akra, 2013; Al-Shammari, 2007). In the context of company concentration as characterised by family ownership, Fleming, Heaney and McCosker (2005) argued that the agency costs of a firm decrease as family ownership increases. Family-controlled companies have little motivation to disclose information in excess of mandatory requirements because the demand for public disclosure is relatively weak in comparison to companies that have wider ownership (Chau & Gray, 2002). Family ownership may impede the quality of disclosure because a listed company with a controlling family member on the board tends to have less transparent disclosures in its annual report (Ho & Wong, 2001).

Mixed findings had been reported showing the association between family ownership and IFR. Thangatorai, Jaffar and Shukor (2013) reported that the existence of family members sitting in the corporate board tends to be negatively related to IFR disclosures. Nonetheless, Ali, Chen and Radhakrishnan (2007) found that there was a positive relationship between family companies and financial disclosures. This is also endorsed by Wan-Hussin (2009) and Wang (2006). Using data taken from 179 companies listed on the Kuwait Security Market to examine the IFR and its determinants, Alanezi (2009) found that 56 per cent of the sampled companies presented their financial reports on their websites. The findings also showed a significant and positive relationship between IFR and firm size, auditing type and industry type. However, Alanezi (2009) did not find any evidence to support his hypothesis stating that Kuwaiti companies with a higher proportion of dominant family members on the board were less likely to engage in IFR disclosures.

Thus, while theoretical perspective indicates that companies with high family ownership have less pressure but needs greater disclosure due to the lower agency costs surrounding these companies, evidence from prior studies (Thangatorai et al., 2013; Ali, et al., 2007; Alanezi, 2009) has been inconclusive. This implies that there is a need to improve the understanding and to clarify the issue regarding the role of corporate governance from the perspective of family ownership. On one hand, firms with high family ownership may want to publicly reveal more information so as to justify and retain their position in the capital market. On the other hand, there are tendencies for family owners to be firmly entrenched in the running of their companies, and so less disclosure is a way to cover up their entrenchment. In the

GCC countries, companies are mainly dominated by families (Chahine, 2007; Baydoun et al., 2013; Santos, 2015). This makes the environment a perfect setting to explore on to understand how one type of concentrated ownership structure may characterise the many emerging economies. A higher concentration of family ownership in corporations or companies suggests that the appointment of family members onto the company board may not necessarily be based on merit. Rather, it could be due to the linage, loyalty and informal/personal relationship with the owners of the firm. While companies with family ownership may have the tendency to look after the interests of large shareholders (Baydoun et al., 2013), the assumption has not been sufficiently tested. By focussing on the role of governance from the perspective of family ownership, our study will contribute to the understanding of agency cost that arises from concentrated ownership related to families. The finding may be crucial especially for the emerging economies of the GCC region. As findings on the association between family ownership and IFR have been inconclusive, we hypothesise that family ownership does affect the IFR of companies in the GCC countries. Thus, the hypothesis formulated is as follows:

H_2: There is an association between family ownership and the level of IFR.

2.4 *Internet Penetration and IFR*

Aside from company-level factors, the differences in the institutional environment across countries can also explain the variations in IFR. In general, the institutional environment surrounding each country creates different managerial incentives that shape the behaviour of corporate executives, investors, regulators, and other market participants (Bushman & Piotroski, 2006). In this regard, the strategic decisions involving disclosure and transparency of financial information through the IFR is likely to be influenced by such institutional factors. This outcome is comparable to how regulations and enforcement in different countries influence the development of accounting standards and practices (Saudagaran & Diga, 1997) and shaping the quality of their financial reporting (e.g. Ball, 2006). In the context of the GCC countries, issues associated with the institutional environment have become particularly important when it involves the IFR. The Internet has witnessed a rapid spread across the Middle East in the twenty-first century (Alqudsi-ghabra et al., 2011). This development suggests that the Internet meets the demand of both the companies and the stakeholders. Looking at the companies of the GCC countries, it appears that the Internet has also worked towards enhancing their local and global recognition. From the perspective of the stakeholders such as shareholders, clients and suppliers, it appears that the Internet is very much utilised to seek information for effective and efficient decision-making. Nonetheless, the case of the IFR disclosure may be viewed as an innovative adoption. This can be explained by using the diffusion of innovation theory. According to this theory, organisations differ with respect to innovations adoption. Chircu and Kauffman (2000) indicated that companies encounter a number of barriers in adapting information technology. The barriers may be related to the valuation of the information technology process (organisational barriers) or to the conversion from the current situation to a new one (user barriers).

Studies (e.g. Isidro & Raonic, 2012; Leuz, Nanda, & Wysocki, 2003; Bushman & Piotroski, 2006) using data from multiple countries have suggested that variations in the institutional environment affect the quality of financial reporting. Xiao et al. (2004) had also asserted that the development of technological innovation such as the emergence of the Internet has an impact on accounting information practices. The Internet penetration rate, which can be inferred from the percentage of Internet users in the entire population of a country, is one method of measuring the technology which also indicates human development. In their study, Debreceny et al. (2002) argued that countries with a heavy penetration of Internet usage tend to have many companies adopting the IFR as a means of disseminating financial disclosures. They stated that from the users' perspective, a high level of Internet penetration at the country level leads to more demand for the IFR. From the suppliers' perspective, the Internet acts as a conduit for a more efficient dissemination of information. Pervan (2006) also pointed out that companies can satisfy investor needs for information quickly and cheaply through the Internet. This reporting environment allows investors to be updated constantly. In contrast, the inducement for the IFR is likely to be low if investors do not use the Internet very frequently.

The need to examine the impact of institutional environment on the IFR, particularly when related to the Internet revolution, is justified. Undoubtedly, the ability to capitalise on the full benefit of the IFR relies on the infrastructure that promotes, facilitates and enables the efficient dissemination of information. A supportive environment makes it easier for companies to transmit transparency, thereby encouraging greater reporting of financial information. In the context of the GCC countries, it is observed that the pace of change related to the number of reported Internet users is impressively expanding but the utilisation of the Internet as a potential medium of communication has not been fully exploited. This is traced to Elmasry, Benni, Patel and Moore (2016) who asserted that businesses and governments have not fully embraced the digital opportunity yet while consumers are primed and ready to lead a digitally enhanced live. Studies (Debreceny et al., 2002; Ojah & Mokoaleli-Mokoteli, 2012) who had examined the relationship between Internet penetration and the IFR had produced inconclusive results. Debreceny et al. (2002) predicted that the IFR vary according to the level of Internet penetration. However, their prediction was not supported by the results of their studies. Likewise, Pérez, Bolívar and Hernández (2008) found that the Spanish public sector with Internet promotion policies tended to provide more financial-budgetary information. Ojah and Mokoaleli-Mokoteli (2012) also found that, aside from corporate governance structure, physical and institutional infrastructures are important determinants of a country's adoption of the IFR. Their analysis, derived from companies recruited from 44 developed and developing countries, showed that Internet penetration has a positive significant association with IFR disclosures.

This study looks at voluntary financial reporting via the Internet. It focusses solely on Internet penetration rate as a country-level institutional factor that influences the IFR. While the IFR benefits companies, the adoption of the IFR may be subjected to other constraints related to the institutional framework surrounding the companies. Accordingly, IFR studies have to consider the fact that there are country-level institutional factors that may hamper the development of the IFR in a particular country despite the advantages offered. Our focus on Internet penetration rate is warranted by the fact that GCC countries, despite sharing many sociocultural and institutional similarities, have various levels of Internet penetration rates (Alqudsi-Ghabra et al., 2011). Although it is possible that companies in countries with heavy penetration of Internet usage are more likely to adopt the IFR as compared to companies in countries with low penetration of Internet usage, prior studies (e.g. Debreceny, et al., 2002) have showed mixed results. As such, there is a need to further investigate the impact of the Internet penetration on the IFR. In line with Debreceny et al., (2002), this study hypothesises that the level of Internet penetration influences the adoption of the IFR. Thus, the hypothesis formulated is as follows:

H_3: There is an association between Internet penetration and the level of IFR.

2.5 Ownership, Internet Penetration, and IFR

The discussion in section 2.3 posits that corporate ownership structure influences the IFR. This view is consistent with the observation that IFR practices are dependent on the quality of the external governance of government and family ownerships. The discussion in section 2.4 indicates that institutional environments such as the Internet penetration rate plays a critical role in the IFR decisions of companies (Debreceny et al., 2002; Pervan, 2006) especially in emerging economies (Ojah & Mokoaleli-Mokoteli, 2012). However, both discussions had focussed mainly on the direct effect of the governance mechanism and Internet penetration. They seemed to have overlooked the fact that there are interdependencies between the organisations and their diverse environments which could affect the effectiveness of the different governance practices (Aguilera, Filatotchev, Gospel, & Jackson, 2008; Bushman & Piotroski, 2006; Leuz et al., 2003). Using data from various countries, Samaha and Dahawy (2010) have noted the joint effect of firm-level and country-level governance on the capital market. Based on this insight, it seems imperative for models to be built by including country-level factors since company-level factors may not be sufficient for explaining the level of voluntary disclosure (Ojah & Mokoaleli-Mokoteli, 2012). In the context of the IFR, Bowrin (2015) has suggested that researchers look at both the country and company-level characteristics when seeking to explain the IFR. Addressing the recommendations of these prior studies (e.g. Bowrin, 2015), we thus endeavour to examine the interrelationship between company-level governance and country-level Internet penetration in influencing the IFR practices of companies in the GCC countries.

In theory, there are two possible ways in which company-level governance and country-level institutional factors interact in determining strategic decisions involving the IFR. From the complementary role perspective, the presence or addition of one mechanism strengthens and this leads to more effective governance in addressing agency problems (Ward, Brown, & Rodriguez, 2009). From the substitutability role perspective, an increase in one mechanism can directly replace a portion of the other mechanism while the overall functionality of the system remains the same (Ward et al., 2009). While the ownership structure can determine the level of voluntary disclosure of financial information through the Internet, home-country environments may still have some determining power over the IFR. Thus, the joint effect of the Internet penetration of the home country and corporate ownership structure on the IFR remains an empirical dilemma. It appears that variations in the countries' Internet penetration can influence the impact of corporate ownership on the IFR and this, inevitably, generates variations in the IFR across companies in different countries.

Likewise, the effect of company-level governance on financial reporting quality can also be subjected to the institutional environment within which companies operate. Studies (Francis, Khurana, & Pereira, 2005; Webb, Cahan, & Sun, 2008; Ariff, Cahan, & Emanuel, 2014) have looked at companies from various countries. Their findings indicated that the interaction between company-level and country-level factors should be considered when analysing the variation in companies' voluntary disclosure (Francis, Khurana, & Pereira, 2005; Webb, Cahan, & Sun, 2008). In their study, Ariff, Cahan and Emanuel (2014) examined the voluntary disclosures of intangibles in eight East Asian countries. Their findings showed that the value relevance of disclosures is conditional on the level of director ownership and the strength of the institutional features of a country. Studies such as Debreceny et al., (2002) added to the understanding of the combined effect of company-level governance and the varying strength of country-level mechanism on strategic voluntary decisions related to corporate reporting. In the context of the Internet penetration, we recognise (as shown in Table 2) that there are large variations in the level of Internet penetration across the GCC regions. Since high quality Internet penetration enhances the demand for IFR disclosures (Debreceny et al., 2002), there are possibilities that variations may exist in the effect of governance on IFR practices across companies in countries with different levels of Internet penetration. In short, while governance affects the IFR practices, the effect may be conditional based on the level of Internet penetration.

Based on the above discussion, we predict that the role of governance on the adoption of the Internet as a tool for information disclosure, is subject to the level of Internet penetration. From a complementary role perspective, favourable Internet penetration mitigates the negative effect of ownership structure on IFR. In our study, a greater level of Internet penetration (if any) will reduce agency costs that arise from the weak monitoring of government/family ownership (if any), thereby improving IFR. From the substitutability perspective, there is no difference in the link between ownership structure and the IFR of companies' location (whether in more favourable or less favourable environment). In the context of our study, the benefits drawn from a greater level of Internet penetration (if any) replaces the weak monitoring role of the government/family ownership (if any), thereby resulting in the indifferent effects on IFR. More specifically, it is expected that if there is any association between government/family ownership and the level of IFR, the association will be stronger (if positive) or weaker (if negative) for companies with a better Internet penetration environment. Thus the hypotheses formulated are as follows:

H_{4a}: The association between government ownership and the level of IFR is moderated by Internet penetration.

H_{4b}: The association between family ownership and the level of IFR is moderated by Internet penetration.

3. Method

3.1 Research Sampling

The samples of this study comprise financial companies extracted from the GCC countries. This is because the GCC countries share a number of specific structural economic features that unite them under a common umbrella. Hence, the reason for previous studies to deal with them as one region (see, Yusof & Bahlous, 2013). As discussed in Section 2.1, our focus on financial companies is warranted by the fact that the financial sector has special relevance for the economy of the GCC countries. The advantage of using a single industry (e.g., financial sector in this study) is that the homogeneous nature within one industry generates a better control of the industry context and market level influence (Pollalis, 2003).

In selecting the samples, we first include all financial companies listed in the GCC countries as the population frame. There was a total of 243 financial companies listed in the stock market of the GCC countries at the end of 2012. However, after checking out their online presence, five were excluded from the initial sample because their websites were inaccessible or under construction. In addition, inadequate data related to corporate governance reduced the initial sample to 152 companies. We have to exclude all the companies from Kuwait due to missing corporate governance information. The exclusion is in line with the findings of Al-Malkawi, Pillai and Bhatti (2014) who noted that companies listed in the Kuwait stock market had exhibited the worst adherence to corporate governance mechanisms. The final sample thus comprised 21 companies from Bahrain, 26 companies from Oman, 15 companies from Qatar, 43 companies from Saudi Arabia, and 47 companies from the United Arab Emirates (n = 152).

A secondary data method was employed to gather relevant data for the year 2012. This is because 2012's annual reports served as the latest source of information available, at the time this study was initially conducted. Data for the dependent variable were manually collected from the companies' websites while data for the independent variables were manually collected from the annual reports of the companies. To gather data of the dependent variable from the website, the web pages of the companies were inspected and examined in detail prior to obtaining information. Since company web pages are dynamic in nature, the objective was thus to collect data within a specific time period. Following the strategy employed by previous studies (e.g., Al-Htaybat, 2011; Ali-Khan & Ismail, 2011), inspections of the companies' websites were also done twice. The first inspection was in November and December 2012 and the second inspection was in March 2013. The second inspection was aimed at correcting any error before the final score was computed as well as to enhance the validity and reliability of the current checklist.

3.2 The Research Models and Variables

In relation to the hypotheses set above, the framework and the variables of this study are depicted in Appendix A and B respectively. Two multivariate models were estimated for this study. In the models, the IFR is the level of Internet Financial Reporting, GOVOWN is Government ownership, FAMOWN is Family ownership, INTNET is Internet penetration, FSIZE is Firm size, ROA is Profitability, LEV is Leverage, BIG4 is Auditing by Big 4 accounting companies, GOVOWN*INTNET is the moderating variable for government ownership and Internet penetration, and FAMOWN*INTNET is the moderating variable for family ownership and Internet penetration. The equation is as below.

$$\begin{aligned} IFR = {} & \alpha + \beta_1\, GOVOWN + \beta_2\, FAMOWN + \beta_3\, INTNET + \\ & \beta_4\, FSIZE + \beta_5\, ROA + \beta_6\, LEV + \beta_7\, BIG4 + \varepsilon \end{aligned} \qquad (1)$$

In Model 1, the coefficients of β_1, β_2 and β_3, represent the association between GOVOWN, FAMOWN and INTNET with IFR. It is used to test H_1, H_2, and H_3 respectively and to identify whether government ownership, family ownership and Internet penetration affect Internet Financial Reporting.

$$IFR = a + \beta_1 GOVOWN + \beta_2 FAMOWN + \beta_3 INTNET + \beta_4 FSIZE + \beta_5 ROA + \beta_6 LEV + \beta_7 BIG4 + \beta_8 GOVOWN*INTNET + \beta_9 FAMOWN*INTNET + \varepsilon \quad (2)$$

Model 2, which is the fully specified model is used to test H_4. In the equation of Model 2, β_8 and β_9 test for the incremental effect of INTNET on the association between GOVOWN and IFR, and FAMOWN and IFR, respectively.

IFR, which is our dependent variable, is the level of IFR. An index was developed in order to measure the extent of IFR in the websites of the 152 companies. The index was derived based on the attributes identified in previous works (e.g. Xiao et al., 2004; Kelton & Yang, 2008; Arussi, Selamat, & Hanefah, 2009; Desoky 2009; Aly, Simon, & Hussainey, 2010; Al-Htaybat, 2011). The disclosure index in this study, which is closely similar to the IFR index used by Desoky (2009), consists of the IFR content and the IFR presentation format. The IFR content refers to the type of published financial information or the availability of company financial information displayed in the company's website (Lybaert, 2002; Xiao et al., 2004) while the IFR presentation format concerns the way in which the content and the navigation facilities are presented to the user (Bonsón-Ponte, Escobar-Rodriguez, & Flores-Munoz, 2008). As shown in Appendix C, our index incorporates a total of 35 items. Unweighted checklists were constructed to measure the level of the IFR of the financial companies listed in the GCC countries. This procedure is consistent with prior studies (Abdelsalam et al., 2007; Kelton & Yang, 2008) which also supported the unweighted scoring approach. A score of '1' is assigned for the presence and '0' for the absence of each item of content. The total score for each company is measured as the percentage of the actual score awarded to the maximum possible score, which is 35. Following Bonsón and Escobar (2006), the total score is based on a simple aggregation such that the value of the index utilised is the result of summing the scores assigned to each category of information.

We used two measures of ownership structure, GOVOWN and FAMOWN, by referring to the percentage of ordinary shares held by substantial shareholders (government and family). The GCC stock exchanges require the disclosure of ownership for each individual, corporation or government that owns 5 per cent or more (Al-Shammari, Brown, & Tarca, 2008). Following the approach used by Chahine (2007), AbuGhazaleh et al. (2012) and Al-Musalli and Ku Ismail (2012), we likewise employed the aggregate proportion of ordinary shares (5 per cent or more) owned by substantial shareholders of these groups, as disclosed in the annual reports at the end of 2012.

The INTNET or Internet penetration, is the percentage of a population using the Internet and this is derived from the Internet World Statistics in 2012 (details are shown in Table 2). Following Debreceny et al. (2002), this study uses the quintile ranks of each country as the measure for Internet penetration (INTNET). This is done by giving a value of 1 to the lowest quintile and 5 to the highest quintile of national Internet penetration. In this regard, the Qatari companies were ranked the highest for Internet penetration and so assigned a score of 5. This is followed by the Bahraini companies, with a score of 4, the UAE companies with a score of 3, the Omani companies with a score of 2, and the Saudi Arabian companies with a score of 1. The GOVOWN*INTNET and the FAMOWN*INTNET were the interaction variables, between government ownership and Internet penetration, and family ownership and Internet penetration, respectively. The interaction variables were used to identify the moderating effect of the Internet penetration. We applied the moderated multiple regression approach because it is the most preferred technique in testing the moderating effect due to issues regarding subgroup effect techniques such as unequal sample sizes and error variances across groups (Aguinis & Gottfredson, 2010).

Control for other factors that may affect the IFR was done by incorporating the companies' characteristics in the regression model. We control firm size (FSIZE), profitability (ROA), leverage (LEV), and auditor (BIG4). FSIZE is the natural logarithm of the book value of the total assets, a measurement that is consistent with prior studies such as Abdelsalam et al. (2007), and Alanezi (2009). We expect a positive relationship between FSIZE and IFR, following findings of previous studies such as Alali and Romero (2012). The ROA or return on assets was calculated by dividing the net profit or loss by total assets. This measurement was used previously by many studies (e.g., Xiao et al., 2004; Abdelsalam et al., 2007; Alanezi, 2009) and a positive coefficient is expected. The LEV is the ratio of the total debt to total assets, developed in line with prior studies (e.g., Chahine, 2007). Due to inconsistencies in the findings of past studies (e.g. Aly et al., 2010; Alali & Romero, 2012), there is no direction set on the association between LEV and IFR. The BIG4 was measured by using a dummy variable of one (1) if the company is audited by the BIG4 audit companies and zero (0) if otherwise. We followed the approach of previous studies such as Aly et al. (2010) and AbuGhazaleh et al. (2012). Empirically, the findings of prior studies (e.g., Agboola & Salawu, 2012; Momany & Pillai, 2013) looking at the relationship between audit firm and IFR practices had been mixed. Thus, no direction is set on the association between the BIG4 and the IFR.

4. Results and Discussion

4.1. Descriptive Statistics

As illustrated in Table 1, the mean level of the IFR is 0.58 with a median of 0.60. On average, a company discloses 58 per cent of the 35 items included in the index. The highest and lowest scores of the IFR was 91 per cent and 9 per cent respectively. The wide range of 82 per cent in the level of IFR indicates a substantial variation in the IFR across the sample companies. None of the companies disclosed 100 per cent of the 35 index items that were applicable to them. This therefore highlighted the opportunity for further improvement to the IFR practices.

Focussing on the ownership structure, Table 1 suggests that the listed financial companies of the GCC countries are highly concentrated. Focussing on government ownership, the statistics in Table 1 illustrates the minimum value (0 per cent) and maximum value (80 per cent) of the government ownership (GOVOWN) with an average value of 8.2 per

Table 1: Descriptive Statistics of Variables

Variables	Min.	Max.	Mean	Median	Range	Std. Dev
IFR	0.090	0.910	0.582	0.600	0.820	0.198
GOVOWN	0.000	0.800	0.082	0.000	0.800	0.161
FAMOWN	0.000	0.790	0.120	0.050	0.790	0.170
FSIZE	6.880	11.000	8.863	8.510	4.120	0.977
LEV	0.030	1.000	0.625	0.672	0.970	0.237
ROA	-0.100	0.100	0.025	0.021	0.200	0.033

Note: IFR = the level of IFR, GOVOWN = Government ownership, FAMOWN = Family ownership, FSIZE = Firm size, LEV = Leverage, and ROA = Profitability.

cent and a median value of 0 per cent. In looking at family ownership (FAMOWN), the minimum and maximum values were 0 per cent and 79 per cent, respectively. With respect to the control variables, Table 1 presents an analysis of firm size (FSIZE) as measured by a log of the companies' total assets. The mean and median were \$8.86 and \$8.51, respectively, with a minimum value of \$6.88 and a maximum value of \$11. As for leverage (LEV), the mean and median values were 62.5 per cent and 67.2 per cent, respectively. With respect to profitability (ROA), the sample has an average profitability level of 2.5 per cent, with a minimum value of -10 per cent, a maximum value of 10 per cent, and a median value of 2.1 per cent. The negative sign of the minimum value (-10 per cent) of the ROA indicates that some of the sample companies had experienced a loss during the investigation year.

Table 2 summarises the Internet penetration and the IFR among the GCC countries. As illustrated, Qatar has the highest Internet penetration, at 0.853 whereas Saudi Arabia has the lowest Internet penetration, at 0.490. Comparing this to the IFR for companies in the GCC countries, the highest median for the IFR was shown for Qatar, with a score of 0.770 whereas Saudi Arabia was shown to have the lowest median of the IFR, with a score of 0.540. The results indicate that there were variations in the level of Internet access among the GCC countries. The results also indicate that the IFR level and the Internet penetration level of these countries varied. It seems apparent that despite their sociocultural and institutional similarities, the GCC countries varied in terms of the sophistication of the environment in which their companies operated. The results supported the findings of Debreceny et al. (2002) who

Table 2: Descriptive Statistics of Internet Penetration and IFR among the GCC Countries

Country	Frequency	Internet Penetration	IFR
Bahrain	21	0.770	0.690
Oman	26	0.688	0.570
Qatar	15	0.853	0.770
KSA	43	0.490	0.540
UAE	47	0.709	0.540
Total	152	0.670	0.600

Note: Internet World Statistics (in December, 2012) at www.Internetworld stats.com mentioned that Internet penetration is an environmental variable that creates demand for the IFR. This also explains the variations that exist among corporate practices involving the IFR.

4.2. Univariate Analysis

Pearson's correlation analysis was performed in order to check the correlation between the variables (untabulated for brevity). The results highlighted the significant positive correlation between the dependent variable (IFR) and government ownership (GOVOWN), at the 5 per cent level. The results also indicated a significant negative correlation between the IFR and family ownership (FAMOWN), at the 1 per cent level. The results further showed that there was a significant positive correlation between the IFR and the Internet penetration (INTNET), at the 1 per cent level. Looking at the correlation between the dependent variable and the control variables, the results further illustrated that firm size (FSIZE) and profitability (ROA) have a significant positive correlation with the IFR, at the 1 per cent and 5 per cent levels, respectively. A negative significant correlation was noted between leverage (LEV) and the IFR, at the 5 per cent level. In contrast, the BIG4 showed no correlation with the IFR disclosure. Pearson's correlation analysis was also performed to investigate whether multicollinearity is a problem in our analysis. The results suggested that multicollinearity was not a problem because none of the level of correlation exceeded 0.90 (Hair, Black, Babin, & Anderson, 2010).

4.3. Regression Analysis Results

The main regression results are presented in Table 3. Columns 3 and 4 display the results based on the specification in Model 1 and columns 5 and 6 display the results based on the specification in Model 2. For Model 1, the adjusted R^2 is 0.463 and the F-ratio is 19.584. There was a significance of $p<0.001$. For Model 2, the adjusted R^2 is 0.494, indicating that 49 per cent of the variation in the level of IFR disclosures of the sampled companies is explained by the explanatory variables of this model. The F-ratio of the first model is 15.381, with a significance of $p<0.001$. These results indicate that the overall model is well fitted.

Columns 3 and 4 in Table 3 present the results for the variables related to ownership: governmental ownership (GOVOWN) and family ownership (FAMOWN). Both were used to analyse the individual

Table 3: Regression Analysis Results

Variables	Expected Sign	Model 1		Model 2	
		Coefficients	*t*-stat	Coefficients	*t*-stat
Constant			-5.386		-4.203
GOVOWN	+/–	-0.153**	-1.824	-0.107	-1.545
FAMOWN	–	-0.271***	-3.775	-0.226**	-3.500
INTNET	+	0.405***	3.769	0.231**	3.140
FSIZE	+	0.122***	7.728	0.570***	6.881
ROA	+	-0.768**	-2.034	-0.137**	-2.175
LEV	+/–	-0.031	-0.511	-0.029	-0.400
BIG4	+/–	0.039	0.579	0.040	0.650
GOVOWN*INTNET	+/–			-0.075	-1.177
FAMOWN*INTNET	+/–			-0.055	-0.746
Adjusted R^2		0.463		0.494	
F Change		19.584***		15.381***	

Note: ****p*<0.01, ***p*<0.05, **p*<0.10. IFR = the level of IFR, GOVOWN = Government ownership, FAMOWN = Family ownership, INTNET = Internet penetration, FSIZE = Firm size, LEV = Leverage, and ROA = Profitability, Big4 = Audited by Big 4.

effect of the corporate governance mechanisms on the IFR of the GCC countries. Table 3 also presents the results for the individual effect of the Internet penetration (INTNET). For government ownership, the statistical results revealed that government ownership (GOVOWN) has a negative and significant relationship with the IFR. This implies that listed financial companies in the GCC countries with higher proportions of government ownership disclosed a lower amount of information on their websites. This negative association contradicts the positive correlation shown in the Pearson's correlation analysis above. Nevertheless, Pearson only tests correlations between two variables, without considering other variables that may explain the dependent variable. Regression analysis, on the other hand, provides a more accurate view of the association between government ownership and the IFR. The empirical results of GOVOWN supported the capital need theory. The results were also consistent with the findings of Xiao et al. (2004) which looked at Chinese companies and Desoky

(2009) which looked at Egyptian companies. Comparing our current findings to those of Momany and Pillai (2013) who found no significant association between government ownership and the IFR in the United Arab Emirates, we believe that our findings have provided a more comprehensive view about the role of government ownership in the GCC countries. Our claims are based on our samples that were derived from listed financial companies located in the countries of the GCC region (except for Kuwait). We believe we have addressed the limitation noted in Momany and Pillai (2013) by using a bigger sample size and a more comprehensive index to measure the IFR. Accordingly, the first hypothesis which state that there is a relationship between government ownership of financial companies in the GCC and IFR is supported. The results thus imply that companies with higher government ownership suffer from low level IFR.

From the family ownership perspective, the regression analysis results displayed a negative association between FAMOWN and IFR. These results indicated that financial companies listed in the GCC countries with a large percentage of shares held by family ownership, were more likely to have a lower amount of information on their websites. The results are in line with the findings of previous empirical studies (e.g. Ali et al., 2007; Chau & Gray, 2010). Looking at Kuwaiti companies, Alanezi (2009) did not find any association between family ownership on the IFR. In contrast, our study had shown that companies with higher family ownership suffered from low level IFR. We believe that our findings portray a picture demonstrating the significant effect of family ownership in GCC countries. It appears that the effect of family ownership on the IFR is substitutive; family ownership decreases the firm's need for additional monitoring through disclosure transparency. In line with the agency theory, there is no need for the burden of potential costs gained from maintaining an investor relation's page on the Internet, to disclose more information. This is because family shareholders have superior access to corporate information (Leuz & Verrecchia, 2000). Thus, the need for a corporate disclosure tool (e.g. IFR disclosure) to mitigate agency costs is not necessary because the owners themselves have better access to internal information. In this regard, Hypothesis 2 which assumes a negative relationship between family ownership and IFR disclosure is supported.

Looking at Internet penetration, the results showed that Internet penetration (INTNET) is a significant positive indicator for IFR disclosure. It was observed that the IFR was higher for financial companies with greater Internet penetration. These results are consistent with the view that accounting systems, including financial reporting practices, differ from country to country due to the relative influence of their environmental factors (Cooke & Wallace, 1990). The positive relationship between INTNET and IFR disclosure is thus consistent with the diffusion of innovation theory which suggests that companies may accept new technologies (i.e. Internet) due to fad and fashion perspectives. In this regard, it is assumed that companies in a group imitate other companies in the same group or outside the group in order to reduce uncertainty and to appear legitimate (Abrahamson, 1991; Xiao et al., 2004). Due to the practice of organisational imitations, it can be noted that financial companies listed in GCC countries with higher Internet penetration were more likely to adopt the Internet as a tool for disseminating timely information. In this regard, Hypothesis 3 which assumes a positive relationship between Internet penetration and IFR disclosure is supported.

Columns 5 and 6 of Table 3 show the results of the fully specified model. The results related to GOVOWN, FAMOWN and INTNET appeared slightly different once we allow for the coefficients to vary with the country's Internet penetration, as noted in Model 2. For government ownership, we observe no statistical evidence to indicate that GOVOWN is associated with IFR, unlike the significant results shown by Model 1. For family ownership, the results in columns 5 and 6 display a significant and negative association between FAMOWN and IFR, similar to Model 1. For Internet penetration, the results were also similar to Model 1 because the coefficient for INTNET is significant and positive. The interaction variables, GOVOWN*INTNET and FAMOWN*INTNET were used to examine the moderating effect of Internet penetration on governance mechanisms.

The results relating to the moderating effect of Internet penetration for both government ownership and family ownership, nonetheless, were not in line with the expectations set in our hypothesis. For government ownership, we observe no statistical evidence to indicate that INTNET moderated the effect of GOVOWN on IFR. Logically, because GOVOWN itself is not significant in Model 2, the coefficient of GOVOWN*INTNET is not expected to be of any use. With regards to family ownership, we observe no statistical evidence to support the moderating effect of INTNET on the association between FAMOWN and IFR. Therefore, family ownership is associated with lower IFR practices by companies, regardless of the Internet penetration of the countries. Accordingly, Hypotheses 4a and 4b were not supported. We offer several possible explanations for these insignificant results. We infer that the insignificant findings were related to the possibility that the weaknesses of ownership structure, sourced from government and family, prevailed over the benefit of Internet penetration in influencing the IFR. While Internet penetration facilitated the IFR, there were other institutional factors that could have greater influence on governance decisions involving the IFR. These factors could be related to technological factors such as cyber security risks in a particular country. We address this issue as the limitation of our study and we offer suggestions for future research in the conclusion section.

With respect to control variables, the results in Table 3 shows that the coefficient of FSIZE is positive and significant (t = 6.881, p = 0.000). The positive effect of firm size on IFR suggests that the larger companies were more likely to utilise the Internet for information disclosure. The result involving FSIZE is consistent with many empirical studies (e.g. Evans, Henderson, & Trinkle, 2011; Puspitaningrum & Atmini, 2012). The coefficient of the ROA is shown to be negative and significant (t = -2.175, p = 0.031). Contrary to our prediction, the result involving the ROA may be linked to the possibility that higher profitability could drive rival companies to enter the same market (Álvarez, Sánchez, & Domínguez, 2008). Consequently, companies with high profitability may disclose lesser information via the Internet so as to secure their competitiveness, especially within the context of emerging markets such as the GCC countries. The coefficients for LEV and BIG4 were not statistically significant. These results are in line with empirical studies (e.g. Aly et al., 2010; Alali & Romero, 2012) which found an insignificant association between the proxies of leverage and auditor type and IFR disclosures.

Additional tests were conducted in order to check the robustness of the main results. Firstly, we employed dichotomous variables for GOVOWN and FAMOWN. The strategy was applied because the results derived from examining corporate governance characteristics on accounting proxies are sensitive to how these characteristics are measured (Carcello, Hermanson, & Ye, 2011). Using alternate measures can help in checking the robustness of the results (Haniffa & Hudaib, 2006). Secondly, we performed a separate analysis on two subsamples, the high and low Internet penetration. The results (untabulated for brevity) of these robustness tests indicate that our main results were robust to alternative specifications and measures. Consequently, the consistency in the results of the robustness test strengthen the validity of the findings and the recommendations drawn from them.

5. Conclusion, Implication and Limitation

This study has examined whether company-level governance and country-level institutional environment arising from Internet penetration, can jointly interact and be used to explain the variations in companies' IFR disclosure. An analysis was performed on a sample of 152 financial companies that were publicly listed in the stock market of the GCC countries in 2012. The focus on the GCC countries was motivated by the unique institutional settings of countries in the region, among which is the prevalent dilemma related to highly concentrated ownership by government and families. While the pressure to remain resilient and to improve the businesses and economies in the region is a motivating factor for disseminating information through the Internet, the role of governance on the IFR remains an empirical issue.

The results of this study documented a significant negative association between government and family ownership with IFR disclosure. The results pertaining to government ownership were consistent with the prediction of the capital need theory. In comparison, the results illustrating family ownership was in line with the agency theory. These findings imply that political ties and family involvement significantly influence companies in the GCC countries. More specifically, the significant involvement of government and families in the structure of corporate ownership may weaken the monitoring role of the board of directors in controlling and addressing various agency problems. In terms of policy indication, these findings had indicated that there is an urgent need for reforms to be established in the ownership structure of the financial sector in the GCC countries. Regulators should consider strengthening enforcing the legal protection of shareholders especially minority shareholders` interests.

The results of this study have also suggested that Internet penetration is a factor that influences the IFR. This outcome is consistent with the prediction of the diffusion of innovation theory. Our finding clarify the importance of access to the Internet among the GCC countries. This should motivate the GCC listed companies to disclose more information on their websites as the demand for such information increases. In order to maximise the potential economic developmental benefits of the Internet, GCC governments should be more responsive towards embracing changes; it should also consider adapting and investing in this media. Information and communication technology in the GCC must be promoted so as to facilitate the people's ability to connect online thereby, enhancing their global awareness. The lack of responsiveness in improving information and communication technology in the GCC countries may result in poor IFR practices. This may cause losses to domestic shareholders as well as foreign shareholders.

Nevertheless, our insignificant results illustrating the effect of Internet penetration on the association between governance and IFR may indicate that the incentives arising from company-level governance were more relevant in determining the quality of the IFR. Regardless of the level of a country's Internet penetration, the governance that is sourced from the highly concentrated ownership of government and families clearly influences IFR. Internet penetration also facilitates the use of the Internet in enabling a greater dissemination of information but it is not the only factor that can influence or overrule the incentive of the controlling owners on IFR decisions. In terms of implications to the management, there is a need for companies to consider other institutional factors that could have greater influence on such voluntary decisions. As highlighted by previous studies such as Xiao et al. (2004) and Jo and Jung (2005), financial disclosure and accounting information practices are subjected to a variety of environmental and technological factors such as cultural, political, economic and new technology developments like digital communication. Our findings also prompted academic implications by suggesting that the IFR is an important mechanism for corporate disclosure and transparency. As such, the accounting curriculum should be geared towards an assortment of issues that are associated with the IFR.

Accordingly, the insignificant findings derived from our fourth hypothesis may be related to the fact that we only employed Internet penetration as a country-level factor. This is because we believed that most other institutional factors of the GCC countries were similar. Future studies may need to examine other institutional factors of the GCC countries that could have more significant influence towards promoting IFR. Factors such as culture would be relevant for understanding corporate disclosure behaviour. Alternatively, technological factors such as cyber security risks is also pertinent.

Despite using the 2012 data, our findings have implications for the current scenario which encompass disclosure practices and corporate governance environment of the emerging economies, particularly the

GCC countries. First, the pressure for companies to be more transparent through the IFR remains at the forefront, in the quest for investment opportunities among companies. As the GCC countries continue to struggle with economic diversification plans to remain resilient (Callen, Cherif, Hasanov, Hegazy, & Khandelwal, 2014), there is a greater need to break through geographical borders in business operations and investment. The strategy to attract more funds from international investment communities relies on the ability of companies to showcase their future potentials through greater transparency and disclosure. Second, the role of good corporate governance is more important now in attracting foreign institutional investors to the GCC equity markets. Amico et al., (2016) had observed that improving the governance of businesses, particularly family-owned firms, the majority of which were non-oil economies in the Middle East, is a top concern for the region. Third, despite the fact that awareness for greater transparency and good corporate governance has developed gradually in recent years, its full adoption in the GCC countries is still minimal. This is attributed to the embedded conservativeness and protectionist investment culture of the region. Such practices also manifest a weak disclosure of information practices. This unwillingness to relinquish ownership and control by large blockholders may be disadvantageous to the economy in the long run. It is a challenge to separate ownership from management among the companies in the GCC countries. Since investors are ready to pay the premium for good governance in the emerging markets, there is a need for the GCC countries to strike an appropriate balance between their national approaches with internationally-recognised governance standards (Amico et al., 2016). Our findings, therefore, reinforce the importance of improving corporate governance environment which can enhance the disclosure practices of companies in the GCC countries.

Other than the limitations related to the proxy for country-level institutional factors, this study is also subjected to several other limitations. Firstly, the samples were drawn from only one industry and for one financial year. We had justified our sample selection by the fact that financial companies have significant roles to play in the economies of the GCC countries. Nevertheless, future research may consider a wider range of companies as samples or to extend this study to other emerging markets. Also, using data from various years would provide a more in-depth understanding of the IFR trend and the possibility of providing more robust results. Secondly, results obtained from this study are confined to the disclosure index used. Future research could consider extending the index to include the timeliness of the IFR (e.g. latest updates). Thirdly, this study had relied on government and family ownership to proxy for corporate governance mechanisms as they were relevant in the context of the GCC countries. Future research could use other classifications such as managerial ownership, domestic institutional ownership, and foreign institutional ownership. Another valuable approach is to look at the overall corporate governance mechanism by using a composite index of corporate governance especially in the setting where the roles of internal and external corporate governance are equally important. Finally, the analysis of this study was based on a quantitative analysis of financial and IFR data and the views of companies involved were not expedited. Therefore, it may be reasonable to conduct interviews with companies to determine the logic and perception of the managers in dealing with the IFR practices.

References

Abdelsalam, O.H., Bryant, S.M., & Street, D.L. (2007). An examination of comprehensiveness of corporate Internet reporting provided by London listed companies. *Journal of International Accounting Research, 6*(2), 1-33. http://dx.doi.org/10.2308/jiar.2007.6.2.1

Abrahamson, E. (1991). Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review, 16*(3), 586-612. http://dx.doi.org/10.5465/amr.1991.4279484

AbuGhazaleh, N.M., Qasim, A., & Roberts, C. (2012). The determinants of web-based investor relations activities by companies operating in emerging economies: the case of Jordan. *Journal of Applied Business Research, 28*(2), 209-226. http://dx.doi.org/10.19030/jabr.v28i2.6842

Agboola, A.A., & Salawu, M.K. (2012). The determinants of internet financial reporting: Empirical evidence from Nigeria. *Research Journal of Finance and Accounting, 3*(11), 95-106.

Aguilera, R.V., Filatotchev, I., Gospel, H., & Jackson, G. (2008). An organizational approach to comparative corporate governance: Costs, contingencies, and complementarities. *Organization Science, 19*(3), 475-492. http://dx.doi.org/10.1287/orsc.1070.0322

Aguinis, H., & Gottfredson, R.K. (2010). Best-practice recommendations for estimating interaction effects using moderated multiple regression. *Journal of Organizational Behavior, 31*(6), 776-786. http://dx.doi.org/10.1002/job.686

Ahmed H.A., Bruce M.B., & Theresa M.D. (2017). The determinants of corporate internet reporting in Egypt: An exploratory analysis, *Journal of Accounting in Emerging Economies, 7*(1), 35-60. http://dx.doi.org/10.1108/jaee-04-2015-0024

Alali, F., & Romero, S. (2012). The use of the Internet for corporate reporting in the Mercosur (Southern common market): The Argentina case. *Advances in Accounting, 28*(1), 157-167. http://dx.doi.org/10.1016/j.adiac.2012.03.009

Alanezi, F.S. (2009). Factors influencing Kuwaiti companies' Internet financial reporting. *Journal of Economic and Administrative Sciences, 25*(2), 44-78. http://dx.doi.org/10.1108/10264116200900007

Al-Hassan, A., Oulidi, N., & Khamis, M. (2010). *The GCC banking sector: Topography and analysis* (IMF Working Papers, WP/10/87). Washington, DC: International Monetary Fund.

Al-Htaybat, K. (2011). Corporate online reporting in 2010: A case study in Jordan. *Journal of Financial Reporting and Accounting, 9*(1), 5-26. http://dx.doi.org/10.1108/19852511111139778

Ali, A., Chen, T.Y., & Radhakrishnan, S. (2007). Corporate disclosures by family firms. *Journal of Accounting and Economics, 44*(1-2), 238-286. http://dx.doi.org/10.1016/j.jacceco.2007.01.006

Ali-Khan, M.N.A., & Ismail, N.A. (2011). The level of Internet financial reporting of Malaysian companies. *Asian Journal of Accounting and Governance, 2*, 27-39. http://dx.doi.org/10.17576/ajag-2011-2-6539

Ali-Khan, M.N.A., Ismail, N.A., & Zakuan, N. (2013). Benefits of internet financial reporting in a developing country: Evidence from Malaysia. *African Journal of Business Management, 7*(9), 719-726.

Al-Khouri, R. (2012). Government ownership, competition, and the risk-taking attitude of the GCC banking system. *Advances in Financial Economics, 15*, 173-193. http://dx.doi.org/10.1108/s1569-3732(2012)0000015009

Al-Malkawi, H.A.N., Pillai, R., & Bhatti, M.I. (2014). Corporate governance practices in emerging markets: The case of GCC countries. *Economic Modelling, 38*, 133-141. http://dx.doi.org/10.1016/j.econmod.2013.12.019

Al-Musalli, M.A.K., & Ku Ismail K.N.I. (2012). Corporate governance, bank specific characteristics, banking industry characteristics, and intellectual capital (IC) performance of banks in Arab Gulf Cooperation Council (GCC) countries. *Asian Academy of Management Journal of Accounting and Finance, 8*(1), 115-135.

Al-Obaidan, A.M. (2008). Optimal bank size: The case of the Gulf Cooperation Council countries. *European Journal of Economics, Finance and Administrative Sciences, 11*(11), 31–43.

Alqudsi-ghabra, T.M., Al-Bannai, T., & Al-Bahrani, M. (2011). The Internet in the Arab Gulf Cooperation Council (AGCC): Vehicle of change. *International Journal of Internet Science, 6*(1), 44-67.

Al-Shammari, B. (2007). Determinants of Internet financial reporting by listed companies on the Kuwait stock exchange. *Journal of International Business and Economics, 7*(1), 162-178.

Al-Shammari, B. (2013). An investigation of voluntary disclosure by Kuwaiti Shariah-compliant companies. *Journal of Economic and Administrative Sciences, 29*(1), 21-41. http://dx.doi.org/10.1108/10264111311319213

Al-Shammari, B., Brown, P., & Tarca, A. (2008). An investigation of compliance with International accounting standards by listed companies in the Gulf Co-Operation Council member states. *The International Journal of Accounting, 43*(4), 425-447. http://dx.doi.org/10.1016/j.intacc.2008.09.003

Álvarez, I.G., Sánchez, I.M.G., & Domínguez, L.R. (2008). Voluntary and compulsory information disclosed online: The effect of industry concentration and other explanatory factors. *Online Information Review, 32*(5), 596–622. http://dx.doi.org/10.1108/14684520810913990

Aly, D., Simon, J., & Hussainey, K. (2010). Determinants of corporate Internet reporting: evidence from Egypt. *Managerial Auditing Journal, 25*(2), 182–202. http://dx.doi.org/10.1108/02686901011008972

Amico, A., Jafar, B., Singhvi, T., Smallman, K., Abdelkhader, G., & Dunlop. I. (2016). *Corporate Governance for Competitiveness in the Middle East and North Africa* (Report for the World Economic Forum's MENA Regional Business Council). North Africa: Crescent Enterprises Limited.

Andrikopoulos, A., Merika, A.A., Triantafyllou, A., & Merikas, A.G. (2013). Internet disclosure and corporate performance: A case study of the international shipping industry. *Transportation Research Part A: Policy and Practice, 47*, 141-152. http://dx.doi.org/10.1016/j.tra.2012.10.016

Ariff, A.M., Cahan, S., & Emanuel, D. (2014). Institutional environment, ownership, and disclosure of intangibles: Evidence from East Asia. *Journal of International Accounting Research, 13*(1), 33-59. http://dx.doi.org/10.2308/jiar-50655

Arussi, A.S., Selamat, M.H., & Hanefah, M.M. (2009). Determinants of financial and environmental disclosures through the Internet by Malaysian companies. *Asian Review of Accounting, 17*(1), 59-76. http://dx.doi.org/10.1108/13217340910956513

Ashbaugh, H., Johnstone, K.M., & Warfield, T.D. (1999). Corporate reporting on the Internet. *Accounting Horizons, 13*(3), 241-257. http://dx.doi.org/10.2308/acch.1999.13.3.241

Ball, R. (2006). International Financial Reporting Standards (IFRS): Pros and cons for investors. *Accounting and Business Research, 36*(sup1), 5-27.

Bartulović, M., & Pervan, I. (2012). Comparative analysis of voluntary internet financial reporting for selected CEE countries. *Recent Researches in Applied Economics and Management, 1*(1), 296-301.

Basuony, M.A., & Mohamed, E.K.A. (2014). Determinants of Internet financial disclosure in GCC countries. *Asian Journal of Finance and Accounting, 6*(1), 70-89. http://dx.doi.org/10.5296/ajfa.v6i1.5085

Baydoun, N., Maguire, W., Ryan, N., & Willett, R. (2013). Corporate governance in five Arabian Gulf countries. *Managerial Auditing Journal, 28*(1), 7-22. http://dx.doi.org/10.1108/02686901311282470

Beattie, V., & Pratt, K. (2003). Issues concerning web-based business reporting: An analysis of the views of interested parties. *The British Accounting Review, 35*(2), 155–187. http://dx.doi.org/10.1016/s0890-8389(03)00016-7

Bollen, L., Hassink, H., & Bozic, G. (2006). Measuring and explaining the quality of Internet investor relations activities: A multinational empirical analysis. *International Journal of Accounting Information Systems, 7*(4), 273-298. http://dx.doi.org/10.1016/j.accinf.2006.04.005

Bonsón, E., & Escobar, T. (2006). Digital reporting in Eastern Europe: An empirical study. *International Journal of Accounting Information Systems, 7*(4), 299-318. http://dx.doi.org/10.1016/j.accinf.2006.09.001

Bonsón-Ponte, E., Escobar-Rodriguez, T., & Flores-Munoz, F. (2008). Navigation quality as a key value for the webpage of a financial entity. *Online Information Review, 32*(5), 623-634. http://dx.doi.org/10.1108/14684520810914007

Botosan, C.A., & Plumlee, M.A. (2002). A re-examination of disclosure level and the expected cost of equity capital. *Journal of Accounting Research, 40*(1), 21-40. http://dx.doi.org/10.1111/1475-679X.00037

Botti, L., Boubaker, S., Hamrouni, A., & Solonandrasana, B. (2014). Corporate governance efficiency and internet financial reporting quality. *Review of Accounting and Finance, 13*(1), 43–64. http://dx.doi.org/10.1108/raf-11-2012-0117

Bowrin, A.R. (2015). Comprehensiveness of Internet reporting by Caribbean companies. *Journal of Accounting in Emerging Economies, 5*(1), 2-34. http://dx.doi.org/10.1108/jaee-08-2011-0028

Bushman, R.M., & Piotroski, J.D. (2006). Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics, 42*(1-2), 107-148. http://dx.doi.org/10.1016/j.jacceco.2005.10.005

Bussin, M. (2012). *The Remuneration handbook for Africa*. Radburg: Knowres Publishing.

Callen, T., Cherif, R., Hasanov, F., Hegazy, A., & Khandelwal, P. (2014). *Economic diversification in the GCC: Past, present, and future* (IMF Discussion Note). Dubai: Inter-national Monetary Fund.

Carcello, J.V., Hermanson, D.R., & Ye, Z. (2011). Corporate governance research in accounting and auditing: Insights, practice implications, and future research directions. *Auditing: A Journal of Practice and Theory, 30*(3), 1-31. http://dx.doi.org/10.2308/ajpt-10112

Chahine, S. (2007). Activity-based diversification, corporate governance, and the market valuation of commercial banks in the Gulf Commercial Council. *Journal of Management and Governance, 11*(4), 353-382. http://dx.doi.org/10.1007/s10997-007-9034-5

Chau, G.K., & Gray, S.J. (2002). Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *The International Journal of Accounting, 37*(2), 247-265. http://dx.doi.org/10.1016/S0020-7063(02)00153-X

Chau, G.K., & Gray, S.J. (2010). Family ownership, board independence and voluntary disclosure: evidence from Hong Kong. *Journal of International*

Accounting, Auditing and Taxation, 19(2), 93–109. http://dx.doi.org/10.1016/j.intaccaudtax.2010.07.002

Chircu, A.M., & Kauffman, R.J. (2000). Limits to value in electronic commerce-related IT investments. *Journal of Management Information Systems, 17*(2), 59–80. http://dx.doi.org/10.1080/07421222.2000.11045645

Cooke, T.E, & Wallace, R.S.O. (1990). Financial disclosure regulation and its environment: A review and further analysis. *Journal of Accounting and Public Policy, 9*, 79-110. http://dx.doi.org/10.1016/0278-4254(90)90013-p

Cormier, D., Ledoux, M.J., & Magnan, M. (2012). The moderation effect of voluntary disclosure on the relation between earnings quality and information asymmetry: Some Canadian evidence. *International Journal of Accounting, Auditing and Performance Evaluation, 8*(2), 157-183. http://dx.doi.org/10.1504/ijaape.2012.046706

Craven, B.M., & Marston, C.L. (1999). Financial reporting on the Internet by leading UK companies. *The European Accounting Review, 8*(2), 321-333. http://dx.doi.org/10.1080/096381899336069

Debreceny, R., Gray, G.L., & Rahman, A. (2002). The determinants of Internet financial reporting. *Journal of Accounting and Public Policy, 21*(4-5), 371-394. http://dx.doi.org/10.1016/S0278-4254(02)00067-4

Desoky, A.M. (2009). Company characteristics as determinants of Internet financial reporting in emerging markets: The case of Egypt. *Research in Accounting in Emerging Economies, 9*, 31-71. http://dx.doi.org/10.1108/s1479-3563(2009)0000009004

Dutta, P., & Bose, S. (2007). Web-based corporate reporting in Bangladesh: An exploratory study. *The Cost and Management, 35*(6), 29-45.

Elmasry, T., Benni, E., Patel, J., & Moore, J.P. (October, 2016). *Digital Middle East: Transforming the region into a leading digital economy*. Retrieved from https://www.mckinsey.com/global-themes/ middle-east-and-africa

Elsayed, A.N.E., El-Masry, A.A., & Elbeltagi, I.M. (2010). Corporate governance, firm characteristics and Internet financial reporting: Evidence from Egyptian listed companies. *Corporate Ownership and Control, 7*(4), 396-426. http://dx.doi.org/10.22495/cocv7i4c4p1

Eng, L.L., & Mak, Y.T. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy, 22*(4), 325-345. http://dx.doi.org/10.1016/s0278-4254(03)00037-1

Evans, J., Henderson, D., & Trinkle, B. (2011). The link between Internet financial reporting and information asymmetry for American depository receipts. *Journal of Modern Accounting and Auditing, 7*(9), 947-965.

Fan, J., & Wong, T.J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics, 33*(3), 401-425. http://dx.doi.org/10.1016/S0165-4101(02)00047-2

Fleming, G., Heaney, R., & McCosker, R. (2005). Agency costs and ownership structure in Australia. *Pacific-Basin Finance Journal, 13*(1), 29-52. http://dx.doi.org/10.1016/j.pacfin.2004.04.001

Francis, J., Khurana, I., & Pereira, R. (2005). Disclosure incentives and effects on cost of capital around the world. *The Accounting Review, 80*(4), 1125-1162. http://dx.doi.org/10.2308/accr.2005.80.4.1125

Gheeraert, L. (2014). Does Islamic finance spur banking sector development? *Journal of Economic Behavior and Organization, 103*, 4-20. http://dx.doi.org/10.1016/j.jebo.2014.02.013

Ghnaya, B.B. (2015). Research and development disclosure information on internet by multinational corporations. *International Journal of Information Technology and Management, 14*(4), 274-304. http://dx.doi.org/10.1504/ijitm.2015.072080

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E.. (2010). *Multivariate data analysis* (7th edition). Upper Saddle River, NJ: Prentice Hall.

Halawi, A., & Awan, H. (2008). *TNI market insight*. Retrieved from hawkamah.org/uploads/reports/BASIC_FinalAug08.pdf.

Haniffa, R., & Hudaib, M. (2006). Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance and Accounting, 33*(7-8), 1034-1062. http://dx.doi.org/10.1111/j.1468-5957.2006.00594.x

Healy, P.M., & Palepu, K.G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1-3), 405-440. http://dx.doi.org/10.1016/S0165-4101(01)00018-0

Ho, S.M., & Wong, K. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation, 10*(2), 139-156. http://dx.doi.org/10.1016/S1061-9518(01)00041-6

Isidro H., & Raonic, I. (2012). Firm incentives, institutional complexity and the quality of "harmonized" accounting numbers. *International Journal of Accounting, 47*(4), 407-436. http://dx.doi.org/10.1016/j.intacc.2012.10.007

Jo, S., & Jung, J. (2005). A cross-cultural study of the world wide web and public relations. *Corporate Communications: An International Journal, 10*(1), 24-40.

Jones, M.J., & Xiao, J.Z. (2004). Financial reporting on the Internet by 2010: A consensus view. *Accounting Forum, 28*(3), 237-263. http://dx.doi.org/10.1016/j.accfor.2004.07.002

Kamla, R., & Roberts, C. (2010). The global and the local: Arabian Gulf States and imagery in annual reports. *Accounting, Auditing and Accountability Journal, 23*(4), 449-481. http://dx.doi.org/10.1108/09513571011041589

Kelton, A.S., & Yang, Y. (2008). The impact of corporate governance on Internet financial reporting. *Journal of Accounting and Public Policy, 27*(1), 62-87. http://dx.doi.org/10.1016/j.jaccpubpol.2007.11.001

Khediri, K.B., Charfeddine, L., & Youssef, S.B. (2014). Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques. *Research in International Business and Finance, 33*, 75-98. http://dx.doi.org/10.1016/j.ribaf.2014.07.002

KPMG. (2017). *GCC listed banks results: Navigating through change on year ended 31 December 2016*. Retrieved from https://assets.kpmg.com/content/dam/kpmg/ae/pdf/gcc-listed-banks-report.pdf

Leuz, C., & Verrecchia, R.E. (2000). The economic consequences increased disclosure. *Journal of Accounting Research, 38*, 91-124. http://dx.doi.org/10.2307/2672910

Leuz, C., Nanda, D., & Wysocki, P.D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics, 69*(3), 505-527. http://dx.doi.org/10.1016/S0304-405X(03)00121-1

Lybaert, N. (2002). On-line financial reporting: An analysis of the Dutch listed companies. *The International Journal of Digital Accounting Research, 2*(4), 195-234. http://dx.doi.org/10.4192/1577-8517-v2_7

Maghyereh, A.I., & Awartani, B. (2012). Financial integration of GCC banking markets: A non-parametric bootstrap DEA estimation approach. *Research in International Business and Finance, 26*(2), 181-195. http://dx.doi.org/10.1016/j.ribaf.2011.10.001

Maghyereh, A.I., & Awartani, B. (2014). Bank distress prediction: Empirical evidence from the Gulf Cooperation Council countries. *Research in International Business and Finance, 30*, 126-147. http://dx.doi.org/10.1016/j.ribaf.2013.07.001

Mohamed, E., & Basuony, M.A.K. (2014). Determinants and characteristics of voluntary Internet disclosures in GCC countries. *The International Journal of Digital Accounting Research, 14*, 57-91. http://dx.doi.org/10.4192/1577-8517-v14_3

Mokhtar, E.S. (2017). Internet financial reporting determinants: A meta-analytic review. *Journal of Financial Reporting and Accounting, 15*(1), 116-154.

Momany, M.T., & Pillai, R. (2013). Internet financial reporting in UAE – analysis and implications. *Global Review of Accounting and Finance, 4*(2), 142-160.

Moradi, M., Salehi, M., & Arianpoor, A. (2011). A study of the reasons for shortcomings in establishment of Internet financial reporting in Iran. *African Journal of Business Management, 5*(8), 3312–3321. http://dx.doi.org/10.5897/AJBM10.1451

Ojah, K., & Mokoaleli-Mokoteli, T. (2012). Internet financial reporting, infrastructures and corporate governance: An international analysis. *Review of Development Finance, 2*(2), 69-83. http://dxdoi.org/10.1016/j.rdf.2012.04.001

Orens, R., Aerts, W., & Cormier, D. (2010). Web-based non-financial disclosure and cost of finance. *Journal of Business Finance and Accounting, 37*(9-10), 1057-1093. http://dx.doi.org/10.1111/j.1468-5957.2010.02212.x

Oyelere, P., & Kuruppu, N. (2012). Voluntary Internet financial reporting practices of listed companies in the United Arab Emirates. *Journal of Applied Accounting Research, 13*(3), 298–315. http://dx.doi.org/10.1108/09675421211281353

Pérez, C.C., Bolívar, M.P.R., & Hernández, A.M.L. (2008). E-Government process and incentives for online public financial information. *Online Information Review, 32*(3), 379-400. http://dx.doi.org/10.1108/14684520810889682

Pervan, I. (2006). Voluntary financial reporting on the Internet – analysis of the practice of Croatian and Slovene listed joint stock companies. *Financial Theory and Practice, 30*(1), 1-27.

Pollalis, Y.A. (2003). Patterns of co-alignment in information-intensive organizations: Business performance through integration strategies. *International Journal of Information Management, 23*(6), 469–492. http://dx.doi.org/10.1016/S0268-4012(03)00063-X

Puspitaningrum, D., & Atmini, S. (2012). Corporate governance mechanism and the level of Internet financial reporting: Evidence from Indonesian companies. *Procedia Economics and Finance, 2*, 157-166. http://dx.doi.org/10.1016/s2212-5671(12)00075-5

Qasim, A., & Al Barghouthi, S. (2017). Corporate Internet financial reporting practices of companies operating in emerging economies: An empirical investigation on listed companies in the United Arab Emirates. *International Journal of Business and Society, 18*(3), 641-649.

Safieddine, A. (2009). Islamic financial institutions and corporate governance: New insights for agency theory. *Corporate Governance: An International Review, 17*(2), 142–158. http://dx.doi.org/10.1111/j.1467-8683.2009.00729.x

Samaha, K., & Dahawy, K. (2010). Factors influencing corporate disclosure transparency in the active share trading companies: An explanatory study. *Research in Accounting in Emerging Economies, 10*, 87-118. http://dx.doi.org/10.1108/s1479-3563(2010)0000010009

Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014). Financial development and economic growth in an oil-rich economy: The case of Saudi Arabia. *Economic Modelling, 43*, 267-278. http://dx.doi.org/10.1016/j.econmod.2014.07.042

Santos, A. (2015). *Integrated ownership and control in the GCC corporate sector* (IMF Working Paper). Washington, DC: International Monetary Fund.

Saudagaran, S.M., & Diga, J.G. (1997). Accounting regulation in ASEAN: A choice between the global and regional paradigms of harmonization. *Journal of International Financial Management & Accounting, 8*(1), 1-32.

Thangatorai, R., Jaffar, R., & Shukor, Z.A. (2013). The effect of corporate governance mechanism on the voluntary Internet financial reporting: A case of Malaysia. *Recent Advances in Management, Marketing and Finances, 1*, 81-86.

Trabelsi, S., Labelle, R., & Dumontier, P. (2008). Incremental voluntary disclosure on corporate websites, determinants and consequences. *Journal of Contemporary Accounting and Economics, 4*(2), 120-155. http://dx.doi.org/10.1016/s1815-5669(10)70032-1

Turmin, S.Z., Hamid, F.A., & Ghazali, N.A.M. (2015). Corporate Internet reporting in emerging economic countries: The Malaysian perspective. *Pertanika Journal of Social Sciences and Humanities, 23*, 73-88.

Turrent, C.B., & Ariza, L.R. (2012). Corporate information transparency on the Internet by listed companies in Spain (IBEX35) and Mexico (IPYC). *The International Journal of Digital Accounting Research, 12*, 1-37. http://dx.doi.org/10.4192/1577-8517-v12_1

United Nations. (2017). *The world investment report*. Geneva: United Nations Publications. Retrieved from http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf.

Wang, D. (2006). Founding family ownership and earnings quality. *Journal of Accounting Research, 44*(3), 619-656. http://dx.doi.org/10.1111/j.1475-679x.2006.00213.x

Wang, J. (2003). *Governance role of different types of state-shareholders: Evidence from China's listed companies* (Doctoral thesis, Hong Kong University of Science and Technology). Retrieved from http://ihome.ust.hk/~wangjw/download/stateshares.pdf

Wang, Z., Ali, M.J., & Al-Akra, M. (2013). Value relevance of voluntary disclosure and the global financial crisis: Evidence from China. *Managerial Auditing Journal, 28*(5), 444-468. http://dx.doi.org/10.1108/02686901311327218

Wan-Hussin, W.N. (2009). The impact of family-firm structure and board composition on corporate transparency: Evidence based on segment disclosures in Malaysia. *The International Journal of Accounting, 44*(4), 313-333. http://dx.doi.org/10.1016/j.intacc.2009.09.003

Ward, A.J., Brown, J.A., & Rodriguez, D. (2009). Governance bundles, firm performance, and the substitutability and complementarity of governance mechanisms. *Corporate Governance: An International Review, 17*(5), 646-660. http://dx.doi.org/10.1111/j.1467-8683.2009.00766.x

Webb, K., Cahan, S., & Sun, J. (2008). The effect of globalization and legal environment on voluntary disclosure. *The International Journal of Accounting, 43*(3), 219-245. http://dx.doi.org/10.1016/j.intacc.2008.06.001

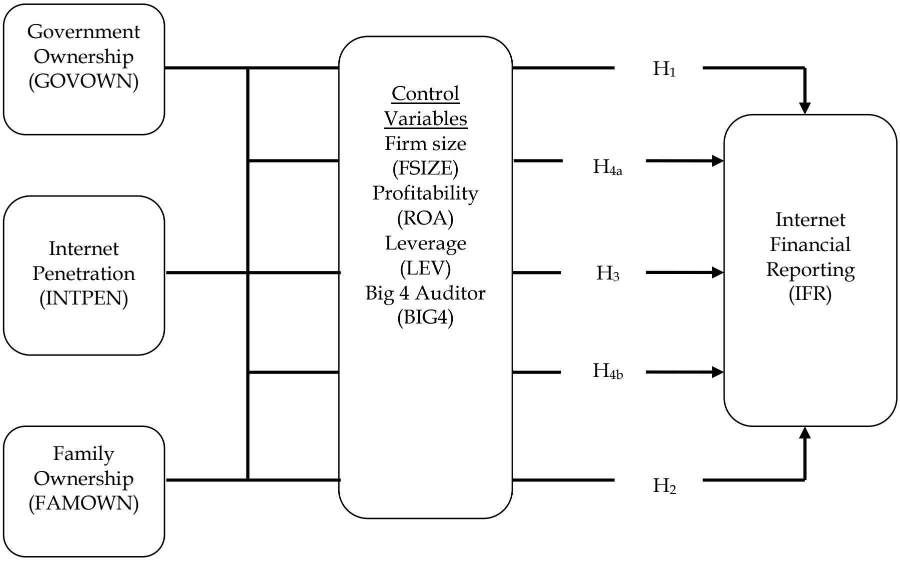
World Bank (2018). *World development indicators 2018*. Washington DC: Author.

Xiao, J.Z., Yang, H., & Chow, C.W. (2004). The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies. *Journal of Accounting and Public Policy, 23*(3), 191-225. http://dx.doi.org/10.1016/j.jaccpubpol.2004.04.002

Yusof, R.M., & Bahlous, M. (2013). Islamic banking and economic growth in GCC and East Asia countries: A panel cointegration analysis. *Journal of Islamic Accounting and Business Research, 4*(2), 151-172. http://dx.doi.org/10.1108/jiabr-07-2012-0044

Appendices

Appendix A: Research Framework



Appendix B: Summary of Variables

Variables	Description	Measurement	Expectation	References
IFR	The level of Internet Financial Reporting	Total score for 35 disclosure items	n/a	Self-developed based on studies including Desoky (2009), Aly, Simon and Hussainey (2010), Al-Htaybat (2011)
GOVOWN	Percentage of ordinary shares held by government	The percentage of 5% or more of shares held by the government	+/–	Chahine (2007), AbuGhazaleh et al. (2012), Al-Musalli and Ku Ismail (2012)
FAMOWN	Percentage of ordinary shares held by a family	The percentage of 5% or more of shares held by a family	+/–	AbuGhazaleh et al. (2012), Al-Musalli and Ku Ismail (2012)
INTNET	Percentage of a population using the Internet from the Internet World Statistics in 2012	Quintile Rank of 1 for the lowest quintile to 5 for the highest quintile of national internet penetration	+	Debreceny et al. (2002)
FSIZE	Firm size	Natural logarithm of the book value of the total assets	+/–	Abdelsalam et al. (2007), Alanezi (2009)
ROA	Profitability	Net profit or loss divided by total assets.	+	Xiao et al. (2004), Abdelsalam et al. (2007), Alanezi (2009)
LEV	Leverage	Total debt divided by total assets	+/–	Chahine (2007)
BIG4	Audited by Big4 accounting firms	Dummy variable of one (1) if the company is audited by BIG4 audit companies and zero (0) otherwise	+/–	Aly et al. (2010), AbuGhazaleh et al. (2012)

Appendix C: Extent of Individual Items of IFR Index

Items included	No. of Companies	Percentage
Presentation items		
Website available Arabic	98	65
Website available English	152	100
Connect with us on\follow us: F\T*	42	28
Latest News	122	80
Pull-down menu	115	76
Contact us	149	98
Link to the stock exchange website	57	38
Link to parent or subsidiary	81	53
Frequently asked question (FAQ)	56	37
Phone No for investor relations	77	51
E-mail address for investor relations	56	37
Postal address	46	30
Search box (Internal search engines)	99	65
Annual report in PDF format	134	88
Annual report in HTML format	3	1
Sitemap	90	59
Content items		
Current year annual report	92	61
Past years annual report	101	66
Half year annual report	77	51
Quarterly reports	89	59
Balance sheet	118	78
Income statement	118	78
Statement of shareholders' equity	115	76
Cash flow	115	76
Current share prices	56	37
Historical share prices	47	31
Financial highlight/summary	84	55
Notes to financial statements	113	74
Background of the organization	150	99
Description of the nature of the company	139	91
Names of board members	140	92
The board of directors information	29	19
Auditor's report	109	72
Ownership structure	56	37
Corporate social responsibility	44	29

Note: * F = Facebook and T = Twitter.

Age Segmentation for Predicting Behavioural Intention of Using Railway Services in Indonesia

Savira Miranti Ansory* and Anya Safira

ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to examine the predictors of passengers' behavioural intention in using railway services. It also attempts to identify whether these predictors differ among consumers of different age groups.
Design/ Methodology/ Approach: A survey is conducted to collect data from the passengers using the KA Commuter Line (KRL) Jabodetabek. The 213 respondents are divided into two age segmentations comprising young and old. Data are analysed separately. The proposed model is tested quantitatively through multiple regression analysis and the independent sample t-test.
Research findings: The results show that different age groups have different evaluations and they use different determinants for gauging the railway services. Perceived value emerges as an important determinant of customer satisfaction among the younger age group whereas service quality is the determinant for the older age group. Both groups, however, consider corporate image and customer satisfaction as determinants of behavioural intention.
Theoretical contributions/ Originality: This paper contributes to existing research on public transportation from a marketing perspective. It extends on previous works by adopting age segmentation to examine passengers' perception, evaluation and behavioural intention of using the railway services in Jakarta.

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Practitioner/ Policy implications: The findings of this study suggest that the Indonesian Railway Company should take age segmentation as a meaningful and useful social categorisation. It should not treat the entire population of passengers to be the same. Different age groups have different responsiveness and expectations of the railway services thus, the Indonesian Railway Company needs to put in more efforts in maintaining and improving its corporate image so as to encourage more people to use its services thereby reducing traffic congestion in Jakarta.
Research limitation: This study is limited by its sample size. Therefore, it is not possible to perform structural equation modelling (SEM).

Keywords: Behavioural Intention, Railway Services, Age Segmentation, Customer Satisfaction, Corporate Image.
JEL Classification: M3

1. Introduction

Jakarta, as the capital city of Indonesia, is facing a serious traffic congestion problem that has thus far, remained unsolved. A survey of the Castrol Magnatec Start-Stop found that Jakarta ranks as the world's most traffic-congested city (Wardhani & Budiari, 2015). This is the consequence of Jakarta's high annual motor vehicle growth which has not been complemented by road developments, whether in number or in size. The current growth rate of road constructions in Jakarta is only about one per cent as compared to 12 per cent of private vehicle ownership (Ramadhan, 2015). If this situation continues, it is predicted that Jakarta will experience total congestion by the year 2020. According to Ramadhan (2015), the number of motor vehicles in 2014 was 17.5 million units with 75 per cent of these vehicles being motor cycles and 18 per cent being private cars. The remainders were public modes of transportation such as freight cars and special vehicles. These statistics suggest that road congestion has become an alarming phenomenon in Jakarta. Harmadi, Yudisthira and Koesrindartono (2015) proposes that congestion in Jakarta could lead to economic inefficiency due to the increase in travel time. The longer travel time caused by the time lost in traffic affects the individual's life in several ways. First, it adds to the fuel costs. Second, it alleviates productivity. Third, it causes missed opportunities and finally, it contributes to air pollution which then increases public health concerns. All of these can slow down the economic growth and development of Jakarta.

The traffic congestion issue in Jakarta has triggered a number of reforms. For instance, the government has turned to developing mass public transportations to ease the public's mode of transportation. This includes the KA Commuter Line Jabodetabek, the Mass Rapid Transit (MRT), the Light Rapid Transit (LRT), and the Transjakarta busway. There were also some efforts to develop road networks and to establish policies with regards to road pricing and other aspects of macro transportation. Despite all these attempts, traffic congestion seems to have worsened. This is evidenced by the plummeting ratio of public transportation users in the last ten to fifteen years, depreciating from 56 per cent to between 20 and 25 per cent in 2014 (Jannah, 2014). Many people in Jakarta seem to prefer travelling by private vehicles or motorcycles in particular rather than public transportation. Gaduh, Gracner and Rothenberg (2017) noted that the commuting patterns in Jakarta cannot be explained by the changes that emerged in the fare costs which have remained low and flat. This shows that people are moving away from using public transportation. The weak indication of ridership could have been triggered by various factors. An earlier study conducted by Khafian (2013) emphasised that people view public transportation to be an unreliable mode of transportation for a number of reasons. One of these is the lack of vehicles servicing the public, next is the safety of the passengers while riding these public transportations followed by the punctuality schedule and the lack of comfort offered by public transportation. It was also unravelled by Khafian (2013) that motorcycle use was 38 per cent more efficient than public transportations.

The pervasive problem of road congestion has drawn the attention of various academic researchers. From the economic perspective, this issue has been investigated by Harmadi et al. (2015) who observed the willingness of the people in Jakarta to compensate in terms of money for averting traffic congestion. Their study noted that on average, 17 per cent of the private car users were willing to pay additional costs to avoid traffic congestion. In relation to this, 80 per cent of the motorcycle users were willing to pay not more that IDR100,000 per month for additional transportation costs to avert traffic congestion. Regular trains and bus commuters in general, were willing to pay an additional transportation cost of less than IDR100,000 per month for the same intent. All these additional costs represent the passengers' willingness to compensate in monetary terms for better public transportation provided by the government, as a way of reducing traffic congestion. From the social science perspective, Khafian (2013) suggested that sustainable transportation policy can be a part of the solution for overcoming the traffic congestion problem in Jakarta. Existing studies (Harmadi et al., 2015; Khafian, 2013; Gaduh et al., 2017) have provided some useful insights into the congestion problem in Jakarta but these are limited in scope. To the best of the authors' knowledge, little work has been done to explore this issue from the consumer's behavioural perspective.

Within the context of public transportation, consumer behaviourism has been well used as an underlying perspective to evaluate the service quality dimensions (e.g. De Ona, De Ona, Eboli, & Mazzulla, 2015; Cavana, Corbett, & Lo, 2007; Prasad & Shekhar, 2010; Irfan, Kee, & Shahbaz, 2012). Some researchers (Brons, Givoni, & Rietveld, 2009; Rahaman & Rahaman, 2009; Geetika & Shefali, 2010; Chou, Kim, Kuo, & Ou, 2011; Eboli & Mazzulla, 2012) also focussed on examining the relationship between service quality and customer satisfaction. Despite these, the theories, concepts and practices developed in other countries may not necessarily be applicable to Indonesia, specifically Jakarta. Gaduh et al. (2017) have observed that communities in Jakarta city may react differently due to the different transportation routes and infrastructure, values, tastes, demographic compositions of households, income and commuting behaviour. Therefore, it is imperative to investigate this issue from the perspective of the Jakartan consumers.

As a developing country, Indonesia has an urbanisation process that is growing rapidly. This process however, is often associated with people growth and the development of clustering industries in cities. Consequently, this leads to significant traffic congestion. This paper takes Jakarta as the focus because it is one of the world's largest agglomeration, with a total population of more than 31 million. In this regard, the city is also acknowledged as having the worst traffic problem in the world (Gaduh et al., 2017). The KA Commuter Line Jabodetabek was chosen because its services are seen to be one of the possible solutions to ease the increasing traffic in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi – commonly abbreviated as Jabodetabek). The services are managed by the Indonesian Railway Company, a state-owned public company. The company is the single provider of railway services in the Greater Jakarta area. The subsidiary was formed in 2008 as an attempt to provide better services to the passengers of the KA Commuter Line (KRL) Jabodetabek.

For the purpose of predicting the behavioural intentions of the consumers, this study developed a model which incorporates service quality, perceived value, corporate image and customer satisfaction. This model was tested into two age segmentations using regression analysis. To date, the Indonesian Railway Company has not made any effort to segment their consumers. This research thus attempts to examine whether age segmentation is a viable method of segmentation for the KA Commuter Line (KRL) Jabodetabek users. Prior studies (Parahoo, Harvey, & Radi, 2014) have shown that age has a significant impact on consumption patterns. Age can also influence passengers' service utilisation. Therefore, the importance of age is discussed in this study. The respondents were divided into two age segmentations: 29 years old and above and below 29 years old. The age of 29 acts as the cut-off age because it represents the median age of the Indonesian population (Central Intelligence Agency, 2014).

This study is believed to benefit the Indonesian Railway Company decision makers and the Indonesian government. An understanding of the passengers' behaviour from the perspective of marketing could facilitate strategic decisions that would increase communities' intention to use the KA Commuter Line (KRL) Jabodetabek. It is hoped that the increased use of public transportation (in this case, KA Commuter Line (KRL) Jabodetabek) can reduce the utilisation of private vehicles thereby reducing traffic congestion and air pollution.

The rest of this paper is organised as follows. Section 2 reviews prior literature on theoretical background and hypotheses development. Section 3 explains the research method. Section 4 presents and discusses the findings and Section 5 concludes the paper.

2. Literature Review and Hypotheses Development

2.1 Behavioural Intention and Service Quality

Behavioural intention is the extent of a person's desire to act in a certain behaviour (Fishbein & Ajzen, 1975). It measures how hard an individual tries and the effort he/she plans to exert in order to perform the behaviour. Behavioural intention is an important outcome of service quality that is experienced at the time of the service encounter. An individual who experiences acceptable or good service quality is more likely to be satisfied and to possess a favourable behavioural intention towards buying or using a certain service. The individual may also engage in giving others more encouragement to buy/use the same service through word-of-mouth. A positive feedback from such individuals will not only determine the likeliness of their purchasing decision but also influence others.

Based on the above explanation, it can be deduced that examining the behavioural intention of public transportation's passengers is an important issue (Hsiao & Yang, 2010). Doing so can help to increase the use of public transportations and reduce the number of private vehicles on the road. This can help to alleviate the level of traffic congestion that is currently pervasive. Only a few studies (Liu & Liao, 2010) have examined behavioural intention in the research related to public transportation. Undoubtedly, passengers would always like and expect public transportation services to be perfectly standardised and streamlined so that they could use the services without any setbacks. They would have certain expectations before using the services and are likely to compare their expectations with their actual experiences. The result of such comparisons will determine their level of service quality and this will lead to their behavioural intentions.

Examining service quality dimensions and their relationship to behavioural intention is important. Many studies (e.g. Perez, Abad, Carrillo, & Fernandez, 2007; Dabholkar, Shepherd, & Thorpe, 2000) have shown the relationship between service quality and behavioural purchase intention or behavioural intention. Perez et al. (2007) indicated that there are five dimensions of service quality which comprise tangibility, reliability, receptivity/responsiveness, assurance and empathy. These dimensions are also associated with the individual's behavioural intention to use the service provided. Based on this argument, service quality was also added as a variable to the current study. The factors associated with service quality (i.e., reliability and responsiveness) were considered as antecedents, rather than dimensions or components of the constructs. As Dabholkar et al. (2000) have shown, such an approach offers a greater understanding of the evolving service quality construct.

2.2 SERVQUAL Model

According to Lovelock, Vandermerwe, Lewis, and Fernie (2011), most people have difficulties in defining service because its production process is intangible. The service industry differs from the manufacturing or agriculture industry where the latter produces physical goods which can be evaluated based on physical attributes. Services, in contrast, is fundamentally invisible although it may also involve certain percentage of physical goods. The production of services does not commonly end with the production of any physical materials.

Service quality is usually measured by a well-known tool called, SERVQUAL which was developed by Parasuraman, Zeithaml and Berry (1985). The tool contains five dimensions namely tangibles, reliability, responsiveness, assurance and empathy. Tangibles refer to the tangible amenities, the furnishings and the employee's appearance. Reliability refers to the ability to accomplish an agreed service consistently, precisely and without fail. Responsiveness refers to the employee's willingness to assist customers and to offer on-time services. Assurance refers to the employees' know-how, their good manners and their capability to encourage trust and confidence. Finally, empathy is a form of tenderness; it is a personalised attention bestowed on the customers by the employees. The SERVQUAL tool has been widely used in various industries and contexts with some adjustments made to the instruments to tailor to the needs of certain contexts. As an example, the E-S-QUAL was developed from the SERVQUAL and used to assess electronic service quality such as Internet banking (Randheer, Al-Motawa, & Vijay, 2011). When using the SERVQUAL as an instrument to assess service quality, some scholars (e.g. Chang & Yeh, 2002) emphasised the imperative need to select specific quality attributes that can reflect the service environment being observed. This implies that the SERVQUAL tool can be very much context-dependent. In that respect, the current study adjusted the SERVQUAL tool to tailor suit the transportation industry of Jakarta. This is done to ensure its relevancy to the context of the study so that the questionnaire developed is more meaningful.

Despite its extensive application, the SERVQUAL tool has been criticised based on conceptual and operational grounds. One major objection raised about the tool is the engagement of customers' expectations and perceptions to represent service quality. While perception is definable and measurable because it represents consumers' experiences about a particular service, expectations are subjected to multiple interpretations, as noted in several studies (e.g. Jain & Gupta, 2004; Dabholkar et al., 2000; Brown, Churchill, & Peter, 1993). This can cause the tool to have poor reliability. Cronin and Taylor (1992) also raised the issue of the SERVQUAL scale. They asserted that the "expectation" component of the SERVQUAL tool should be discarded and be replaced with the "performance" component solely. They offered empirical evidence drawn from four industries namely banks, pest control, dry cleaning and fast food, to demonstrate this assertion. Eventually, they created a new instrument which was termed as SERPERF. Given the criticism noted by prior studies, this study thus considers using the one-stage form of service quality measurement namely, SERVPERF.

2.2.1 Tangibles

Tangibles, as defined above, are associated with tangible amenities, furnishings and employee's appearance. These have been highlighted as an important attribute that contributes to service quality. In a study conducted by Joewono and Kubota (2007), tangible aspects such as comfortable seats and good security were among the pertinent aspects of service quality. Their respondents claimed to be dissatisfied with the cleanliness of the vehicles and the bus stops. Similarly, Lai and Chen (2011) also detected that users of the Mass Rapid Transit System in Kaohsiung place importance on the physical environment such as conditions at terminals and stops, and vehicle and facility cleanliness. Supporting this, Brady and Cronin Jr. (2001) also discovered that tangibles influence service quality. Based on this, the hypothesis formulated is as follows:

> H_1: Tangibles have a positive influence on service quality.

2.2.2 Reliability

Reliability refers to the ability to accomplish an agreed service precisely and consistently, without fail. In a study of airline services in Taiwan, Chen (2008) identified reliability to be an important attribute of perceived service performance. Based on a collaborative research by TRL Limited, the Universities of Leeds, Oxford and Westminster, and the University College of London (Paulley, et al., 2006), it was found that the main factor to consider when examining the reliability of public transport services is excessive waiting time. This is because a long wait in a service transaction can be frustrating for the passengers. Thus, it is plausible to assume that a long waiting time for transportation services will disrupt the passengers' daily schedules and activities. An excessively long waiting time for buses in Singapore was observed to drive away the anxious passengers and to make them reluctant to take public transport (Lee, Sun, & Erath, 2012). In Ghana, it was found that passengers of the Metro Mass Transit (MMT) are dissatisfied with the services of the MMT due to the long journey time (Birago, Mensah, &

Sharma, 2017). The passengers traced this problem to the frequent and unneccesary stops of allowing passengers to alight and board the MMT. Redman, Friman, Garling, and Hartig (2013) also found the dimension of reliability to be a key attribute of public transport quality. This dimension can eventually alter the behaviour of private car users to use public transportation. Based on this, the hypothesis formulated is as follows:

H_2: Reliability has a positive influence on service quality.

2.2.3 Responsiveness

Responsiveness is a form of employee willingness to assist customers and to offer on-time services. Some studies (Randheer et al., 2011; Prasad & Shekhar, 2010; Zakaria, Hussin, Batau & Zakaria, 2010) found the willingness of employees to help customers and their ability to respond to customers as important indicators of the responsiveness attribute. In the context of public transport services, high levels of responsiveness appear to be highly relevant. For instance, providing clear information to passengers in the case of delay or responding to any errors, can instil positive impressions and satisfaction towards the service (Yavas, Bilgin, & Shemwell, 1997). Responsiveness was also used as a means to reduce the impact of public transport disruptions (Papangelis et al., 2016). Commonly, during service disruptions, passengers who are affected begin to gather as much information as possible from multiple channels. Hence, being responsive by providing real time information just prior to and during the journey, is extremely valuable for the passengers. This can influence pasengers' travel behaviour, cultivate positive attitudes towards the service providers and create positive perceptions of efficiency. Based on this, the hypothesis formulated is as follows:

H_3: Responsiveness has a positive influence on service quality.

2.2.4 Assurance

Assurance in the transportation context mainly concerns safety and security during the journey (Prasad & Shekhar, 2010). In their study looking at New Zealand, Cavana et al. (2007) found assurance to be the most important service quality factor followed by responsiveness and empathy. In Malaysia, majority of the passengers of public transport indicated that they still have doubts over the safety assurance level provided by public transportations (Dahalan, D'Silva, Abdullah, Ismail & Ahmad, 2015). Most of them cited robbery and snatch thieves as the most relevant security aspect. They highlighted that overloading passengers during peak hours will contribute to robbery and sexual harassment on board public transport. In the U.K., Beecroft and Pangbourne (2015) observed that knowledge of the location and routes or confidence in signage while in unfamiliar places, can reduce passenger uncertainty about the journey thereby making them feel more secure. The study also demonstrated that fear of slips or trips in the vehicle is associated with the security confidence and this is more prevalent among the elderly pasengers or the disabled passengers. Based on this, the hypothesis formulated is as follows:

H_4: Assurance has a positive influence on service quality.

2.2.5 Empathy

Many studies (Kumar, 2012; Vanniarajan & Stephen, 2008; Nandan, 2010; Khairul Baharein, & Kamariah, 2013) have established a link between empathy and service quality. Kumar (2012) incorporated empathy as an important attribute of service quality. He used indicators such as dealing with customers in a caring fashion and understanding customer needs. Likewise, Vanniarajan and Stephen (2008) and Nandan (2010) also identified empathy as an attribute that passengers used to evaluate the service quality of the Indian Railways. Within the Malaysian context, Khairul Baharein and Kamariah (2013) reported that a majority of the passengers interviewed were not happy with the customer service personnel's attitude at the bus hubs. They indicated that customer service providers showed a lack of eye contact and a smiling face when communicating with passengers. Some had also indicated that the personnel seemed to be unfriendly in the late afternoons as compared to the mornings. It is presumed that the long working hours of the employees had led to their fatigue which contributed to their behaviour and attitude towards passengers. Based on this, the hypothesis formulated is as follows:

H_5: Empathy has a positive influence on service quality.

2.3 Service Quality, Customer Satisfaction and Perceived Value

Customer satisfaction refers to the customer's cognitive and affective reaction when responding to a certain service engagement (Hu, Kandampully, & Juwaheer, 2009; Wu, Lin, & Hsu, 2011). Many studies (Carrillat, Jaramillo, & Mulki, 2007; Islam, Chowdhury, Sarker, & Ahmed, 2014) have documented a positive relationship between service quality and customer satisfaction. Within the public transportation literature, Islam et al. (2014) found that the operational failures of public transportations such as delay of transportations can create frustations among the passengers and this causes customer dissatisfaction. Afolabi, Hassan and Age (2017) also highlighted that inadequate facilities at bus stops such as insufficient seats and shelters to protect passengers from the sun, rain, dust and other elements that would impact health and safety, also affect the level of passengers' satisfaction with public bus services. Based on this, the hypothesis formulated is as follows:

H_6: Service quality is positively related to customers' satisfaction.

While extensive literature (Caruana, Money, & Berthon, 2000; Zeithaml, 1988; Park, 2007) have demonstrated the relationship between service quality and customers' satisfaction, it appears that high service quality does not necessarily trigger high satisfaction and satisfaction does not need to be dependent on service quality *per se*. High service quality leads to good satisfaction level only when customers perceive good values, which are mostly linked to low or competitive prices. These arguments suggest that the relationship and the effect of service quality on customer satisfaction is not direct. In fact, it may be moderated by customers' perceived value (Caruana, Money, & Berthon, 2000). Zeithaml (1988) defines perceived value as the customers' evaluation of a product or service based on their view of what is received and what is given. It is about how customers/consumers perceive what they could gain and how much costs they need to bear by using a certain product or service. Consumers' perceived costs comprise both economical and non-economical prices such as time, search, psychological costs, price and others. Viewing from the public transportation industry, Park (2007) considers perceived value to mean the exchange between the price of tickets and the services given. Based on this, the hypothesis formulated is as follows:

H_7: Perceived value moderates the relationship between service quality and customer satisfaction.

Previous literature (Chao, Shyr, Chao, & Tsai, 2012) has established a relationship between perceived value and service quality in which service quality was found to influence perceived value. Chao et al.

(2012) also found that Gen Y passengers' rated the service quality of high speed rail based on their emotional values towards the services. The passengers in the study mentioned that they liked and enjoyed the high speed rail and they felt relaxed when taking the service. Lo, van Breukelen, Peters and Kok (2013) stated that whilst it is possible to travel by train to European destinations, office workers generally chose to fly because they value time more than cost. They felt that travelling by train would have taken more time. They would only decide to use the train services if it takes lesser time than flying. Based on this, the hypothesis formulated is as follows:

H_8: Service quality has a positive influence on perceived value.

The role of perceived value, as a predictor of customer satisfaction, has also been highlighted in prior empirical works (Pratminingsih, Rudatin, & Suhardi, 2013; Hapsari, Clemes, & Dean, 2015; Parasuraman, Zeithaml, & Berry, 1988). For example, Pratminingsih et al. (2013) emphasised that there is a positive relationship between perceived value and passenger satisfaction. Hapsari et al. (2015) also found a positive and significant influence of perceived value on customer satisfaction. This approach departs from the traditional perspective which only relates service quality to customer satisfaction (Parasuraman et al., 1988). Accordingly, a passenger will be satisfied with the transportation service delivered if he/she perceives that the service is in line with his/her perceived value. On using the service, a passenger will judge the service based on what he/she values more. In the context of the Indonesian airline, Hapsari et al. (2015) found that passengers have their own goals which will influence their way of interacting or patronising the service. Passengers who travel on business trips may not be able to tolerate delayed flights as this is inconsistent with their perceived values. Hence, they were more likely to develop higher levels of customer dissatisfaction. Based on this, the hypothesis formulated is as follows:

H_9: Perceived value has a positive influence on customer satisfaction.

2.4 Customer Satisfaction and Behavioural Intention

Customer satisfaction has been well established to be a significant predictor for behavioural intention in literature. For example, de Ona et al. (2015) found that transit passengers' behavioural intentions in the future are influenced by their level of satisfaction which may vary from one to another. Their perceptions about the different characteristics of the service, costs and benefits/gains help to form their level of satisfaction. Birago et al. (2017) illustrated that customers' dissatisfaction about the time schedule and seats capacity are among the reasons for passengers not using the Metro Mass Transit in Africa. Based on this, the hypothesis formulated is as follows:

H_{10}: Customer satisfaction has a positive influence on behavioural intention.

2.5 *Corporate Image, Service Quality, Customer Satisfaction and Behavioural Intention*

Corporate image is a customer's perception towards a company or organisation that is associated with the customer's memory (Keller, 1993). Previous service marketing research (Andreassen & Lindestad, 1998) had identified the essential role of corporate image in the company's service evaluation. A good corporate image can make a corporate stand out in the crowd and this allows the company to retain a loyal customer or to gain a new customer's attention (Connor & Davidson, 1997).

Corporate image is influenced by service quality positively (Hu et al., 2009). This is traced to Park, Robertson and Wu (2004) who demonstrated that airline passengers' perceptions of the service quality help to project a good airline image. A passenger's image of the airline company is found to be commonly based on long-term experiences which encompass many service encounters.

There is a general consensus that corporate image affects the future behaviour of consumers, as noted by literature (e.g. Chen & Tsai, 2007). These studies argue that customers' patronising behaviour towards a particular company depends on the company's corporate image. In a fast food service restaurant setting, Prendergast and Man (2002) revealed that waiting time, store environment and store location help to build the company's corporate image which would affect the customers' future intention. Within the airline industry, Hussain, Nasser and Hussain (2015) identified corporate image to be vital in attracting passengers and for distinguishing a company from other competitors. Their study highlight that the more reputable an airline is, the more trust it can build among its passengers. This consequently leads to future service purchases. Various sources (e.g., Chen & Tsai, 2007) have also shown corporate image to be a predictor for customer satisfaction. Based on this, the hypotheses formulated are as follows:

H_{11}: Service quality has a positive influence on corporate image.

H_{12}: Corporate image has a positive influence on behavioural intention.

H_{13}: Corporate image has a positive influence on customer satisfaction.

2.6 *Age Segmentation*

Age plays an important role in consumer behaviour. It affects the customers' consumption patterns and it has been linked to the essential social and psychographic dimensions (Wagar & Lindqvist, 2010). Age is a common tool for consumer market segmentation in marketing where it is used to target different groups of customers. Prior studies (Elvik & Bjornskau, 2005; Rojo, Gonzalo-Orden, Dell'Ollio, & Ibeas, 2011) suggested that customers' expectations of services may vary across contexts where service is differentiated by customer characteristics. Within the context of public transportation, different ages have different life styles and these differences may significantly influence their needs and expectations for service. As individuals age, their personal mobility becomes increasingly impaired by their changing health and physical limitations and this likewise, affect their expectations of services. This is expected to affect their perceptions and behaviour towards public transportation (Elvik & Bjornskau, 2005; Rojo et al., 2011). Based on this, the hypothesis formulated is as follows:

H_{14}: There is a difference in behaviour between the two age groups of customers.

3. Research Methodology

Based on the literature review, a conceptual model consisting of ten variables was formulated, as shown in Figure 1. The five dimensions of service quality were adapted from Parasuraman et al. (1985) and the indicators to measure them were adapted from various sources as can be seen in Appendix A.

In this study, data were collected through an online survey. A questionnaire incorporating a five-point Likert-type scale ranging from "One (1) = strongly disagree" to "Five (5) = strongly agree" was used.

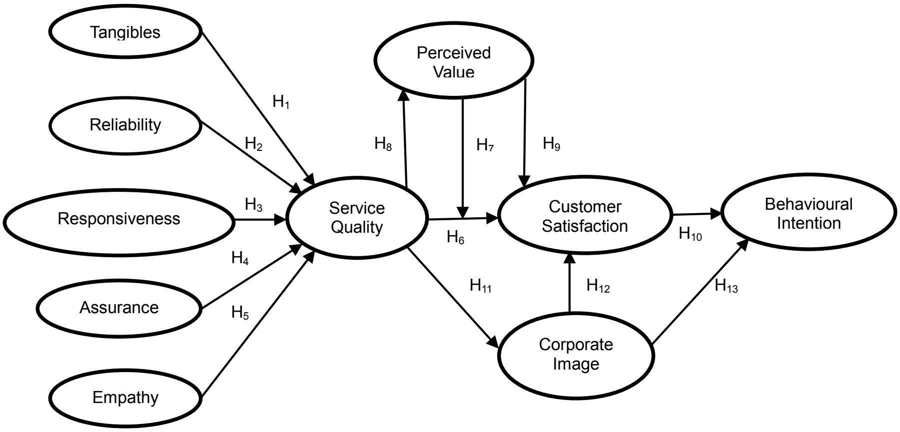

Figure 1: Research Model

A double back to back translation was performed on the questionnaire where it was translated from English to the Indonesian language and then back to the English language. This was performed by two bilingual researchers so as to avoid language related errors. The bilingual researchers are native speakers of Bahasa Indonesia with advanced knowledge of English.

As there was no accessible database of the KA Commuter Line (KRL) Jabodetabek users, non-probability sampling was used in this study. The questionnaire was hosted online and the link was distributed through two Facebook members who were also bloggers and have 7,000 followers cumulatively. The respondents were encouraged to forward the survey link to their followers. The questionnaire was also distributed to the online community of KA Commuter Line (KRL) Jabodetabek. KA Commuter Line (KRL) Jabodetabek has gone through dramatic changes over the past years, with substantial improvements during the past three months (at the time the questionnaire was administered). To ensure that the respondents experience a similar level of services and that they can still recall their experiences in using the railway services, a screening question was used. Only those who had used the service in the past three months (at the time the questionnaire was administered) were included. Through the snowballing technique, 213 valid responses were obtained.

The respondents were then divided into two groups namely, a younger passenger group comprising those below 29 years of age and an older passenger group who were 29 years old and above. Twenty-nine years old was chosen as the cut-off age because it is the median age of the Indonesian population (Central Intelligence Agency, 2014). Independent sample t-test was used to analyse whether there is a difference between the two age groups. Several models of ordinary least squares (OLS) regression were then analysed to evaluate each path in the conceptual model. The regressions were conducted separately for each group as has been used in previous marketing studies (Parahoo et al., 2014; Shamma & Hassan, 2009). The moderation effect of perceived values was tested by multiplying the variable with service quality (SQ x PV). The value was then added into the regression model (Hayes & Matthes, 2009).

4. Analysis and Findings

4.1 Descriptive Analysis

Table 1 depicts the demographic profiles of the respondents. Of the 213 respondents, 53 per cent were females with majority belonging to the younger group. Almost half of the respondents worked in the

Table 1 : Respondent Profile

Variables	Categories	Frequency	Percentage
Gender	Female	113	53.0
	Male	100	47.0
Age	Under 29	132	62.0
	29 years and above	81	38.0
Occupation	Private Sector Workers	97	45.5
	Civil Servants	24	11.3
	Teachers/Lecturers	9	4.2
	Students	68	3.9
	Entrepreneurs	3	1.4
	Others	12	5.6
Motor Vehicle Ownership	Owns a motorcycle	88	41.3
	Owns a car	32	15.0
	Owns a motorcycle and a car	57	26.8
	Does not own a vehicle	31	16.0
	Others	2	0.94

private sector. Students formed the second largest group of respondents who used the transportation. Based on these figures, it appears that these two groups of respondents were the frequent users of the KA Commuter Line (KRL) Jabodetabek. They used the service to commute to work, school, or university on a daily basis. It is interesting to note that almost all of the respondents own a vehicle mostly, motorcycles. Some respondents even own both a motorcycle and a car. This indicates that railway services can become an alternative for commuting and can reduce the utilisation of private vehicles.

Table 2 depicts the mean and standard deviation of each item and variable tested in this study. The results indicate that the users of the KA Commuter Line (KRL) Jabodetabek railway services generally have a good perception on the quality of services offered by the company. They were also satisfied with the services and they have a favourable behavioural intention towards the service.

4.2 Reliability and Validity

All the survey instruments were validated using Cronbach's Alpha (internal consistency) and factor analysis (construct validity). As evident in Table 3, all scales achieved were above 0.6 (0.835 to 0.935), indicating a high level of internal consistency (Malhotra, 2010).

Factor analysis was then conducted to assess the construct validity of each variable. Exploratory factor analysis was utilised to analyse the determinants of service quality. The principle components with Varimax rotation method were chosen (Abdi, 2003). In this study, factor analysis was done in a more confirmatory approach where each factor was analysed separately. This is because the instruments used are well-established. The aim of using factor analysis was to determine whether a hypothesised factor structure is supported by the data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity were also observed to determine whether factor analysis was suitable to be conducted. Both indicators provide a value of above 0.6, with a p-value <0.001, demonstrating the suitability of the factor analysis (Malhotra, 2010). All the items loaded were above 0.5, with a p-value <0.001 (Hair, Black, Babin, & Anderson, 2009). These results indicate that the scales used in this study were both reliable and valid.

Table 2. Descriptive Statistics of the Items

Variables	Indicators	Mean	Overall Mean	Standard Deviation	Overall Std. Deviation
Tangibles	TAN1	4.5023	4.2449	1.04441	0.86064
	TAN2	4.1596		1.14219	
	TAN3	4.7230		0.90245	
	TAN4	3.9765		1.22644	
	TAN5	4.4742		1.04860	
	TAN6	3.6338		1.51321	
Reliability	REL1	3.6291	3.8620	1.34883	1.01587
	REL2	3.8545		1.35021	
	REL3	3.2629		1.40631	
	REL4	4.2535		1.15805	
	REL5	4.3099		0.98467	
Responsiveness	RES1	4.0329	4.1330	1.18316	1.07357
	RES2	3.9765		1.20315	
	RES3	4.3897		1.10457	
Assurance	ASS1	4.3146	4.2066	1.06825	0.93069
	ASS2	4.2488		1.23589	
	ASS3	4.3991		1.04854	
	ASS4	4.1878		1.15434	
	ASS5	3.8826		1.37715	
Empathy	EMP1	3.8310	4.0554	1.32094	0.97561
	EMP2	4.0563		1.27628	
	EMP3	4.4930		1.20776	
	EMP4	3.7371		1.18417	
	EMP5	4.1596		1.19071	
Service Quality	SQ1	4.1784	3.8028	1.06669	1.02880
	SQ2	3.5493		1.17106	
	SQ3	3.6808		1.25196	
Perceived Value	PV1	4.5634	4.4664	1.03795	0.97212
	PV2	4.4601		1.15928	
	PV3	4.3756		1.09878	
Corporate Image	CI1	4.2066	4.3646	1.13875	0.97078
	CI2	4.6761		1.06543	
	CI3	4.2113		1.09349	
Customer Satisfaction	CS1	4.8545	4.8310	0.97247	0.90920
	CS2	4.9296		0.92640	
	CS3	4.7089		0.99989	
Behavioural Intention	BI1	4.4366	4.8415	1.12097	0.92868
	BI2	4.1174		0.95677	
	BI3	4.9437		1.11025	
	BI4	4.8685		1.08662	

Table 3: Scale Assessment

Variables	Indicators	Factor Loading	Eigen-value	Variance Explained	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity	Cron-bach's Alpha
Tangibles	TAN1	0.779	3.386	56.429	0.829	0.000	0.835
	TAN2	0.721					
	TAN3	0.766					
	TAN4	0.804					
	TAN5	0.721					
	TAN6	0.711					
Reliability	REL1	0.835	3.274	65.481	0.822	0.000	0.866
	REL2	0.859					
	REL3	0.841					
	REL4	0.730					
	REL5	0.773					
Responsive-ness	RES1	0.913	2.552	85.054	0.733	0.000	0.912
	RES2	0.947					
	RES3	0.906					
Assurance	ASS1	0.868	3.185	63.699	0.820	0.000	0.846
	ASS2	0.748					
	ASS3	0.865					
	ASS4	0.800					
	ASS5	0.695					
Empathy	EMP1	0.733	3.132	62.630	0.820	0.000	0.848
	EMP2	0.786					
	EMP3	0.778					
	EMP4	0.785					
	EMP5	0.868					
Service Quality	SQ1	0.885	2.352	78.393	0.693	0.000	0.858
	SQ2	0.926					
	SQ3	0.843					
Perceived Value	PV1	0.872	2.346	78.196	0.729	0.000	0.860
	PV2	0.903					
	PV3	0.877					
Corporate Image	CI1	0.885	2.339	77.979	0.727	0.000	0.858
	CI2	0.863					
	CI3	0.901					
Customer Satisfaction	CS1	0.943	2.656	88.543	0.769	0.000	0.935
	CS2	0.942					
	CS3	0.938					
Behavioural Intention	BI1	0.839	3.022	75.547	0.797	0.000	0.890
	BI2	0.854					
	BI3	0.862					
	BI4	0.918					

4.3 Comparing the Age Groups

In order to test H_{14}, the data for the younger and older age groups were compared using independent sample t-test. As can be seen in Table 4, there was a difference in the mean for all of the variables examined. All the paths were significant at p<0.001 (tangibles, responsiveness, empathy, service quality, perceived value, corporate image, customer satisfaction and behavioural intention) and p<0.05 (reliability and assurance). This result indicates that there is a difference in evaluation between the younger and older passengers. This finding validates the findings of previous literature (Wagar & Lindqvist, 2010; Rojo et al., 2011) on consumer behavioural research.

Table 4. Result of T-Test

Variables	Age Group	Mean	Std. Deviation	T-value
Tangibles	Young	4.3813	0.82129	3.008***
	Old	4.0226	0.88182	
Reliability	Young	3.9879	0.94869	2.333**
	Old	3.6568	1.09189	
Responsiveness	Young	4.3081	0.995	3.099***
	Old	3.8477	1.14024	
Assurance	Young	4.3318	0.89914	2.539**
	Old	4.0025	0.95052	
Empathy	Young	4.2273	0.90183	3.361***
	Old	3.7753	1.03072	
Service Quality	Young	4.1061	0.91849	5.915***
	Old	3.3086	1.01212	
Perceived Value	Young	4.7399	0.71849	5.038***
	Old	4.0206	1.15512	
Corporate Image	Young	4.5909	0.84668	4.539***
	Old	3.9959	1.04946	
Customer Satisfaction	Young	5.0429	0.73146	4.169***
	Old	4.4856	1.0581	
Behavioural Intention	Young	5.0455	0.79167	3.989***
	Old	4.5093	1.03866	

Note: *** significant at 1 per cent level, ** significant at 5 per cent level, * significant at 10 per cent level.

4.4 Assumptions of Regression

Prior to the hypotheses testing (H_1–H_{13}), several assessments of the assumptions of regression were conducted. First, the normality test was conducted by observing the values of skewness and kurtosis so as to ensure a normal data distribution. As indicated in Table 5, the data were distributed normally since the values were in the range of –2 and +2 (George & Mallery, 2010).

Table 5: Skewness and Kurtosis

	N	Skewness	Std. Error	Kurtosis	Std. Error
Tangibles	213	-.276	.167	.872	.332
Reliability	213	-.014	.167	-.011	.332
Responsiveness	213	-.507	.167	.072	.332
Assurance	213	-.313	.167	.286	.332
Empathy	213	-.436	.167	.382	.332
Service Quality	213	-.332	.167	.184	.332
Perceived Value	213	-.895	.167	.874	.332
Corporate Image	213	-.674	.167	.941	.332
Customer Satisfaction	213	-.823	.167	.745	.332
Behavioural Intentions	213	-.898	.167	.833	.332

Next, the Durbin-Watson test was performed to ensure that there was no autocorrelation. As demonstrated in Table 6, all the values for each variable achieved the threshold point (range of 1-3), indicating that they were free from the bias (Field, 2009).

Third, the variables were assessed for the existence of multicollinearity (Table 6). This was done by examining the collinearity diagnostics namely, the Tolerance and Variance Inflation Factor (VIF) values. According to Hair et al. (2009), the acceptable tolerance value is above 0.1 and the acceptable VIF value is 10 or below. All the results indicate an absence of multicollinearity with some values which were not in the acceptable range for service quality and the moderator (service quality x perceived value). However, this was actually expected as service quality was used as one of the input variables to compute the moderating variable.

Table 6. Durbin-Watson, Tolerance and VIF

Dependent Variable	Independent Variable(s)	Durbin-Watson	Tolerance	VIF
Model 1: Service Quality	Tangibles	1.861	0.337	2.966
	Reliability		0.203	4.937
	Responsiveness		0.246	4.062
	Assurance		0.268	3.725
	Empathy		0.313	3.194
Model 2: Perceived Value	Service Quality	1.843	1.000	1.000
Model 3: Corporate Image	Service Quality	1.692	1.000	1.000
Model 4: Customer Satisfaction	Service Quality	1.744	0.061	16.437
	Perceived Value		0.124	8.082
	Service Quality x Perceived Value		0.032	31.443
	Corporate Image		0.329	3.039
Model 5: Behavioural Intention	Corporate Image	1.724	0.440	2.272
	Customer Satisfaction		0.440	2.272

4.5 Younger Passengers

Due to the nature of the research model, a series of regression analysis were conducted to examine the relationships between the variables in the study. The results of five regression models are summarised in Table 7. It is interesting to note that none of the service quality predictors – tangibles (β=0.019, t=0.132), reliability (β=0.086, t=0.531), responsiveness (β=-0.014, t=-0.092), assurance (β=0.163, t=1.051), empathy (β=0.241, t=1.592) were found to have significant relationship with service quality. Hence, H_1, H_2, H_3, H_4, H_5 are rejected. While previous studies (e.g. Lai & Chen, 2011; Birago et al., 2017; & Papangelis et al., 2016) had found service quality to be related with the five antecedents, this study did not find substantial evidence to establish the relationship. Perhaps, the result was due to the different context of the research. Since service is characterised as intangible, younger people in Indonesia may have different perceptions about the factors that may influence the service quality. For instance, in Taiwan, Gen Y passengers were found to enjoy the high speed rail and they felt relaxed when taking the service. This

Table 7. Regression Analysis for Younger Passengers (under 29 years old)

Dependent Variable(s)	Independent Variable(s)	R^2	F-value	β	t-value
Model 1: Service Quality	Tangibles	0.177	6.643***	0.019	0.132
	Reliability			0.086	0.531
	Responsiveness			0.014	0.092
	Assurance			0.163	1.051
	Empathy			0.241	1.592
Model 2: Perceived Value	Service Quality	0.415	93.841***	0.647	9.687***
Model 3: Corporate Image	Service Quality	0.451	108.586***	0.675	10.420***
Model 4: Customer Satisfaction	Service Quality	0.557	42.177***	0.133	0.460
	Perceived Value			0.435	2.087**
	Service Quality x Perceived Value			-0.08	-0.183
	Corporate Image			0.553	6.218***
Model 5: Behavioural Intention	Corporate Image	0.537	77.084***	0.356	4.260***
	Customer Satisfaction			0.442	5.288***

Note: ****p*<0.001, ***p*<0.05, **p*<0.01.

factor inadvertently, also affected their perception on service quality (Chao et al., 2012).

As indicated by models 2 and 3 (see Table 7), service quality is significantly related to perceived value (β=0.647, t=9.687***) and corporate image (β=0.675, t=10.420***). Therefore, H_6 and H_{11} are supported. This result is consistent with previous research (Chao et al., 2012; Park et al., 2004). The findings demonstrate that younger passengers will have higher perceived values and they associate the company with good corporate image if they perceived the service quality to be high.

As highlighted by model 4 (Table 7), only perceived value (β=0.435, t=2.087***) and corporate image (β=0.553, t=6.218***) had influenced customer satisfaction. Hence H_9 and H_{13} are accepted. This finding reaffirms previous research (Hapsari et al., 2015; Chen & Tsai, 2007). The result, however, does not endorse the relationship between service quality and customer satisfaction. It departs from the traditional perspective which associates service quality with customer satisfaction

(Parasuraman et al., 1988). The inconsistent results indicate that younger passengers will only be satisfied if the services delivered are compatible with their own values and goals. This study also highlights a significant relationship between corporate image with behavioural intention (β=0.356, t=4.260***) and customer satisfaction with behavioural intention (β=0.442, t=5.288***). The results were expected and similar outcomes have been documented in various consumer behavioural research (e.g. Birago et al., 2017; Hussain et al., 2015). The findings indicate that customer satisfaction and corporate image are important for inducing a positive behavioural intention among younger passengers.

4.6 Older Passengers

This study finds that assurance (β=0.463, t=2.731**) is a determinant for service quality among older passengers hence H_4 is supported. This finding demonstrates that older passengers perceive safety and security as important factors which will determine their service quality level. The results could posisbly be due to the fact that as people age they also become more concerned about the security levels when using public transportations (Beecroft & Pangbourne, 2015). This study illustrates that tangibles (β=0.158, t=1.135), reliability (β=0.03, t=0.132), responsiveness (β=-0.124, t=-0.681) and empathy (β=0.187, t=1.274) were not significantly related to service quality. Therefore, H_1, H_2, H_3 and H_5 are rejected.

This study highlights that service quality influences both the perceived value (β=0.616, t=6.947***) and corporate image (β=0.720, t=9.232***) in the context of older passengers, similar to the younger passengers' finding. Therefore, H_8 and H_{11} are supported. This finding is consistent with prior empirical works (Chao et al., 2012; Park et al., 2004). As indicated in Table 8 (model 4), service quality (β=0.548, t=1.876***) and corporate image (β=0.526, t=3.934***) affect customer satisfaction while perceived value (β=0.134, t=0.578) does not play any significant role in predicting customer satisfaction. Hence, H_6 and H_{13} are supported while H_9 is rejected. This result however, differs from the younger passengers' outcome. This finding indicates that perceived value varies with the age of passengers. As indicated by model 5 in Table 8, corporate image (β=0.279, t=3.142***) and customer satisfaction (β=0.628, t=7.012***) influence behavioural intention. These results are consistent with previous research (Chen & Tsai, 2007; Prendergast & Man, 2002; de Ona et al., 2015).

Table 8: Older Passenger (Passengers Twenty-Nine (29) Years and Older)

Dependent Variable(s)	Independent Variable(s)	R^2	F-value	β	t-value
Model 1: Service Quality	Tangibles	0.406	11.948 ***	0.158	1.135
	Reliability			0.03	0.132
	Responsiveness			0.124	0.681
	Assurance			0.463	2.731**
	Empathy			0.187	1.274
Model 2: Perceived Value	Service Quality	0.371	48.261 ***	0.616	6.947***
Model 3: Corporate Image	Service Quality	0.513	85.224 ***	0.720	9.232***
Model 4: Customer Satisfaction	Service Quality	0.629	34.918 ***	0.548	1.876*
	Perceived Value			0.134	0.578
	Service Quality x Perceived Value			0.646	1.604
	Corporate Image			0.526	3.934***
Model 5: Behavioural Intention	Corporate Image	0.720	103.632***	0.279	3.142***
	Customer Satisfaction			0.628	7.012***

Note: ***p<0.001, **p<0.05, *p<0.01.

5. Discussion, Conclusion and Implication

The findings of this study indicate that age plays an important role in customers′ consumption patterns of the railway services in Indonesia. It specifically reveals that perceived value emerged as a significant predictor for customer satisfaction which in turn, influences behavioural intention for the younger passenger group. Meanwhile, for the older passenger group, perceived value does not play a role. Instead, customer satisfaction is associated with service quality. These results imply that the younger passenger group are more value conscious. The level of service quality does not significantly influence their satisfaction with the KA Commuter Line (KRL) Jabodetabek services. It is plausible to argue that the younger passengers are predominantly students who also belonged to the low-income segment. They relied on the financial support of their parents or guardians hence, they tend to focus their attention on meeting their needs of transportation within their limited amount of money rather than the quality of the services (Vargo & Lusch, 2008). These results are different from previous findings (Parahoo et al., 2014) which showed that service quality had been traditionally viewed as the key predictor of customer satisfaction. For the older passenger group, customer satisfaction was influenced by the level of service quality and not by their perceived values. This means that the older group were more concerned about the quality of the services, especially assurance, rather than the value they can get for their money. It is acceptable to assume that the price sensitivity decreases as age increases because the older passenger group is assumed to have more security in their jobs and financial aspects when compared to the younger passenger group. Consequently, the older group tends to focus on the service quality and in particular, assurance, from which they can instil their trust and confidence toward the service. This study however, found that both groups consider corporate image and customer satisfaction as predictors to behavioural intention.

The findings of this study provide implications to both theory and practice. The outcome of this study contributes to the field of public transportation and consumer behaviour. It extends on prior works by adopting age segmentation as a means to predict the behavioural intention of public transport utilisation. In this study, service quality was treated as an individual dimension analysis instead of as an aggregate contruct. This approach is expected to produce a more detailed value for service quality improvement (Sachdev & Verma, 2004). The results of this study also emphasise the importance of exploring the service quality dimensions that are relevant to the passengers of railway services in Indonesia. In particular, the railway services was accentuated due to the need to understand which service quality dimension contribute to perceived value, corporate image and customer satisfaction. This was achieved by utilising a direct or separate service quality analysis. This is more appropriate than using a single generic scale across the different sectors.

In terms of contribution to practices, the results also stresses on the need for the Indonesian Railway Company to consider adopting age segmentations when designing marketing strategies. In order to maintain and increase the younger passengers' (under 29 years old) intention to use the KA Commuter Line (KRL) Jabodetabek services, the management of the Indonesian Railway Company should perform their utmost commitment by enhancing the monetary values of their services. The company can consider setting special rates for the younger segment such as the youths or students who are found to be more price sensitive when compared to the older passengers. On the other hand, a different strategy should be undertaken by the Indonesian Railway Company to maintain or increase the older passengers' (29 years old and older) intention to use the KA Commuter Line (KRL) services) by providing more assurance to them through increasing passenger safety, trust and confidence toward the railway services. Nothwithstanding this, it is also important for the company to build a good corporate image. An effective marketing communication demonstrating the breakthrough improvements or other revolutionary changes need to be conveyed to the public so as to build a good corporate image.

This study has several limitations. Firstly, in the context of the younger passengers, service quality has an influence on perceived value and corporate image even though none of its determinants has a significant influence towards the service quality. Therefore, future researchers should consider using a qualitative or exploratory study to obtain the service quality dimensions that are more relevant to the younger group of passengers. This can provide a deeper analysis on the service quality dimensions. It is further suggested that future researchers conduct a direct analysis of each service quality dimension towards perceived value, corporate image and customer satisfaction, separately. Doing so may generate different results such as showing which service quality dimension needs more focus. This input can be used to further contribute to the examination of public transportation and its service quality. Secondly, the generalisability of this study is confined to the context of Jakarta only due to the small sample size. For that reason, future research should attempt to gather more respondents with a more equal distribution between age segments. Thirdly, the authors did not use SEM because of the insufficient number of respondents to be analysed within a relative short research time frame. This instrument may generate more accurate results as it provides a more comprehensive analysis. Thus it is recommended that furture research take this into consideration. Finally, this study only used age segmentation. Other segmentations such as gender segmentation or income segmentation should be duly considered for future studies.

References

Abdi, H. (2003). Factor rotations in factor analyses. In M.S. Lewis-Beck, A. Bryman, & T.F. Liao (Eds.), *The Sage encyclopedia of social science research methods* (pp. 792-795). Thousand Oaks, CA: Sage Publications.

Afolabi, O.J., Hassan, A.M., & Age, L.O. (2017). Behavioral pattern of commercial public transport passengers in Lagos metropolis. *Journal of Sustainable Development of Transport and Logistics, 2*(1), 40-50. http://dx.doi.org/10.14254/jsdtl.2017.2-1.4

Andreassen, T.W., & Lindestad, B. (1998). Customer loyalty and complex services: The impact of corporate image, on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. *International Journal of Service Industry Management, 9*(1), 7-23. http://dx.doi.org/10.1108/09564239810199923

Barabino, B., Deiana, E., & Tilocca, P. (2012). Measuring service quality in urban bus transport: A modified SERVQUAL approach. *International Journal of Quality and Service Sciences, 4*(3), 238-252. http://dx.doi.org/10.1108/17566691211269567

Beecroft, M., & Pangbourne, K. (2015). Personal security in travel by public transport: The role of traveller information and associated technologies. *IET Intelligent Transport Systems, 9*(2), 167-174. http://dx.doi.org/10.1049/iet-its.2013.0166

Birago, D., Mensah, S.O., & Sharma, S. (2017). Level of service delivery of public transport and mode choice in Accra, Ghana. *Transportation Research Part F: Traffic Psychology and Behaviour, 46*(Part B), 284-300. http://dx.doi.org/10.1016/j.trf.2016.09.033

Brady, M.K., & Cronin Jr, J.J. (2001). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing, 65*(3), 34-49.

Brons, M., Givoni, M., & Rietveld, P. (2009). Access to railway stations and its potential in increasing rail use. *Transportation Research Part A, 43*(2), 136-149. https://doi.org/10.1016/j.tra.2008.08.002

Brown, T.J., Churchill, G.A., & Peter, J.P. (1993). Improving the measurement of service quality. *Journal of Retailing, 69*(1), 127-139. http://dx.doi.org/10.1016/S0022-4359(05)80006-5

Carrillat, F.A., Jaramillo, F., & Mulki, J.P. (2007). The validity of the SERVQUAL and SERVPERF scales: A meta-analytic view of 17 years of research across five continents. *International Journal of Service Industry, 18*(5), 472-490. http://dx.doi.org/10.1108/09564230710826250

Caruana, A., Money, A., & Berthon, P. (2000). Service quality and satisfaction: The moderating role of value. *European Journal of Marketing, 34*(11/12), 1338-1353. http://dx.doi.org/10.1108/03090560010764432

Cavana, R.V., Corbett, L.M., & Lo, Y.L. (2007). Developing zones of tolerance for managing passenger rail service quality. *International Journal of Quality and Reliability Management, 24*(1), 7-31. http://dx.doi.org/10.1108/02656710710720303

Central Intelligence Agency. (2014). *The world factbook – Indonesian median age*. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/fields2177.html

Chang, Y.H., & Yeh, C.H. (2002). A survey analysis of service quality for domestic airlines. *European Journal of Operational Research*, 139(1), 166-177. http://dx.doi.org/10.1016/S0377-2217(01)00148-5

Chao, C.W., Shyr, O.F., Chao, C.H., & Tsai, L. (2012). What drives college-age generation Y's perceived value on high-speed rail. *African Journal of Business Management, 6*(43), 10786-10790. http://dx.doi.org/10.5897/AJBM11.2433

Chen, C. (2008). Investigating structural relationships between service quality, perceived value, satisfaction, and behavioral intentions for air passengers: Evidence from Taiwan. *Transportation Research Part A, 42*(4), 709-717. http//dx.doi.org/10.1016/j.tra.2008.01.007

Chen, C.F., & Tsai, D. (2007). How destination image and evaluative factors affect behavioral intentions? *Tourism Management, 28*(4), 1115-1122. http://dx.doi.org/10.1016/j.tourman.2006.07.007

Chou, J.S., Kim, C., Kuo, Y.C., & Ou, N. (2011). Deploying effective service strategy in the operations stage of high-speed rail. *Transportation Research Part E: Logistics and Transportation Review, 47*(4), 507-519. http://dx.doi.org/10.1016/j.tre.2010.12.004

Connor, D., & Davidson, J. (1997). *Marketing your consulting and professional services*. New York, NY: John Wiley and Sons.

Cronin, J.J., & Taylor, S.A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing, 56*(3), 55-68. http://dx.doi.org/10.2307/1252296

Dabholkar, P.A., Shepherd, C.D., & Thorpe, D.I. (2000). A comprehensive framework for service quality: an investigation of critical conceptual and measurement issues through a longitudinal study. *Journal of Retailing, 76*(2), 139-173. http://dx.doi.org/10.1016/S0022-4359(00)00029-4

Dahalan, D., D'Silva, J.L., Abdullah, H., Ahmad, N., & Ismail, I. (2014). Level of prejudiced among youth in Klang Valley, Malaysia towards public transport. *Life Science Journal, 11*(6), 365-373.

De Ona, J., De Ona, R., Eboli, L., & Mazzulla, G. (2015). Heterogeneity in perceptions of service quality among groups of railway passengers. *International Journal of Sustainable Transportation, 9*(8), 612-626. http://dx.doi.org/10.1080/15568318.2013.849318

Eboli, L., & Mazzulla, G. (2012). Structural equation modelling for analysing passengers' perceptions about railway services. *Procedia – Social and Behavioural Science, 54*(October), 96-106. http://dx.doi.org/10.1016/j.sbspro.2012.09.729

Elida, T., & Mukodim, D. (2015). *Quality of service on public mass transit in Jakarta*. Paper presented at the 3rd Uzbekistan-Indonesia International Joint Conference on Economic Development and Nation Character Building to Meet the Global Economic Challenges, Indonesia. Retrieved from http://repository.gunadarma.ac.id/809/

Elvik, R., & Bjornskau, T. (2005). How accurately does the public perceive differences in transport risks? An exploratory analysis of scales representing perceived risk. *Accident Analysis and Prevention, 37*(6), 1005-1011. http://dx.doi.org/ 10.1016/j.aap.2005.05.003

Field, A.P. (2009). *Discovering statistics using SPSS* (3rd. edition). London: Sage Publications.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Gaduh, A., Gracner, T., & Rothenberg, A.D. (2017). *Improving mobility in developing country cities: Evaluating bus rapid transit and other policies in Jakarta*. Retrieved from https://4ed04206-a-62cb3a1a-s-sites.googlegroups.com/site/alexrothenberg/research/BRT_Jakarta_JMP.pdf?

Geetika, G., & Shefali, N. (2010). Determinants of customers satisfaction on service quality: A study of railway platforms in India. *Journal of Public Transportation, 13*(1), 97-113. http://dx.doi.org/10.5038/2375-0901.13.1.6

George, D., & Mallery, M. (2010). *SPSS for windows step by step: A simple guide and reference, 17.0 update* (10th edition). Boston, MA: Pearson.

Hapsari, R., Clemes, M.D., & Dean, D. (2015). The role of customer engagement in enhancing passenger loyalty in Indonesian Airline industry: Relationship marketing approach. *Asia Pacific Management and Business Application, 3*(3), 135-144.

Harmadi, S.H.B., Yudisthira, M.H., & Koesrindartono, D.P. (2015). How does congestion matter for Jakarta's citizens? *Journal of Indonesian Economy and Business, 30*(3), 220-238.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2009). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice Hall.

Hayes, A.F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*(3), 924-936. http://dx.doi.org/10.3758/BRM.41.3.924

Hsiao, C.H., & Yang, C. (2010). Predicting the travel intention to take high speed rail among college students. *Transportation Research Part F: Traffic Psychology and Behavior, 13*(4), 277-287. http://dx.doi.org/10.1016/j.trf. 2010.04.011

Hu, H.H.S., Kandampully, J., & Juwaheer, T.D. (2009). Relationships and impacts of service quality, perceived value, customer satisfaction, and image: An empirical study. *The Service Industries Journal, 29*(2), 111-125. http://dx.doi.org/ 10.1080/02642060802292932

Hussain, R., Al Nasser, A., & Hussain, Y.K. (2015). Service quality and customer satisfaction of a UAE-based airline: An empirical investigation. *Journal of Air Transport Management, 42*(January), 167-175. http://dx.doi.org/10.1016/j.jairtraman.2014.10.001

Irfan, S.M., Kee, D.M.H., & Shahbaz, S. (2012). Service quality and rail transport in Pakistan: A passenger perspective. *World Applied Sciences Journal, 18*(3), 361-369. http://dx.doi.org/10.5829/idosi.wasj.2012.18.03.3044

Islam, R., Chowdhury, M.S., Sarker, M.S., & Ahmed, S. (2014). Measuring customer's satisfaction on bus transportation. American *Journal of Economics and Business Administration, 6*(1), 34-41. http://dx.doi.org/10.3844/ajebasp.2014.34.41

Jain, S.K., & Gupta, G. (2004). Measuring service quality: SERVQUAL vs. SERVPERF scales. *Vikalpa, 29*(2), 25-38.

Jannah, K.M. (2014, October 24). *30% pengguna angkot beralih ke motor*. Retrieved from http://economy.okezone.com/read/2014/10/24/320/1056510/pemprov-dki-30-pengguna-angkot-beralih-ke-motor

Jen, W., Tu, R., & Lu, T. (2010). Managing passenger behavioral intention: An integrated framework for service quality, satisfaction, perceived value, and switching barriers. *Transportation, 38*(2), 321-342. http://dx.doi.org/10.1007/s11116-010-9306-9

Joewono, T., & Kubota, H. (2007). User satisfaction with paratransit in competition with motorization in Indonesia: Anticipation of future implications. *Transportation, 34*(3), 337-354.

Khafian, N. (2013). The efforts of handling transportation problems in DKI Jakarta through sustainable transportation policy. *Jurnal Ilmu Administrasi dan Organisasi, 20*(3), 179-185.

Khairul Baharein, M.N, Kamariah, D. (2013). Towards low carbon society: Exploring users' perceptions on the service quality level performance of public transport staff in the Klang Valley. *International Journal of Management and Sustainability 2*(8), 138-149.

Keller, K.L. (1993). Conceptualizing, measuring, and managing consumer-based brand equity. *Journal of Marketing, 57*(1), 1-22. http://dx.doi.org/10.2307/1252054

Kumar, K.S. (2012). Expectations and perceptions of passengers on service quality with reference to public transport undertakings. *IUP Journal of Operations Management, 11*(3), 67-81.

Lai, W., & Chen, C.F. (2011). Behavioral intentions of public transit passengers: The roles of service quality, perceived value, satisfaction and involvement. *Transport Policy, 18*(2), 318-325. http://dx.doi.org/10.1016/j.tranpol.2010.09.003

Lee, D.H., Sun, L., & Erath, A. (2012, April). *Study of bus service reliability in Singapore using fare card data*. Paper presented at 12th Asia-Pacific Intelligent Transpotation Forum, Singapore.

Liu, C.H., & Liao, S.K. (2010). An empirical study of factors affecting customer loyalty: Taiwan high-speed rail service industry as an example. *International Journal of Services Operations and Informatics, 5*(2), 130-157. http://dx.doi.org/ 10.1504/IJSOI.2010.031114

Lo, S.H., van Breukelen, G.J., Peters, G.J.Y., & Kok, G. (2013). Proenvironmental travel behavior among office workers: A qualitative study of individual and organizational determinants. *Transportation Research Part A: Policy and Practice, 56*, 11-22. http://dx.doi.org/10.1016/j.tra.2013.09.002

Lovelock, C.H., Vandermerwe, S., Lewis, B., & Fernie, S. (2011). *Services marketing* (Working Paper, Edinburgh Business School). Edinburgh: Heriot-Watt University.

Malhotra, N.K. (2010). *Marketing research: An applied orientation*. New York, NY: Prentice Hall.

Nandan, S. (2010). Determinants of customer satisfaction on service quality: A study of railway platforms in India. *Journal of Public Transportation, 13*(1), 97-113.

Papangelis, K., Velaga, N.R., Ashmore, F., Sripada, S., Nelson, J.D., & Beecroft, M. (2016). Exploring the rural passenger experience, information needs and decision making during public transport disruption. *Research in Transportation Business & Management, 18*(March), 57-69. http://dx.doi.org/10.1016/j.rtbm.2016.01.002

Parahoo, S., Harvey, H., & Radi, G. (2014). Changing consumer behavior paradigms: Does passenger age impact factors influencing MRT usage? *Corporate Reputation Review, 17*(1), 64-77. http://dx.doi.org/10.1057/crr.2013.25

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing 49*(4), 41-50. http://dx.doi.org/10.2307/1251430

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12-40.

Park, J.W. (2007). Passenger perceptions of service quality: Korean and Australian case studies. *Journal of Air Transport Management, 13*(4), 238-242. http://dx.doi.org/10.1016/j.jairtraman.2007.04.002

Park, J.W., Robertson, R., & Wu, C.L. (2004). The effect of airline service quality on passengers' behavioral intention: A Korean case study. *Journal of Air Transport Management, 10*(6), 435-439. http://dx.doi.org/10.1016/j.jairtraman.2004.06.001

Paulley, N., Balcombe, R., Mackett, R., Titheridge, H., Preston, J., Wardman, M., … & White, P. (2006). The demand for public transport: The effects of fares, quality of service, income and car ownership. *Transport Policy, 13*(4), 295-306. http://dx.doi.org/10.1016/j.tranpol.2005.12.004

Perez, M.S., Abad, J.C.G., Carrillo, G.M.M., & Fernandez, R.S. (2007). Effects of service quality dimensions on behavioral purchase intentions: A study in public-sector transport. *Managing Service Quality, 17*(2), 134-151. http://dx.doi.org/ 10.1108/09604520710735164

Prasad, M.D., & Shekhar, B.R. (2010). Impact of service quality management (SQM) practices on Indian railways: A study of South Central Railways. *International Journal of Business and Management, 5*(9), 139-146. http://dx.doi.org/ 10.5539/ijbm.v5n9p139

Pratminingsih, S.A., Rudatin, C.L., & Suhardi, A.R. (2013). *Retaining passengers loyalty in Indonesia railway service*. Paper presented at the 4th International Conference on Business and Economic Research, Canada.

Prendergast, G., & Man, H.W. (2002). The influence of store image on store loyalty in Hong Kong's quick service restaurant industry. *Journal of Foodservice Business Research, 5*(1), 45-59. http://dx.doi.org/10.1300/J369v05n01_03

Rahaman, K.R., & Rahaman, A. (2009). Service quality attributes affecting the satisfaction of railway passengers of selective route in southwestern part of Bangladesh. *Theoretical and Empirical Researches in Urban Management, 3*(12), 115-125.

Ramadhan, A. (2015, January 9). *Jumlah motor dan mobil di Jakarta tumbuh 12 persen tiap tahun*. Retrieved from http://www.antaranews.com/berita/473169/jumlah-motor-dan-mobil-di-jakarta-tumbuh-12-persen-tiap-tahun

Randheer, K., Al-Motawa, A.A., & Vijay, P. (2011). Measuring commuters' perception on service quality using SERVQUAL in public transportation. *International Journal of Marketing Studies, 3*(1), 21-34. http://dx.doi.org/10.5539/ijms.v3n1p21

Redman, L., Friman, M., Garling, T., & Hartig, T. (2013). Quality attributes of public transport that attract car users: A research review. *Transport Policy, 25*(January), 119-127. http://dx.doi.org/10.1016/j.tranpol.2012.11.005

Rojo A.M., Gonzalo-Orden, H., Dell'Ollio, L. & Ibeas P.A. (2011). Modeling gender perception of quality in interurban bus services. *Transport, 164*(1), 43-53. http://dx.doi.org/10.1680/tran.9.00031

Sachdev, S.B., & Verma, H.V. (2004). Relative importance of service quality dimensions: A multisectoral study. *Journal of Services Research, 4*(1), 93-116.

Shamma, H.M., & Hassan, S.S. (2009). Customer and non-customer perspectives for examining corporate reputation. *Journal of Product & Brand Management, 18*(5), 326-337. http://dx.doi.org/10.1108/10610420910981800

Vanniarajan, T., & Stephen, A. (2008). Railqual and passenger satisfaction: An empirical study in Southern railways. *Asia Pacific Business Review, 4*(1), 64-75.

Vargo, S.L., & Lusch, R.F. (2008). Service-dominant logic: Continuing the evaluation. *Journal of Public Administration Review, 40*(3), 240-246.

Wagar, K., & Lindqvist, L. (2010). The role of the customer contact person's age in service encounters. *Journal of Services Marketing, 24*(7), 509-517. http://dx.doi.org/10.1108/08876041011081069

Wardhani, D.A., & Budiari, I. (2015, February 5). *Jakarta has 'worst traffic in the world'*. *The Jakarta Post*. Retrieved from http://www.thejakartapost.com/news/2015/02/05/jakarta-has-worst-traffic-world.html

Wu, J.H., Lin, Y, & Hsu, F. (2011). An empirical analysis of synthesizing the effects of service quality, perceived value, corporate image, and customer satisfaction on behavioral intention in the transport industry: A case of Taiwan high-speed rail. *Innovative Marketing, 7*(3), 83-99. http://dx.doi.org/ 10.1080/1528008X.2013.802581

Yavas, U., Bilgin, Z., & Shemwell, D. (1997). Service quality in the banking sector in an emerging economy: A consumer survey. *International*

Journal of Bank Marketing, 15(6), 217-223. http://dx.doi.org/10.1108/02652329710184442

Zakaria, Z., Hussin, Z.H., Batau, M.F.A., & Zakaria, Z. (2010). Service quality of Malaysian public transports: A case study in Malaysia / La qualité de service de transports publics Malaisiens: Une etude de cas en Malaisie. *Cross-Cultural Communication, 6*(2), 84-92.

Zeithaml, V.A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2-22. http://dx.doi.org/10.2307/1251446

Zeithaml, V., Berry, L.L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*(2), 31-46. http://dx.doi.org/10.2307/1251929

Appendix A: Operationalisation

Variables		Indicators	Sources
Tangibles	TAN1	The KRL is in good condition.	Perez et al., 2007, Barabino et al., 2012 Prasad et al., 2010; Jen, Tu, & Lu, 2010; Elida & Mukodim, 2015
	TAN2	The supporting facilities (information, ticket sales, seats, station) are in good condition.	
	TAN3	PT KAI employees have a neat, professional appearance.	
	TAN4	The comfort of facilities inside KRL is adequate.	
	TAN5	The cleanliness inside KRL is adequate.	
	TAN6	The provision of seats and standing space inside KRL is adequate.	
Reliability	REL1	The information provided is accurate and reliable.	Perez et al., 2007; Barabino et al., 2012 Prasad et al., 2010 Elida & Mukodim, 2015
	REL2	PT KAI can be relied on to resolve any problems faced by passengers related to KRL services.	
	REL3	KRL operates on time.	
	REL4	The time needed for passengers to embark and disembark is adequate.	
	REL5	The ticket counter's opening and closing hours are on time.	
Responsiveness	RES1	Employees of PT KAI offer fast services to customers.	Perez et al., 2007 Prasad et al., 2010
	RES2	Employees of PT KAI are able to respond quickly to passengers' demands.	
	RES3	Employees of PT KAI are willing to help passengers.	
Assurance	ASS1	The behavior of PT KAI employees inspires trust and safety to me.	Perez et al., 2007 Prasad et al., 2010; Barabino et al., 2012
	ASS2	I feel safe in course.	
	ASS3	PT KAI employees are always polite.	
	ASS4	PT KAI employees have good knowledge in answering passengers' questions.	
	ASS5	Passengers will be informed if there is any delay in the KRL schedule.	

Appendix A: (continued)

Variables		Indicators	Sources
Empathy	EMP1	PT KAI offers convenient schedules to different passengers.	Perez et al., 2007
	EMP2	PT KAI offers convenient courses to the passengers.	
	EMP3	PT KAI gives special attention to women, children and the disabled.	
	EMP4	Employees of PT KAI provide passengers with individual attention.	
	EMP5	Employees of PT KAI have the passengers' best interest at heart.	
Service Quality	SQ1	Overall, the services of KRL have good quality.	Wu et al., 2011
	SQ2	KRL provides high quality services.	Wu et al., 2011
	SQ3	I believe that KRL provides superior services in every aspect.	Wu et al., 2011
Perceived Value	PV1	KRL provides value that is worth the price.	Wu et al., 2011
	PV2	The value that I receive from riding KRL is worth the money, time, effort and prestige that I sacrifice.	
	PV3	The overall value of using KRL is high.	
Corporate Image	CI1	I always have a good image of KRL.	Wu et al., 2011
	CI2	I believe that KRL has a good image compare to other transportation services.	
	CI3	KRL has a good image in the minds of its passengers.	
Customer Satisfaction	CS1	My choice to use KRL was a wise one.	Wu et al., 2011
	CS2	I think I did the right thing when I decided to use KRL	
	CS3	I am satisfied with my decision to use KRL.	
Behavioural Intention	BI1	I will say positive things about KRL to other people.	Wu et al., 2011
	BI2	If I could, I would use KRL again.	
	BI3	KRL will always be the first on my list when searching for public transportation services.	
	BI4	I would recommend KRL to my friends or other people.	

Extending the Theory of Planned Behaviour: Impact of Past Behavioural Biases on the Investment Decision of Indian Investors

Rajdeep Kumar Raut*, Niladri Das and Rohit Kumar

ABSTRACT

Manuscript type: Research paper.
Research aims: This paper aims to investigate the applicability of the Theory of Planned Behaviour (TPB) in examining individuals' behavioural intention to invest in the capital market. This study extends on the TPB model by considering the role of past behavioural biases (PBB) as a factor in influencing the individuals' behavioural investment intentions.
Design/ Methodology/ Approach: This paper employs a hypothesis deductive approach. The research model is tested through structural equation modelling (SEM). Data were collected from 396 individuals in Eastern India through a survey and then analysed.
Research findings: The results of this study demonstrate the applicability of the TPB in predicting the individuals' behavioural intention to invest in the capital market. This study indicates that attitude toward behaviour, subjective norms and perceived behavioural control are significantly associated with behavioural intentions. The findings signify that the inclusion of past PBB can improve the predictive power of the model.
Theoretical contributions/ Originality: This study expands on the well-established TPB model by incorporating PBB in examining

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behavioural intentions. It also extends the applicability of the TPB in the area of investment decision making.
Practitioner/ Policy implications: The findings of this study reveal that behavioural biases are inseparable from normal human beings' decision making. The reason is because behavioural biases can distort the individuals' fundamental valuation of stocks. Therefore, it is imperative that fund managers incorporate this dimension as part of their risk modelling to enhance investment analysis and strategies. The outcome of this study can be used as a guideline for understanding the factors and programmes that need to be instilled to increase online stock trading among current and future investors.
Research limitation: This study is limited to non-financial sectors due to measurement limitations.

Keywords: Theory of Planned Behaviour, Past Behavioural Biases, Investment Decision Making.
JEL Classification: G11, G02, C91

1. Introduction

The human decision making process has long been of interest to researchers. Early works had approached the topic from the economic perspective (e.g. Sciffman & Kanuk, 2007; Fama 1970). One of the prevalent theories used then was the utility theory which proposed that individuals make choices by considering the expected outcomes of their decision. In this regard, a rational decision maker will avail him/ herself to all the information that is available by analysing the available options and by selecting the optimum course of action (Schiffman & Kanuk, 2007). The rational decision making of the individual has been advocated in prior studies on portfolio theory (Markowitz, 1952), capital asset pricing (Sharpe, 1964) and capital market efficiency (Fama, 1970). However, these theories are no longer considered to be realistic as individuals rarely have the privilege of getting adequate information, motivation or time to make such a perfectly rational decision (Simon, 1997). Behavioural economics has exhibited that human beings do not "naturally" make decisions like a rational human being is supposed to do. Instead, it is a well-accepted fact that human beings regularly make errors in their decision making (Tomer, 2016). As human beings, individuals are often described as seeking satisfactory rather than optimum choices (Tversky & Kahneman, 1974). Thus, the question arises as to whether the concept of irrationality is in tune with decision makers who are supposed to be rational while making decisions. This study attempts to explore the phenomenon by studying the attitude of individuals towards their intention to invest in the stock market within a socio-psychological setting in the context of India.

Decision making can be rational or irrational. The irrational decision making of investors could be due to cognitive and psychological biases. According to Bernstein (1998), there is evidence of repeated patterns of irrationality, inconsistency, and incompetence in the way human beings arrive at their decisions and choices when faced with uncertainty. The presence of these phenomena in the financial market is the probable reason why the failure of risk management system is based on the neoclassical assumptions of normal distributions (Chittedi, 2014). Within the literature, researches in the financial market are moving towards the behavioural aspects of investment rather than adhering to the fundamental or traditional approaches (Listyarti & Suryani, 2014; Olokoyo, Oyewo, & Babajide, 2014; Sandberg, Hutter, Richetin, & Conner, 2016). With an alternative perspective looking at human behaviour, the paradigm of behavioural finance can thus shift to looking at other theories that are open to the multidisciplinary understanding of human behaviour (Tuyon & Ahmad, 2016). Such transitions in the finance research serve to uncover several approaches that can validate the fundamentals of behavioural finance.

While the importance of behavioural finance has been highlighted by scholars (Tuyon & Ahmad, 2016; Chittedi, 2014), there has been a lack of studies that focusses on India. In their observations of the Indian market, Kumar and Goyal (2016) noted that investors followed a rational decision making process when investing but the behavioural biases of the individuals can arise at various stages of the decision making. They found that this had impacted the different results found between the genders. There are also studies (Prabhu & Vachalekar, 2014; Kumar & Rajkumar, 2014; Subramanya & Murthy, 2013) that focussed on India with outcomes showing the investment behaviour of Indian investors. However, these were mainly focussed on the demographic profiles of the investors. The study of behavioural aspects that can influence the financial market is a fairly new area in India. Moreover, the study of determinants such as the socio-psychological aspects of investors had not been significantly addressed yet. Therefore, there is an imperative need for academic research to be conducted in this area so as to establish the validity of the individual's behavioural characteristics affecting their investment decision making.

Aiming to address this gap, the current study therefore endeavours to provide insights into the behavioural decision making process of individual investors in the Indian capital market. It expands on the literature pertaining to behavioural finance by incorporating the Theory of Planned Behaviour (TPB) which has been widely adopted in other fields of studies. This study expands on the TPB model by incorporating the element of past behavioural biases (PBB) as an additional measure to examine individuals' behavioural intentions.

According to Kidwell and Jewell (2008), past behaviours play a vital role in determining one's present behaviour. Despite this being so, little is known about how past behaviours might impact on the individual's informational processing within the model (Wood, Tam, & Witt, 2005). For example, will an individual with limited experiences be motivated to consider cognitive resources such as evaluating his/her silent beliefs when making decisions or will an individual with extensive experiences be likely to ignore the available information and to rely instead, on his/her past successful behaviour so as to get rid of the perceived level of difficulty before taking action? Relying on one's past behaviour or action is a cognitive bias. Individuals tend to ignore the importance of current information and such a behaviour is also termed as irrational behaviour, according to behavioural finance theories. These cognitive biases have been noted to manifest themselves through three most prominent ways: anchoring, representativeness and availability. As reflections of the individual's past experiences or past behaviours (Tversky & Kahneman, 1974), they seem relevant to how the individuals make their present decisions. Therefore, the past behaviour of the investors (past investing experience) is also taken into account when using the TPB model so as to analyse its impact on the investors' investment decision/intention.

The remainder of this paper is organised as follows. Section 2 reviews the relevant literature and develops the hypotheses and research model. Section 3 describes the research methodology. Section 4 reports the empirical results. Section 5 deals with the discussion of findings and section 6 concludes the paper.

2. Literature Review and Hypotheses Development

2.1 Theory of Planned Behaviour and its Applicability in Financial Decision Making

The Theory of Planned Behaviour (TPB) extends from Ajzen and Fishbein's (1980) theory of reasoned action (TRA). TPB has become one of the dominant theories applied in a diverse area of behavioural studies (Shaw & Shiu, 2000). The theory asserts that attitude towards behaviour, subjective norms and behavioural control will collectively lead to the formation of behavioural intention (Ajzen, 1985). Attitude towards the behaviour (AT) refers to the degree by which a person has a favourable/ unfavourable evaluation of the behaviour of his/her interest. Subjective norms (SN) is defined as the perceived social pressure to perform/not to perform the behaviour while perceived behavioural control (PBC) is defined as the perception of the ease/difficulty in conducting the behaviour that resulted from the existence or absence of the required resources and opportunities.

Over the years, TPB has been validated and found to be useful in understanding and predicting human behaviours in various studies (Husin & Alrazi, 2017; Warsame & Ireri, 2016; Kovac, Cameron, & Høigaard, 2016). Within the context of finance literature, Gopi and Ramayah (2007) used the theory to predict Malaysian investors' intention to trade online and to establish the relationships between attitude towards behaviour, social norms and perceived behavioural control. In a more recent study, Adam and Shauki (2014) illustrated a positive association between attitude, subjective norms, moral norms and the behavioural intention of socially responsible investors in Malaysia. Focussing on Singapore, Lee-Partridge and Ho (2003) examined the acceptance of Internet stock trading among investors. They found that attitude and social factors are the significant predictors of behavioural intention. From their survey, Mahastanti and Hariady (2014) detected that the intention of female lecturers of an Indonesian university to purchase financial products was influenced by their perceived behavioural control and risk preferences. However, the study did not provide substantial evidence to establish the relationship between subjective norms, attitude and behavioural intention. Overall, previous studies looking at financial behaviours have adapted the TPB to predict financial behaviours but little attention has been given to the context of India. While much literature has shown the applicability of the TPB in various contexts, it remains unclear how this model can be adopted in the Indian environment. Individual investors in India may react differently due to different economic settings and information asymmetries. Investors are unique and highly heterogeneous in nature, thus individual investors from different countries may experience distinct psychological and emotional biases which could influence their perception of risks. Subsequently, this will also affect their investment decision making. This study aims to deliver a better understanding of the investors' investment decision making in the context of India. This is accomplished by uncovering the existence of differences that prevail in the investment decision patterns of Indian investors who also come from different economic settings and different levels of national industrialisation.

2.1.1 Attitude towards Investment and Behavioural Intention to Invest in Stock Market

Attitude is defined as a psychological and cognitive behaviour which individuals exhibit by assessment of any particular element with some degree of favourableness or unfavourableness (Eagly & Chaiken, 1993). Attitude helps an individual to decide whether a particular action should be taken or not by considering its negative and positive consequences. In this regard, behavioural intention depends on the positive or negative assessment of the individual towards a specific behaviour. The more positive an individual's attitude is, the stronger is his/her behavioural inclination. Conversely, the more negative the attitude is, the weaker the individual's behaviour inclination gets.

Existing research (Wood & Zaichkowsky, 2004; Fünfgeld & Wang, 2009) has shown that attitude towards risk is linked to investment behaviour. These studies (Wood & Zaichkowsky, 2004; Fünfgeld & Wang, 2009) found that people with different risk intolerant levels treat risks differently. This will result in different investment behavioural intentions. Investors who are risk-averse may choose to deposit their money into a bank account with a low but guaranteed interest rate instead of into a stock with high expected returns but involves high chances of losing value.

Other studies done by Kaiser, Oerke and Bogner (2007) and Dickson (2000) observed that investors' behaviours are more predictable when their attitude towards a particular financial product is known. These researchers have advocated attitude to be a factor that can influence the intention of an investor in making a choice for the wealth management services. Previous studies (Mandell & Klien, 2007; Borden, Lee, Serido & Collins, 2008) have also reported that there is a positive relationship between attitude and the individuals' behavioural intention in the context of financial decision making. Based on the findings and arguments, this study hypothesises that:

H_1: Individuals' attitude towards investment is positively related to the behavioural intention to invest in the stock market.

2.1.2 Subjective Norms and Behavioural Intention to Invest in Stock Market

Subjective norms refer to the individuals' perceptions on how they would be viewed by their reference groups if they engaged in certain behaviours (Cialdini & Trost, 1998). Subjective norms can also be defined as the perceived social pressure to perform/not to perform a certain behaviour in a particular situation (Ajzen, 1991). The influence of subjective norms in decision making is the result of the normative expectations of close family members, relatives and friends (Cavazos, 2013). Several researchers (e.g. Sharma & Gupta, 2011; Croy, Gerrans, & Speelman, 2012; Koropp, Kellermanns, Grichnik, & Stanley, 2014) have studied the influence of subjective norms in the area of financial investment. They found subjective norms to be a considerable influential factor affecting the investors' investment decision making; and investors with less financial knowledge often rely on the suggestions of family members, relatives and close friends when making investment decisions.

Hong, Kubik, and Stein (2004) also highlighted that elements such as relationships with neighbours and church visits can work as a proxy of sociability. These elements foster the individuals' stock market participation. The study also proposed that social investors are more attracted towards investment when more of their peers participate in the stock market. Hence, social norms can be described as a change of thinking that is reflected on an individual's behaviour due to his/her relationship with others. This implies that even though an individual may not have a constructive attitude towards investment, the incongruence between his/her attitude and family or friends' expectations, may influence the individual's behavioural intention. These respective individuals may pursue in stock market investments so as to ensure legitimacy since they may be looking for balance between their actions and others' perceptions. Based on these arguments, this study hypothesises that:

> H_2: Subjective norm is positively related to the behavioural intention to invest in the stock market.

2.1.3 Perceived Behavioural Control and Stock Market Intention

Perceived behavioural control refers to the individual's perception of the ease/difficulty of performing the behaviour of interest (Ajzen, 1991). In this study, perceived behavioural control refers to the individual investor's perception of the ease/difficulty of investing in the Indian stock market. Studies (e.g. Lin, 2010; Gopi & Ramayah, 2007; Blanchard et al., 2008) have been conducted in various contexts and there are adequate empirical evidences to show that perceived behavioural control has a significant impact on behavioural intention. In the context of financial decision making, Mahastanti and Hariady (2014) suggested that perceived behavioural control can be the only significant predictor for the investors' intention to invest in the stock market. The researchers found that when an individual has the opportunity and ability to invest in the stock market, he/she will then be motivated to perform these actions. In another study, Phan and Zhou (2014) found that the element of behavioural control can be used to explain Vietnamese investors' behaviours in the stock market of Vietnam. They further highlighted that past experiences, information acquired from relatives, family and friends and the availability of resources, all can help to control the perceived ease of difficulty in investment behaviours. Based on the argument of the studies discussed, this study hypothesises that:

H_3: Perceived behavioural control is positively related to the behavioural intention to invest in the stock market.

2.1.4 Past Behavioural Biases, Attitude toward Behaviour and Stock Market Intention

The Theory of Planned Behaviour (TPB) has been contested for its claim that attitude, subjective norms and perceived behavioural control are the sole predictors of intention behaviours. Some scholars (e.g. Botetzagias, Dima & Malesios, 2015; De Leeuw, Valois, Ajzen & Schmidt, 2015) have also illustrated that behavioural intentions are determined by other variables such as moral norms. Other scholars (e.g. Ekpe, Mohamad, Mat, & Simpong, 2016) found that behavioural intentions are also determined by socio-cultural influence and self-identity (Shaw & Shiu, 2013). While the extension to the TPB theory had improved the understanding and prediction of behaviour, previous studies noted above had assumed that behaviour is guided by reasoned considerations. When considering many behaviours related to investment behavioural intention, the research that is guided by the TPB seems to ignore one important aspect which is the repetitive nature of mankind. An individual who is performing a given behaviour may likely use his/her previous experience of that behaviour to perform a present behaviour. Thus, in the context of investment behaviour, decisions to invest in stock markets and investors' attitude towards investment may be influenced by the experiences gained from previous investment decision. Based on this argument, past behavioural biases are incorporated into the TPB model as an additional element for measure.

Generally, past behaviour can be referred to as an action or reaction of a person in response to any stimuli in the past. Aarts, Verplanken, and Knippenberg (1998) argued that "because of frequent performance in similar situations in the past, these mental representations and the resulting action can be automatically activated by environmental cues" (p. 1359). An individual maintains his/her behaviour in a unique way and this can lead to behavioural biases. Many types of behavioural biases exist and they can be applied for investigating behaviour. Cognitive biases which are referred to as the tendencies to think and act in particular ways is one example of behavioural biases. Cognitive biases can lead to systematic deviations from a good judgement thereby, resulting in irrational decisions. Literature (Fiedler, 2016; Meiser & Hewstone, 2006) has revealed that cognitive biases lead to illusionary correlations which allow people to overestimate the extent of the correlation between two distinct variables. In addition, cognitive biases may also be related to the individual's tendency to allow a typical past behaviour to exert biased decisions on future behaviours (Morewedge & Todorov, 2012). In this study, past behavioural biases are examined in the form of cognitive biases. These are represented by anchoring, representativeness and availability biases. Anchoring occurs when a person experiences something and makes it as a referral point (anchor) to make a subsequent decision. Representativeness is a cognitive bias where an individual categorises situations on the basis of the patterns of past experiences, under the condition of uncertainty. Finally, the availability bias is termed as a cognitive error in decision making when a person relies on the readily available information in his/her mind rather than examining the whole circumstances. Based on the arguments, this study hypothesises that:

H_4: Past behavioural bias is positively related to the attitude of investors towards investment.

H_5: Past behavioural bias is positively related to the behavioural intention to invest in the stock market.

Based on the literature review and the hypotheses formulated, a research framework was developed for this study, as shown in Figure 1.

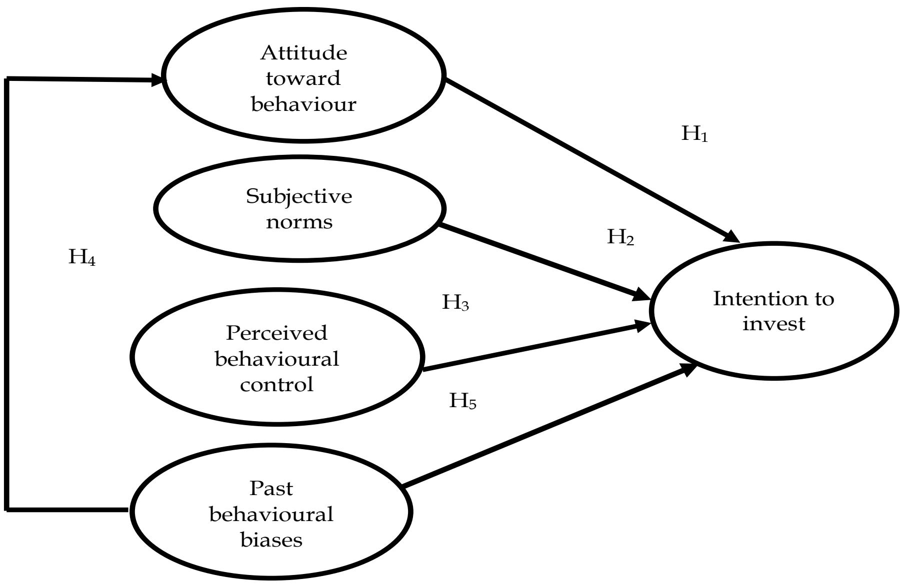

Figure 1: Research Model

3. Methodology

3.1 Operationalisation

This study employed a questionnaire survey to test the conceptual model and the hypotheses developed. As indicated in Table 1, the measurement used in this study were adapted from prior literature. In an effort to reduce the measurement bias, multiple items were used to measure each construct in this study (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Respondents were asked to answer questions based on the 5-point Likert scale. In order to ensure that the measurements utilised in this study satisfy the content validity, the questionnaire was also pre-tested with three fund managers, two experienced investors and two academicians. The reviewers were required to uncover any flaws in the questionnaire design and to assess whether the measurement items used correspond with the construct of interest. Feedback from the reviewing process is incorporated into the questionnaire as a revision. Based on the reviewing process, no major changes were made. Following this, a pilot study involving 40 experienced individual investors was conducted. Reliability analysis was made; and Cronbach's

Table 1: Measurement of Constructs and Their Sources

Constructs	Measurement Variables	Sources
Attitude	AT1. Investment in stock market is a good idea. AT2. Investing in stock market is a wise choice. AT3. I like the idea to invest in stock market.	Chen (2007); Taylor and Todd (1995)
Subjective norms	SN1. My colleagues and friends are investing in stock market. SN2. Those who have important influence on me think that I should invest in stock market. SN3. People whose opinion I value would prefer that I should invest in stock market.	Taylor and Todd (1995)
Perceived behavioural control	PBC1. I know where to buy stocks. PCB2. I can identify profitable stocks easily. PCB3. I can invest in favourable stocks conveniently.	Taylor and Todd (1995); Bansal and Taylor (2002)
Past behavioural biases	PBB1. Past performance of stock affects present investment decision. PBB2. For an investment, whose historical performance has been consistently excellent, I will treat it as important. PBB3. Available information is enough for making investment decision. PBB4. Investing in the companies with poor earning history should be avoided. PBB5. Good stocks are firms with past consistent earnings growth.	Bloomfield and Hales (2002); Kaustia, Conlin and Luotonen, (2018).
Intention to invest	IID1. I will invest in stock market frequently. IID2. I will encourage my friend and family to invest in stock market. IID3. I will invest in stock market in near future.	Chen (2007)

alpha values of all the five constructs were noted to be above 0.7, indicating a good internal reliability.

3.2 Sample and Data Collection

The unit of analysis for this study is individual. This study targeted experienced individual investors who were working in eleven financial institutions that were located in four different states namely, Jharkhand, Bihar, Orissa and West Bengal. The respondents were drawn from a population of 700 individual investors by using the consecutive sampling approach where every subject in the population was selected until the required sample size was achieved. They were approached with the help of fund managers of the 11 financial institutions. Of the 700 questionnaires distributed, 550 were returned, resulting in a 75.7 per cent response rate. Of these numbers, only 396 responses were suitable and valid thereby considered for further analysis. Table 2 depicts the demographic profiles of the respondents. The results revealed that

Table 2: Demographic Profile of Respondents (n=396)

Variables	Category	Frequency	Percentage
Gender	Male	289	73
	Female	87	27
Age	<20	0	0
	20-30	130	33
	31-40	148	37
	41-50	82	21
	>50	36	9
Marital status	Married	278	72
	Unmarried	118	28
Education	< High School	19	5
	High School	13	3
	Diploma	9	2
	Bachelor’s Degree	197	50
	Post Graduate	158	40
Annual income (in Rupees)	<200000	78	20
	200000–300000	23	6
	300000–500000	158	40
	>500000	137	34

majority of the respondents were males, aged between 31-40 years old and they possessed a bachelor's degree, with an annual income of between 300,000 to 500,000 rupees.

4. Analysis and Findings

This study employed structural equation modelling (SEM) by using the Analysis of Moment Structures (AMOS) as the primary data analysis technique. The usefulness of the SEM lies in its capacity to test the entire model and to assess the measurement errors, simultaneously (Schumacker & Lomax, 2012). This is particularly important if the errors are sizeable (Byrne, 2001). These characteristics have made SEM a powerful tool which has rigorous techniques that are capable of dealing with complex models (Tabachnick & Fidell, 2007; Hair, Anderson, Tatham, & Black, 1998). Given these considerations, the SEM was therefore, employed as a primary data analysis technique. In line with Anderson and Gerbing (1988), this study also used a two-model estimation technique such that a confirmatory factor analysis was first conducted before it is followed by a structural model analysis. This approach is better in facilitating the identification of the source of a poor model fit. Prior to the primary data analysis process, data were screened and examined to ensure that the assumptions about the data (e.g. sample size, missing variables, outliers and normality) were not violated. The descriptive analysis indicated that the percentage of missing data was 0.6 per cent with the data missing randomly. The missing data were then replaced with "regression imputation" (Lynch, 2003). Six responses were deleted due to the violation of outliers as they exceeded the threshold value of 1 (Stevens, 2012). The values of skewness and kurtosis were less than the threshold value, indicating that the data distribution was normal.

4.1 Measurement Model

A measurement model comprising all the construct of interests was evaluated. This study conducted convergent and discriminant validity tests to ensure that the measurements were in agreement and do not reflect other variables (Hair, Hult, Ringle, & Sarstedt, 2013). Convergent validity was examined based on factor loadings, composite reliability and the average variance extracted (AVE).

As illustrated in Table 3, all the variables had composite reliability ranging from 0.846 to 0.917, which exceeded the recommended values

Table 3: Result of Measurement Model: Convergent Validity

Constructs	Items	Factor Loading	Cronbach's Alpha Extracted	Composite Reliability	Average Variance
Attitude towards investment (ATI)	AT1	0.890	0.838	0.846	0.650
	AT2	0.820			
	AT3	0.700			
Subjective norms (SN)	SN1	0.910	0.916	0.917	0.787
	SN2	0.830			
	SN3	0.920			
Perceived behavioural control (PCB)	PCB1	0.720	0.847	0.850	0.655
	PCB2	0.860			
	PCB3	0.840			
Past behavioural biases (PBB)	PBB1	0.840	0.907	0.907	0.663
	PBB2	0.880			
	PBB3	0.840			
	PBB4	0.730			
	PBB5	0.770			
Intention to invest (IID)	IID1	0.880	0.856	0.859	0.671
	IID2	0.840			
	IID3	0.730			

of 0.7. In addition, the AVE of these constructs achieved the cut-off point of 0.5 (Hair et al., 2013). All the items loaded significantly with a factor loadings value of more that 0.6 (Bagozzi & Yi, 1988). These results demonstrate the convergent validity of the measures used.

In this study, discriminant validity was tested through the Hair et al. (2013) approach. All the scales appear to have a substantial-ly higher AVE value when compared to their correlation with other constructs thereby providing evidence of discriminant validity (Table 4).

The results of the measurement model indicate that various validity and reliability criteria are satisfactory. Therefore, constructs developed in this measurement model could be used to test the structural model and the associated hypotheses.

4.2 Structural Model

The results of the structural model are tabulated in Table 5 and depicted in Figure 2. The data fit the model well, χ^2/df (213.73) = 21.89; p=.19. All

Table 4: Correlation among the Constructs

Constructs	PBB	AT	SN	PBC	IID
PBB	**0.814**				
ATI	0.369	**0.806**			
SN	0.048	0.070	**0.887**		
PBC	0.181	0.234	0.108	**0.809**	
IID	0.520	0.645	0.182	0.388	**0.819**

Note: Bold values represent the square root of AVE. PBB: Past behavioural biases, ATI: attitude towards investment, SN: Subjective norms, PBC: Perceived behavioural control, IID: Intention to invest.

Table 5: Result of structural model and hypothesis testing

Path	B	t-value	Hypotheses	Results
ATI→IDD	0.50	9.447*	H_1	supported
SN→IDD	0.12	2.833**	H_2	supported
PBC→IDD	0.23	5.040*	H_3	supported
PBB→IDD	0.32	6.423*	H_5	supported
PBB→ATI	0.37	6.707*	H_4	supported

Note: ATI = attitude toward investment, SN = social norms, PBC = perceived behavioural control, PBB = past behavioural bias, IDD = intention to invest; ** denotes p<.001, * denotes p<0.05.

the fit indices were above the recommended threshold values (GFI=.94, TLI=.97, CFI=.97, RMSEA=.05) (Bagozzi & Yi, 1998), further indicating a parsimonious model. The model explained 53 per cent and 14 per cent of the variance in attitude towards investment and intention to invest respectively.

As can be seen, the result shows a good fit of all the accepted criteria required for the goodness of fit statistics since it fell under the acceptable value. Attitude towards investment (β=.50; t=9.447; p<.05), subjective norms (β=.12; t=2.833; p<.001), perceived behavioural control (β=.23; t=5.04; p<.05) and past behavioural bias (β=.32; t=6.42; p<.05) had significant relationships with intention to invest in stock market. Thus H_1, H_2, H_3 and H_5 were supported. Results also showed that past behavioural bias is positively related to attitude toward investment (β=0.37, t = 6.707, p< .01), hence supporting H_4.

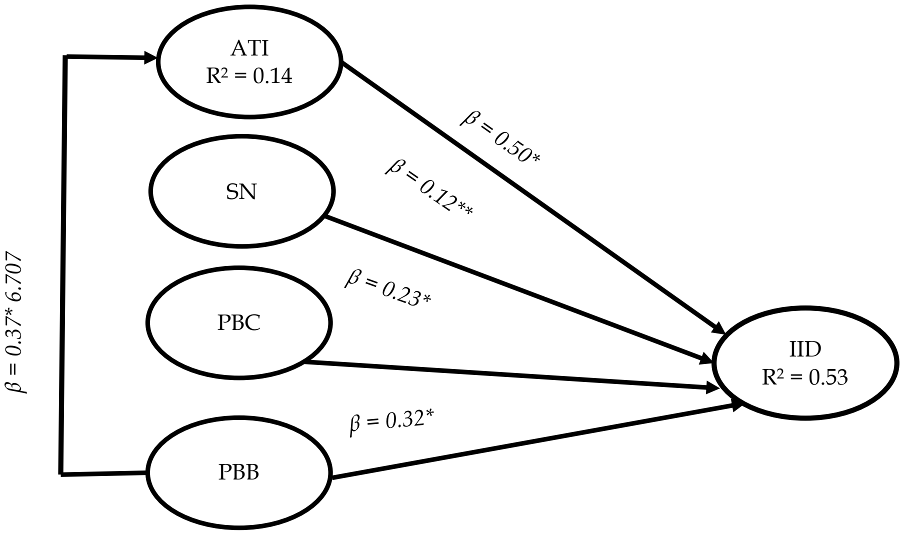

Figure 2: Structural Model Analysis

Note: PBB: Past behavioural biases, ATI: attitude towards investment, SN: Subjective norms, PBC: Perceived behavioural control, IID: Intention to invest.

5. Discussion

Building on the Theory of Planned Behaviour (TPB), this study aims to provide insights into the behavioural decision making process of individual investors in the Indian capital market. Unlike previous empirical works that also applied the same theory of TPB, the current study extends on the theoretical model by incorporating past behavioural biases as an element for examining investors' intention to invest in the stock market. The results show that the TPB seems to be very applicable to be used in determining the investment behaviour in the context of the Indian capital market. The explanatory power of the model increased from 44 per cent to 53 per cent thereby providing support for the addition of a new construct namely, past behavioural bias, into the research model. The outcome derived from this study illustrates that attitude towards investment, social norms, perceived behavioural control and past behavioural bias influenced the Indian investors' decision making.

Similar with previous studies (Wood & Zaichkowsky, 2004; Fünfgeld & Wang, 2009), this study found that attitude towards investment is the most significant predictor for intention to invest. This finding indicates that all the investment activities of the individual investors were most likely to be determined by themselves, guided by their own attitudes. Indian investors who can afford to lose and are willing to take financial risks would have favourable attitudes toward investment and are more likely to invest. This result is not surprising since there are very few anecdotal studies that have reported on the various trainings and education programmes provided by the Securities and Exchange Board of India (SEBI) and the Association of Mutual Funds in India (AMFI). To some extent, these trainings and programmes may have increased the level of the investors' awareness and knowledge on various investment strategies and risk minimisation techniques (Jain, 2012; Kavitha, 2015). This situation may possibly help to instil a positive attitude among the investors in the country. They may have seen investment as a profit making activity for their future, hence they were further encouraged to have a positive behavioural intention towards investment.

The findings of this study also indicate that subjective norm was a significant predictor for behavioural investment intention. There was evidence of the substantial impact of social pressures among Indian investors too. Since India is a collectivistic society, where people do not want to be isolated from the societal group but aspire to gain an in-group identity, such outcomes were expected. The outcome of this study also shows that in the case of stock market investments, individuals intend to follow the opinion of others who they think are important. There is a higher chance that these individuals would not perform a certain action if those important persons do not agree with a particular investment action. This finding can be attributed to the social pressures that are exerted by the reference group members (friends and family) which are also likely to cause a specific behaviour (Kashif, Zarkada, & Ramayah, 2016; Shahriar & Polonsky, 2013). It is important to note that India has a joint family system which increases the number of family members as the family expands through marriages (Kaur & Kaushik, 2016; Kothari & Mindargi, 2013). In this system, younger family members commonly seek the advice of their older family members before they embark on certain decision making (Gill, Biger, Mand, & Gill, 2011). In this regard, family cultures may play a dominant role in the respective individual's investment decisions. Based on this, it is possible that the individual investors of the Indian capital market are likely to observe other behaviours when making investment decision. Besides taking the advice of their elders, they may also act as a result of the mutual imitation of other investors. They may also have an increased perception of their self-confidence because of the conversation held with these people and through the persuasion of these key people. This phenomenon makes it difficult for the respective individual investors to distinguish between what is relevant and irrelevant information regarding the investment (Pascual-Ezama, Scandroglio, & Gil-Gomez de Liaño, 2014). As a result, this can lead to inconsistency in making their own judgment as well as irrational decision making (Chen, Rui, & Xu, 2003).

In this study, perceived behavioural control was found to be a significantly influencing factor for the investment decision process in the stock market of India. This outcome signifies that the level of financial knowledge, investment experience and resources like time, money and other peoples' cooperation, can affect the individual investor's investment decision making process. These findings are in line with the findings of previous studies (e.g. Mathieson, 1991; Shih & Fang, 2004; Fu, Farn, & Chao, 2006) which have accounted for a considerable positive link between perceived behavioural control and intention. This result is expected, given that more than 50 per cent of the samples were males. Previous studies looking at the investment patterns in India have recorded that males tend to have higher experiences and confidence in making investments (Arti, Sunita, & Julee, 2011). Hence, it is plausible that the investors in the current samples have engaged in investment activities longer, and so are more inclined to having a better experience which subsequently, allow them to gain more control over their behaviour. This would lead to their positive behavioural intention.

Further, this study also finds that past behavioural biases, which have been incorporated into the original TPB can be used to analyse the impact of cognitive biases (in terms of anchoring, representativeness and availability). It clearly plays a significant role towards investment attitude and intention. The variable, in particular, has shown a prominent impact as it makes a significantly higher contribution of 31.5 per cent to the exploratory power of the proposed theoretical model. This indicates the importance of past behaviours for determining the individuals' intention to invest in the stock market. In this regard, the findings indicate that individuals who depend on past behaviours are more likely to engage in cognitive biases which allow their typical past behaviour to exert a biased decision on their future behaviours. Past studies (e.g. Trehan & Sinha, 2011) have documented that experienced Indian investors tend to be overconfident about their knowledge and ability to pick up stocks. They commonly take credit for their previous successes assuming that they have full control over their portfolio. The tendency of Indian investors to overestimate their abilities, their precision of information and knowledge may lead them to be too confident about their decision. This may affect their investment behaviour which may sometimes backfire, causing harm to the investors' portfolio.

6. Conclusion and Implication

This research had set out to contribute to the body of literature in many ways. Firstly, this study extended on the knowledge of the behavioural aspects of individual investment rather than adhering to fundamental or traditional approaches. While there are studies highlighting the investment behaviour of Indian investors, these were mainly focussed on demographic factors. It remains unclear how the socio-psychological aspects can influence the investment behaviour of investors in the Indian context. Taking into consideration the theory of irrationality, this study is able to demonstrate that investors in the Indian capital market do not act in a purely rational manner. In fact, their investment decisions can be influenced by a number of other psychological biases.

Secondly, this study extended the TPB model by incorporating a new construct, past behavioural biases as a new construct to be used as a proxy to analyse the impact of anchoring, representativeness and availability biases. When considering the many behaviours related to investment behavioural intention, this study was also guided by the TPB although it seems to have overlooked one important aspect, the repetitive nature of human beings. It is deduced that an individual performing a given behaviour may likely use his/her past experiences of that behaviour as a model to behave. In the context of investment behaviour, the individual's decision to invest in the stock market and the individual's attitude towards investment may be influenced by the experiences gained from previous investment decisions. The results of this study suggest that the impact of PBB is not only significant for the investment intention, it is also significant for the formation of the attitude towards investment decision. It was observed that the behaviour that can be performed quickly, relatively effortlessly with minimum or sporadic attention can influence the future behaviour of the individual. Therefore, it is argued that future decisions on the individual's course of action and the individual's subsequent execution, were primarily guided by a reference point or an anchor (anchoring bias), information or events that had more resemblance with the present scenario (representativeness bias) and readily available information in the minds of people (availability bias). Hence, this study provides a reference to the importance of PBB for explaining investment behaviour. This study also contributes to the field of behavioural finance by enriching literature with findings relevant to the Indian context. This study opens the scope for other studies to experiment with more financial market biases by working together with various behavioural models such as the TPB.

This paper also benefits practitioners. The insight on how an investment choice gets affected by the psychological variables can assist the financial advisors to advise their clients better. Many new instruments and schemes that could instil favouritism among the investors and which suit their needs, should be introduced to the public. Despite the importance of the social circle in influencing investment behaviour in the Indian capital market, it is imperative for the financial institutions to adopt a broader advertising strategy so as to create more awareness about the various channels of investments. A constant effort to promote the investment behaviour is essential as this would permit the investors to obtain higher levels of financial knowledge that would likewise facilitate their investment decision making process. This possibility is also seen as a good means to help investors to reduce irrational decision making levels. The clients, on a similar note, would appreciate the advice that suit their profile. While much of the economic and financial theories suggest that individuals act rationally, this study had shed some light which showed why people invest or do not invest in certain stocks. Despite that finding, many investors would desire to be rational by seeking advice from professionals before trading. It seems clear that individual investors are not emotionless creatures. Their choices can be affected by their emotions and they tend to use some heuristics in order to reduce the mental efforts and to ease the decision process. Realising this issue, it is thus important for the fund managers to consider behavioural biases in risk modelling where individual emotions can play a role in decision making.

Our findings also revealed that behavioural biases are inseparable from human beings' decision making. Hence, it is important for the investors to be aware of this issue so that irrational decision making can be avoided, and profitable investment strategies can be sought. As the financial market can appear to be the prominent segment where investors lose their hard-earned money due to socio-psychological factors, it is essential for them to understand these biases. This would help them to be more aware of the existence and impact of irrational investment decisions. This would eventually prevent them from falling into the psychological trap when participating in the capital market. Investors who are more aware of the elements that may interfere with their behaviour and how the behaviour may occur, will be more precautious in making judgements.

Whilst this study extends on the previous literature on behavioural finance in India, it also carries some limitations. First, since this study was conducted only in the eastern region of India, there may be certain characteristics of the individuals that might not apply to other parts of India or other emerging markets. Therefore, it reduces the generalisability of the findings. Second, this study is only based on a single theory thus, there might be some other factors that have not been considered. It would be interesting if future research could incorporate the self-determination theory for the same purpose of examining behavioural intentions since this is seen to be helpful in gaining more in-depth findings on cognitive processes. Despite these limitations, it is believed that this study also offers some important implications for behavioural finance research from the view of an emerging economy, specifically, India.

References

Aarts, H., Verplanken, B., & Knippenberg, A. (1998). Predicting behavior from actions in the past: Repeated decision making or a matter of habit? *Journal of Applied Social Psychology, 28*(15), 1355-1374. http://dx.doi.org/10.1111/j.1559-1816.1998.tb01681.x

Adam, A., & Shauki, E. (2014). Socially responsible investment in Malaysia: Behavioral framework in evaluating investors' decision making process. *Journal of Cleaner Production, 80*(October), 224-240. http://dx.doi.org/10.1016/j.jclepro.2014.05.075

Ajzen, I. (1985). *From intentions to actions: A theory of planned behaviour*. Berlin Heidelberg: Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior And Human Decision Processes, 50*(2), 179-211. http://dx.doi.org/10.1016/0749-5978(91)90020-t

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. http://dx.doi.org/10.1037//0033-2909.103.3.411

Arti, G., Sunita, S., & Julee, A. (2011). Difference in gender attitude in investment decision making in India. *Research Journal of Finance and Accounting, 2*(12), 1-7.

Bagozzi, R.P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94. http://dx.doi.org/10.1007/bf02723327

Bansal, H., & Taylor, S. (2002). Investigating interactive effects in the theory of planned behavior in a service-provider switching context. *Psychology and Marketing, 19*(5), 407-425. http://dx.doi.org/10.1002/mar.10017

Bernstein, P.L. (1998). *Against the gods: The remarkable story of risk*. New York, NY: John Wiley and Sons Inc.

Blanchard, C., Fisher, J., Sparling, P., Nehl, E., Rhodes, R., Courneya, K., & Baker, F. (2008). Understanding physical activity behavior in African American and Caucasian college students: an application of the theory of planned behavior. *Journal of American College Health, 56*(4), 341-346. http://dx.doi.org/10.3200/jach.56.44.341-346

Bloomfield, R., & Hales, J. (2002). Predicting the next step of a random walk: Experimental evidence of regime-shifting beliefs. *Journal of Financial Economics, 65*(3), 397-414. http://dx.doi.org/10.1016/s0304-405x(02)00147-2

Borden, L.M., Lee, S.A., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues, 29*(1), 23-40. http://dx.doi.org/10.1007/s10834-007-9087-2

Botetzagias, I., Dima, A., & Malesios, C. (2015). Extending the theory of planned behavior in the context of recycling: The role of moral norms and of demographic predictors. *Resources, Conservation and Recycling, 95*, 58-67. http://dx.doi.org/10.1016/j.resconrec.2014.12.004

Byrne, B.M. (2001). *Structural equation modelling with amos: Basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.

Cavazos, A. (2013). Financial literacy and professional mission. *CFA Institute Magazine, 24*(3), 13-13. http://dx.doi.org/10.2469/cfm.v24.n3.5

Chen, G., Rui, O.M., & Xu, Y. (2003). When will investors herd? Evidence from the Chinese stock markets. *Journal of Financial Research, 37*, 2-40.

Chen, M.F. (2007). Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits. *Food Quality and Preference, 18*(7), 1008-1021. http://dx.doi.org/10.1016/j.foodqual.2007.04.004

Cialdini R.B., & Trost, M.R. (1998). Social influence: Social norms, conformity, and compliance. In D.T. Gilbert & S.T. Fiske (Eds.), *The handbook of social psychology* (4th edition, pp. 151-192). Boston: McGraw-Hill.

Chittedi, K.R (2014). Financial development and instability: A theoretical perspective. *Journal of Stock and Forex Trading, 3*(3) 1-5. http://dx.doi.org/10.4172/2168-9458.1000123

Croy, G., Gerrans, P., & Speelman, C. (2012). Normative influence on retirement savings decisions: Do people care what employers and the government want? *Australian Journal of Psychology, 64*(2), 83-91. http://dx.doi.org/10.1111/j.1742-9536.2011.00029.x

De Leeuw, A., Valois, P., Ajzen, I., & Schmidt, P. (2015). Using the theory of planned behavior to identify key beliefs underlying pro-environmental behavior in high-school students: Implications for educational interventions. *Journal of Environmental Psychology, 42*, 128-138. http://dx.doi.org/10.1016/j.jenvp.2015.03.005

Dickson, M. (2000). Personal values, beliefs, knowledge, and attitudes relating to intentions to purchase apparel from socially responsible businesses. *Clothing and Textiles Research Journal, 18*(1), 19-30. http://dx.doi.org/10.1177/0887302x0001800103

Eagly, A.H., & Chaiken, S. (1993). *The psychology of attitudes*. San Diego, CA: Harcourt Brace Jovanovich College Publishers.

Ekpe, I., Mohamad, M.R., Mat, N., & Simpong, D.B. (2016). Socio-political influence and youth's leadership participation in Malaysia: A conceptual model extending TPB. *Mediterranean Journal of Social Sciences, 7*(3 S1), 222-228. http://dx.doi.org/10.5901/mjss.2016.v7n3s1p222

Fama, E. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance, 25*(2), 383. http://dx.doi.org/10.2307/2325486

Fiedler, K. (2016). Functional research and cognitive-process research in behavioral science: An unequal but firmly connected pair. *International Journal of Psychology, 51*(1), 64-71. http://dx.doi.org/10.1002/ijop.12163

Fu, J., Farn, C., & Chao, W. (2006). Acceptance of electronic tax filing: A study of taxpayer intentions. *Information and Management, 43*(1), 109-126. http://dx.doi.org/10.1016/j.im.2005.04.001

Fünfgeld, B., & Wang, M. (2009). Attitudes and behaviour in everyday finance: Evidence from Switzerland. *International Journal of Bank Marketing, 27*(2), 108-128. http://dx.doi.org/abs/10.1108/02652320910935607

Gill, A., Biger, N., & Mand, H.S., & Gill, S.S. (2011). Factors that affect mutual fund investment decision of Indian investors. *International Journal of Behavioural Accounting and Finance, 2*(3-4), 328-345. http://dx.doi.org/10.1504/IJBAF.2011.045020

Gopi, M., & Ramayah, T. (2007). Applicability of theory of planned behavior in predicting intention to trade online: Some evidence from a developing country. *International Journal of Emerging Markets, 2*(4), 348-360. https://doi.org/10.1108/17468800710824509

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis* (5th Edition). Upper Saddle River, NJ: Prentice Hall.

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2013). A primer on partial least squares structural equation modelling (PLS-SEM). Thousand Oaks, CA: Sage Publications.

Hong, H., Kubik, J. D., & Stein, J. C. (2004). Social interaction and stock-market participation. *The Journal of Finance, 59*(1), 137-163. https://doi.org/10.1111/j.1540-6261.2004.00629.x

Husin, N., & Alrazi, B. (2017). Renewable energy investment in Malaysia: An integrated model in evaluating public decision making process. *Journal of Clean Energy Technologies, 5*(4), 343-346. http://dx.doi.org/10.18178/jocet.2017.5.4.395

Jain, R. (2012). Investor's attitude towards secondary market equity investments and influence of behavioral finance. *International Journal of Emerging Technologies, 3*(2), 67-79.

Kaiser, F.G., Oerke, B., & Bogner, F.X. (2007). Behavior-based environmental attitude: Development of an instrument for adolescents. *Journal of Environmental Psychology, 27*(3), 242-251. http://dx.doi.org/10.1016/j.jenvp.2007.06.004

Kashif, M., Zarkada, A., & Ramayah, T. (2016). The impact of attitude, subjective norms, and perceived behavioural control on managers' intentions to behave ethically. *Total Quality Management and Business Excellence, 29*(5-6), 481-501. http://dx.doi.org/10.1080/14783363.2016.1209970

Kaur, I., & Kaushik, K.P. (2016). Determinants of investment behavior of investors towards mutual funds. *Journal of Indian Business Research, 8*(1), 19-42. http://dx.doi.org/10.1108/JIBR-04-2015-0051

Kaustia, M., Conlin, A., & Luotonen, N. (2018). *What drives the heterogeneity in portfolio choice? The role of institutional, traditional, and behavioral factors*. Retrived from https://ssrn.com/abstract=2845963.

Kavitha, C. (2015). Investors attitudes towards stock market investment. *International Journal of Scientific Research and Management, 3*(7), 3356-3362.

Kidwell, B., & Jewell, R. (2008). The influence of past behavior on behavioral intent: An information-processing explanation. *Psychology and Marketing, 25*(12), 1151-1166. http://dx.doi.org/10.1002/mar.20258

Koropp, C., Kellermanns, F.W., Grichnik, D., & Stanley, L. (2014). Financial decision making in family firms: An adaptation of the theory of planned behavior. *Family Business Review, 27*(4), 307-327. http://dx.doi.org/abs/10.1177/0894486514522483

Kothari, P.P., & Mindargi, S.C. (2013). A study of investors attitude towards mutual fund with special reference to investors in Solapur City. *Management Research (IJAFMR), 3*(2), 1-12.

Kovac, V.B., Cameron, D.L., & Høigaard, R. (2016). The extended theory of planned behavior and college grades: The role of cognition and past behavior in the prediction of students' academic intentions and achievements. *Educational Psychology, 36*(4), 792-811. http://dx.doi.org/10.1080/01443410.2014.923557

Kumar, S., & Goyal, N. (2016). Evidence on rationality and behavioural biases in investment decision making. *Qualitative Research in Financial Markets, 8*(4), 270-287. http://dx.doi.org/10.1108/qrfm-05-2016-0016

Kumar, S.P., & Rajkumar, S. (2014), Awareness and knowledge of mutual fund among the investors with special reference to Chennai: A critical study. *International Journal of Research and Development: A Management Review, 2*(4),1-4

Lee-Partridge, J.E., & Ho, P.S. (2003). *A retail investor's perspective on the acceptance of Internet stock trading*. Paper presented at the 36th Annual Hawaii International Conference on System Science, Hawaii. doi: 10.1109/HICSS.2003.1174437

Lin, H. (2010). Applicability of the extended theory of planned behavior in predicting job seeker intentions to use job-search websites. *International Journal of Selection and Assessment, 18*(1), 64-74. http://dx.doi.org/10.1111/j.1468-2389.2010.00489.x

Listyarti, I., & Suryani, T. (2014). Determinant factors of investors' behavior in investment decision in Indonesian capital markets. *Journal of Economics, Business, and Accountancy Ventura, 17*(1), 45-54. http://dx.doi.org/10.14414/jebav.v17i1.265

Lynch, S. (2003). Cohort and life-course patterns in the relationship between education and health: A hierarchical approach. *Demography, 40*(2), 309-331. http://dx.doi.org/ 10.2307/3180803

Mahastanti, L., & Hariady, E. (2014). Determining the factors which affect the stock investment decisions of potential female investors in Indonesia. *International Journal of Process Management and Benchmarking, 4*(2), 186-197. http://dx.doi.org/ 10.1504/ijpmb.2014.060407

Mandell, L., & Klein, L.S. (2007). Motivation and financial literacy. *Financial Services Review, 16*(2), 106-116.

Markowitz, H. (1952). Portfolio selection. *The Journal of Finance, 7*(1), 77-91. http://dx.doi.org/10.1111/j.1540-6261.1952.tb01525.x

Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research, 2*(3), 173-191. http://dx.doi.org/10.1287/isre.2.3.173

Meiser, T., & Hewstone, M. (2006). Illusory and spurious correlations: Distinct phenomena or joint outcomes of exemplar-based category learning? *European Journal of Social Psychology, 36*(3), 315-336. http://dx.doi.org/10.1002/ejsp.304

Morewedge, C., & Todorov, A. (2012). The least likely act: Overweighting atypical past behavior in behavioral predictions. *Social Psycholo-gical and Personality Science, 3*(6), 760-766. http://dx.doi.org/10.1177/1948550611434784

Olokoyo, F., Oyewo, B., & Babajide, A. (2014). Attitude of investors to capital and money market investments before and after financial crisis. *International Journal of Sustainable Economies Management, 3*(1), 53-64. http://dx.doi.org/ 10.4018/ijsem.2014010105

Pascual-Ezama, D., Scandroglio, B., & Gil-Gomez de Liaño, B. (2014). Can we predict individual investors' behavior in stock markets? A psychological approach. *Universitas Psychologica, 13*(1). http://dx.doi.org/10.11144/javeriana.upsy13-1.cwpi

Phan, C.K., & Zhou, J. (2014). Vietnamese individual investors' behavior in the stock market: An exploratory study. *Research Journal of Social Science and Management, 3*(12), 46-54.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903. http://dx.doi.org/10.1037/0021-9010.88.5.879

Prabhu, G., & Vachalekar, N.M. (2014). *Perception of Indian investor towards investment in mutual funds with special reference to MIP funds*. Paper presented at the 7th International Business Research Conference, India.

Sandberg, T., Hutter, R., Richetin, J., & Conner, M. (2016). Testing the role of action and inaction anticipated regret on intentions and behavior. *British Journal of Social Psychology, 55*(3), 407-425. http://dx.doi.org/10.1111/bjso.12141

Schiffman, L.G., & Kanuk, L.L. (2007). *Purchasing behavior*. Upper Saddle River, NJ: Prentice Hall.

Schumacker, R.E., & Lomax, R.G. (2012). *A beginner's guide to structural equation modeling*. New York, NY: Routledge.

Shahriar, F.A., & Polonsky, J.M. (2013). Predicting Bangladeshi financial salespeople's ethical intentions and behavior using the theory of planned behavior: Implications for developing countries. *Asia Pacific Journal of Marketing and Logistics, 25*(4), 655-673. http://dx.doi.org/10.1108/APJML-01-2013-0019

Sharma, M., & Gupta, S. (2011). Role of subjective norm in investment decision making of casual investors. *Indian Journal of Finance, 5*(11), 1-12.

Sharpe, W. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance, 19*(3), 425-442. http://dx.doi.org/10.1111/j.1540-6261.1964.tb02865.x

Shaw, D., & Shiu, E. (2013). The contribution of ethical obligation and self-identity to the theory of planned behaviour: An exploration of ethical consumers – A reflective comment. *Social Business, 3*(1), 47-65. http://dx.doi.org/ 10.1362/204440813x13645551141035

Shih, Y.Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research, 14*(3), 213-223. http://dx.doi.org/10.1108/10662240410542643

Simon, H. (1997). *Administrative behavior: A Study of decision-making processes in administrative organizations* (4th edition). New York: The Free Press.

Stevens, J.P. (2012). *Applied multivariate statistics for the social sciences* (5th ed.). New York, NY: Routledge.

Subramanya, P.R., & Murthy, R.P.R. (2013). Investors attitude towards mutual fund (special reference to Chikkamagalore district, Karnataka state, India) *International Journal of Management and Business Studies, 3*(1), 68-71.

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics*. Boston, MA: Allyn & Bacon/Pearson Education.

Taylor, S., & Todd, P. (1995). An integrated model of waste management behavior. *Environment and Behavior, 27*(5), 603-630. http://dx.doi.org/10.1177/0013916595275001

Tomer, J.F. (2016). Investments in human capital to remedy decision-making errors. In J.F. Tomer, *Integrating human capital with human development: The path to a more productive and humane economy*. New York, NY: Palgrave Macmillan.

Trehan, B., & Sinha, A.K. (2011). A study of existence of overconfidence biases among investors and its impact on investment decision. *Asia Pacific Journal, 11*(S), 1-15.

Tuyon, J., & Ahmad, Z. (2016). Behavioral finance perspectives on Malaysian stock market efficiency. *Borsa Istanbul Review, 16*(1), 43-61. http://dx.doi.org/10.1016/j.bir.2016.01.001

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*(4), 1124-1131. http://dx.doi.org/10.1126/science.185.4157.1124

Warsame, M., & Ireri, E. (2016). Does the theory of planned behaviour (TPB) matter in Sukuk investment decisions? *Journal of Behavioral and Experimental Finance, 12*, 93-100. http://dx.doi.org/10.1016/j.jbef.2016.10.002

Wood, R., & Zaichkowsky, J. (2004). Attitudes and trading behavior of stock market investors: A segmentation approach. *Journal of Behavioral Finance, 5*(3), 170-179. http://dx.doi.org/ 10.1207/s15427579jpfm0503_5

Wood, W., Tam, L., & Witt, M.G. (2005). Changing circumstances, disrupting habits. *Journal of Personality and Social Psychology, 88*(6), 918-933. http://dx.doi.org/10.1037/0022-3514.88.6.918

Antecedents of Consumer Attitude towards Blogger Recommendations and its Impact on Purchase Intention

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ABSTRACT

Manuscript type: Research paper.
Research aims: This study aims to fill in the literature gap by examining the relationship between various antecedent factors affecting consumer attitude towards blogger recommendations and their purchase intention.
Design/ Methodology/ Approach: A total of 384 questionnaires were collected and analysed using the partial least squares (PLS) approach.
Research findings: The results highlight the relationships existing between consumer attitude and the antecedent factors namely, perceived usefulness, trustworthiness, information quality and perceived benefits. The study also confirms the mediation role of consumer attitude towards blogger recommendations. Most importantly, consumer attitude towards blogger recommendations is found to have significant influence on consumer purchase intention.
Theoretical contributions/ Originality: This study provides a comprehensive empirical examination of the antecedent factors that contribute to consumer attitude towards blogger recommendations, previously examined by different researchers in separate studies. It is found that trustworthiness is the main factor contributing to consumer attitude towards blogger recommendations, followed by information quality, perceived usefulness and perceived benefits. Attitude towards blogger recommendations is found to have a strong

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impact on purchase intention; it also serves as a mediator between the antecedent factors and purchase intention.
Practitioner/ Policy implications: This study provides useful evidence which support the influential power of blogs as a type of effective integrated marketing tool. The findings also recommend some evaluation criteria for choosing and evaluating the effectiveness of blogger recommendations that influence consumer attitude and purchase intention. Overall, blogger recommendations have to be perceived as useful, trustworthy and carry good quality information before consumers can be influenced.
Research limitation: This study is constrained by limitations such as blog types and variables. Future research could be extended to include more diverse blog types, more contributing variables on attitude and a bigger geographical coverage.

Keywords: Blogger Recommendations, Consumer Attitudes, Information Quality, Purchase Intention, Trustworthiness.
JEL Classification: M31

1. Introduction

With a total of 18 million active users and a penetration rate of 59 per cent, social media in Malaysia enjoyed an encouraging seven per cent growth rate in the year 2016 (Kemp, 2016). As a popular platform for interactions, social media in Malaysia has managed to bridge millions of users across the globe with similar hobbies, interests as well as views (Ioanas & Stoica, 2014). Such social media platforms include blogs, MySpace, YouTube and Facebook (Sin, Nor, & Al-Agaga, 2012).

Blogs are popular social media platforms for recording and discussing personal feelings, ideas, and opinions related to particular events in one's daily life (Hsu, Lin, & Chiang, 2013) and it is especially popular among bloggers themselves, readers, and marketers (Colliander & Dahlen, 2011; Schertler, Kreunen, & Brinkmann, 2014). The popularity and potential of a blogger's recommendation is evident and the underlying logic is simple: consumers trust another consumer's comments more than those given by product/service companies (Lu, Chang, & Chang, 2014). This is more so especially if the comments are made by those who are perceived to be experts.

Previously, bloggers depend on their individual or private blogs to share comments on products or services. Today, the scenario is slightly different. Many of them now link and make themselves available not only through their private blogs but also on other social media platforms such as Facebook and Instagram. Users of these blogs and social media platforms have various purposes with some even becoming popular with a list of followings (e.g., well-known bloggers like Grace Bonney). They become celebrities; some bloggers are reported to have as many as 250 million social media followers. These celebrity social influencers earn millions of dollars for endorsement programmes and other businesses generated offline such as product lines and book deals (O'Connor, 2017). Their goal is to create electronic word of mouth (eWOM) via blogs (Brown, Barry, Dacin, & Gunst, 2005; Osman, Yearwood, & Vamplew, 2009) so as to reap financial benefits. Without doubt, a blogger's opinion and recommendation can affect consumer purchase intention (Colliander & Dahlen, 2011; Halvorsen, Hoffmann, Coste-Maniere, & Stankeviciute, 2013; Erkan & Evans, 2016). Therefore, who the consumers select as a suitable and effective blogger is a matter of crucial importance to the marketers as consumers are informed of the latest news and information via blogs that they frequently visit (Sin et al., 2012).

Despite the popularity of social media and the vast amount of research done on eWOM (Kim & Ko, 2012; Ioanas & Stoica, 2014; Hajli, 2014; Erkan & Evans, 2016), few studies have focused on blogs and bloggers' recommendations and its impact on consumer attitude and purchase intention (Hsu et al., 2013). In one study, Halvorsen et al. (2013) interviewed Norwegian consumers' buying behaviours on a particular blog type i.e., fashion blog. Based on their study, it is concluded that fashion blogs do indeed affect consumer behaviours. In the Asian Pacific context, marketing researchers frequently manipulate variables such as blog types and product constructs to assess a blog's advertising effectiveness (Ho, Chiu, Chen, & Papazafeiropoulou, 2015) or the influence of personality traits i.e., need for cognition and susceptibility to eWOM (Morimoto & Trimble, 2012). Only a handful of studies (Hsu et al., 2013; Lu et al., 2014; Hanifati, 2015) have attempted to examine how consumer attitude and purchase intention are influenced by bloggers' recommendations, particularly in the Asian context. These studies do not have separate assessments for blogger recommendations and the blog's recommendations which include comments from peer consumers (Wu & Lee, 2012; Lee & Ma, 2012; Casaló, Flavián, & Guinalíu, 2011). Hence, it is difficult for marketers to differentiate the effectiveness between bloggers' recommendations and peer consumers' recommendations on consumer attitudes and purchase intentions. Taking into account the significant amount of money marketers have spent on blogger endorsements and sponsorship, an examination using separate assessment tools to detect the difference between bloggers' recommendations and peer consumers' recommendations is necessary.

Several researchers have examined the antecedents affecting consumer attitude and purchase intention on online shopping. Among these studies, Al-Debei, Akroush and Ashouri (2015) examined how perceived benefits and trust can affect consumer attitude towards online shopping in Jordan. However, no focus was given to any specific media type or purchase intention. From the Taiwanese perspective, Hsu et al. (2013) examined consumer attitude towards online shopping by manipulating factors such as perceived usefulness and trust towards blogger recommendations. Focussing on the Indonesian market, Hanifati's (2015) study confirmed the impact of food blogger's perceived usefulness on Indonesian consumer attitude and behaviours in choosing a restaurant. Erkan and Evans (2016) thus posited that information quality is important for an online shopping context because consumers approach products and services more eagerly when the information satisfies their demands. Meanwhile, Lee and Ma (2012) examined how perceived benefits play an important role in shaping consumer attitude towards online reviews. From the outcomes noted of these studies, it can be deduced that such studies had examined online shopping or online reviews only. They had not comprehensively tested these variables in the context of blogger recommendations.

As argued by Hsu et al. (2013), different countries have different lifestyles and culture. The adoption of information technology (IT) related products is also culturally bound (Leidner & Kayworth, 2006). A social media study by Imran, Han, and Akhter (2016) found culture as the critical influencing factor affecting the number of shares and comments noted on social media platforms. Most importantly, the impact and intensity varied across different cultures. Yap and Gaur (2016), in their paper on social networking usage, also asserted that findings cannot be generalised because regions are culturally different. Therefore, findings retrieved from the Taiwanese context (where blogs are a popular social media type) or the Western context may not be applicable on a multiracial, multireligion and multicultural society like Malaysia and in particular, the state of Sabah where blogs are still building their existence. Of the studies that had focussed on the Malaysian context, most samples were also from Peninsular Malaysia markets (Shojaee & Azman, 2013; Al-Rahmi & Othman, 2013) with very little focus paid to the less developed market of Sabah. Thus, there exists a gap in terms of user profiles and backgrounds.

Sabah is among one of the poorest states of Malaysia. Despite its status, consumers in Sabah were found to spend 75 per cent more time shopping online when compared to consumers in Peninsular Malaysia (Bernama, 2017). Bernama reported that the findings can be attributed to the longer hours spent online due to the recent significant improvement in logistics and payment gateways. However, published data pertaining to social media usage in Sabah, particularly on blogs, are still lacking. This makes it difficult to assess the market potential of blogger's recommendations in influencing Sabah consumers' online shopping behaviour in the context of Sabah.

To present a robust examination of the blogging scenario of Sabah, this study extends Hsu et al.'s (2013) study by incorporating additional factors which have been extracted from the studies of Al-Debei et al. (2015), Erkan and Evans (2016), and Lee and Ma (2012). These additional factors include perceived usefulness, trustworthiness, perceived benefits and information quality. This study also aims to examine the relationship existing between consumer attitude toward blogger recommendations and purchase intention. It further looks at the mediating role of attitudes by applying the partial least squares (PLS) approach in assessing the structural fit of the framework tested.

This paper is divided into five sections. Section 1 presents the introduction to this study. Section 2 reviews the literature of past studies and hypotheses development. Section 3 details the methodology used in the study. Section 4 reports the results while Section 5 discusses the findings and implications of the research.

2. Literature Review and Hypotheses Development

A person's behaviour is influenced by his/her intention or willingness to try and the amount of effort he/she is willing to contribute in order to carry out the behaviour (Ajzen, 1991). This is well explained by the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and the theory of planned behaviour (TPB) (Ajzen, 1991). This means the stronger the individual's intention to carry out a behaviour, the higher the tendency of that behaviour to be performed. Relevant to this is the behaviour of purchase intention which is a vital concept in marketing (Morrison, 1979). Wu and Lee (2012) and Morwitz (2012) proposed that purchase intention is a good predictor of actual buying behaviour. It is the main input for predicting future sales as well as for impacting marketing actions on purchase behaviours (Morwitz, 2012). A number of marketing researchers (Lu et al., 2014) have examined and defined purchase intention as the willingness of consumers to buy a certain product/ service at a particular time and within a particular circumstance.

The advancement of technology and market uncertainty (Zamri & Idris, 2013) however, have caused the study of purchase intention to become more sophisticated and critical when compared to the past (Madahi & Sukati, 2012). Taking the context of blogging, for instance, purchase intention refers to the extent to which a blog reader believes the blogger's recommendation could improve his/her knowledge regarding a product/service (Hsu et al., 2013). This belief can eventually influence his/her attitude and behaviour. As mentioned earlier, even though reports noting the power of social media and the huge influence of blog sites and bloggers are vast, empirical studies focussing on blogger recommendations are still lacking. In addition to this, the examination of antecedent factors affecting consumer attitude leading to purchase intention too has not been addressed.

The TRA and technology acceptance model (TAM) (Venkatesh & Davis, 2000) explain that individuals form beliefs by referring to the information or the normative practices of a group or peers (Hsu et al., 2013). In a buying situation, consumers frequently refer to the opinions of reference groups for their purchase (Brown & Reingen, 1987), especially for expensive, unfamiliar or high involvement products. This is used by the consumers to assess how useful those products can be, in other words, the perceived usefulness of such products. It is also used by marketers to predict user acceptance of information technology (Hsu et al., 2013). In the case of blogging, perceived usefulness refers to the usefulness of the blogger's recommendation in improving consumers' buying performance (Erkan & Evans, 2016). Bloggers who are perceived as experts in a particular product category are viewed as persons who are neutral and non-commercial (Hsu et al., 2013). Thus, their opinions and recommendations are viewed to be more reliable and useful (Wu, 2011), especially in the context of online shopping where face to face encounters do not happen. Casaló et al. (2011) studied perceived usefulness as an antecedent to favourable attitude towards reviews from an online travel community. Their research presented some significant results. Hsu et al. (2013) also examined how bloggers' recommendations of product usefulness and consumers' trusting beliefs can influence consumer attitudes and their behavioural intentions towards online shopping. They too found a significant positive impact of usefulness on attitude. The study by Hanifati (2015) showed a similar result whereby perceived usefulness significantly influenced consumers' behavioural intention. In general, literature shows that consumers form favourable attitudes when the recommendation is perceived to be useful. Based on this, it is hypothesised that:

H_1: Perceived usefulness positively influences consumer attitude towards blogger recommendations.

Spread by mainly word of mouth (WOM), blogs are found to be a credible source of information when compared to other media sources (Hsu et al., 2013). In the context of blogs, information is sent and received through marketing techniques such as commercials and advertisements (Halvorsen et al., 2013). The basic element affecting consumers' willingness to accept a message in traditional WOM is trustworthiness and source credibility (Filieri, Alguezaui, & Mcleay, 2015). Trustworthiness refers to the trust that viewers have towards the products recommended by the blogger (Wu & Lee, 2012) while source credibility is the perception of a just, trustable, true or even accurate information (Lu et al., 2014). Trust is crucial in the online environment (Hsu et al., 2013) due to various associated environmental risks. In an online shopping environment, consumers tend to seek product information from different sources such as reference groups and personal social media (e.g., blogs) so as to reduce the transaction risks (Hsiao, Lin, Wang, Lu, & Yu, 2010). Famous bloggers tend to attract bigger numbers of loyal readers as these bloggers display a high level of trustworthiness (Wu & Lee, 2012); and they are often viewed as non-commercial entities (Hsu et al., 2013). In other words, they are mostly users of a particular product/service and upon their own use, they make recommendations to other users. Sparks, Perkins, and Buckley (2013) studied attitude and purchase intention of travellers staying at a resort. They postulated that the trustworthiness of online reviews had significantly affected the attitude and purchase intention of the travellers. Consumer-generated reviews for specific contents are viewed to be more trustworthy than manager-generated contents. This is because consumer reviews carry very specific information that fulfills the need of the consumers. The two-way communication between bloggers and readers can eventually increase perceptions of trust. This is especially true when the positive reviews come from bloggers who are perceived to be experts in their field rather than mere consumers (Plotkina & Munzel, 2016) or marketers. Based on this it is thus hypothesised that:

H_2: Trustworthiness positively influences consumer attitude towards blogger recommendations.

Besides trustworthiness on bloggers and perceived usefulness of products, consumers can be further persuaded to show higher purchase intention in another way. Park, Lee, & Han (2007) suggested that if the good quality reviews are high in number, consumers tend to show higher purchase intention. This finding is consistent with Zhang, Zhao, Cheung, and Lee (2014). Reviews which are informative will act as complementary information that reduces perceived risks thereby improving purchase intention. Information quality is defined as "the bloggers' general perception of the collective content quality of blogs in a specific blog service provider" (Wang & Lin, 2011, p. 52). Consumers perceive information characteristics such as relevance, understandability, sufficiency, objectivity and adequacy persuasiveness as important criteria for judging content quality (Park et al., 2007; Zhang et al., 2014). The advancement of online technology allows consumers to use and rely heavily on consumer-generated media to obtain valuable consumer reviews (Filieri et al., 2015). Hence, the quality of the information, especially those provided by the expert blogger, is crucial in forming favourable attitudes. Based on this, it is thus hypothesised that:

H_3: Information quality positively influences consumer attitude towards blogger recommendations.

Consumers receive both positive and negative reviews (i.e. benefits versus costs) from blogs. They try to use these reviews to maximise their benefits over costs (Lee & Ma, 2012). In the case of bloggings, perceived benefits refer to consumers' beliefs about the relative advantages of using a recommendation post. Consumers form favourable attitudes when they perceive from online reviews that they would enjoy more benefits than costs. The perception of the positive outcomes arising from a particular option or perceived benefit (Leung, 2013) drives their purchase intention (Park et al., 2007). Despite its importance, consumers' perceived benefits of online reviews including blogger reviews, have not been explicitly studied (Lee & Ma, 2012). In the case of blogger recommendations, the relative advantages from using a recommendation post refers to the perceived usefulness of the review in helping them to gather information about the features, functions, price range, quality, and popularity of the product (Lee & Ma, 2012). Hence, consumers form more favourable attitudes towards blogger recommendations when the perceived benefits are high. Based on this, it is thus hypothesised that:

H_4: Perceived benefits positively influences consumer attitude towards blogger recommendations.

Attitude towards an object in an online shopping context is defined as "a collected set of beliefs individuals form regarding a particular object and it can not only predict the willingness of consumers to perform an action but also mediate the influence of beliefs formed as a result of online informational cues on purchase intention" (Sparks et al., 2013, p. 2). As defined by Hanifati (2015, p. 150), "attitude towards blogger recommendations is the extent to which a blog reader has positive feelings about the information provided by the blogger". Consumer attitude has been widely used as the prediction of consumer behaviour (Casaló et al., 2011). Well known theories such as TRA, TPB and TAM have proposed that the individuals' behaviour intentions are influenced by their attitude towards the behaviour. For instance, Prendergast, Ko and Yuen (2010) found that the positive attitude towards an online forum strengthen the purchase intention of the products discussed. In the case of online product recommendations, Hsiao et al. (2010) also posited that attitude towards online shopping is the most important predictor of a user's behavioural intention. In other words, increased positive attitude will lead to increased behavioural intention. A study on young social media users' beliefs, attitude, and behavioural responses toward social media advertising also found a significant relationship between attitude toward social media advertising and behavioural responses (Chu, Kamal, & Kim, 2013). A positive attitude towards social media advertising can lead to a higher involvement in brand messages and information seeking efforts and eventually, the purchase intention. Therefore, a more favourable attitude towards blogger's recommendations will lead to a higher purchase intention. Thus, it is hypothesised that:

H_5: Consumer attitude towards blogger recommendations positively influences consumer purchase intention.

Sparks et al. (2013) noted the mediation role of attitude in the relationships of different variables. In their study, attitude towards staying at a resort is found to mediate the influence of beliefs about the utility of the reviews and trust on purchase intention. This finding suggests that trust in a resort and the reviews together with the beliefs of consumers in the utility of the reviews, influence consumer attitude toward staying at the resort. This, in turn, mediates the effect of such belief on purchase intention. A similar result is found in Liang, Ekinci, Occhiocupo and Whyatt's (2013) study. Here, travellers' overall attitude towards the eWOM communication mediates the direct influence of the antecedents of travellers' eWOM communication (namely, subjective norms, adoption of the electronic communication media technology and customer dissatisfaction/satisfaction with travel consumption experiences) on the travellers' intention to use eWOM communication media. Similarly, in the case of blogger recommendation, attitude serves as a mediator between the four antecedent factors and purchase intention. Based on this, it is thus hypothesised that:

- H_6: Consumer attitude towards blogger recommendations mediates the relationship between perceived usefulness and purchase intention.
- H_7: Consumer attitude towards blogger recommendations mediates the relationship between trustworthiness and purchase intention.
- H_8: Consumer attitude towards blogger recommendations mediates the relationship between information quality and purchase intention.
- H_9: Consumer attitude towards blogger recommendations mediates the relationship between perceived benefits and purchase intention.

3. Research Methodology

Earlier methodological considerations include blog types and respondent criteria. In this study, two pretests were carried out prior to the main study. Pretest 1 aims to determine the types of blogs that were frequently visited by the respondents. Respondents were instructed to answer the questionnaire based on their experiences with the blog sites that they frequently visit. From a total of 30 responses collected, it appears that fashion blogs (36.7 per cent) and travel blogs (40 per cent) were the highest rated in terms of frequency of visit. These two blog types were then used as a general reference for blog types in the main study.

Pretest 2 aims to cross check the reliability and testability of the questionnaire used in the main study. Due to the bilingual nature of the questionnaire (English and Malay), it is important to identify and eliminate potential problems such as translation differences in meaning, typo errors and formatting issues. Back to back translation, which is commonly used in marketing research (Douglas & Craig, 2007) was carried out. Following the questionnaire, a total of 10 respondents were interviewed so that their feedback can be used to improve the comprehensiveness of the questionnaire. Every measurement item and sentence in the questionnaire was thoroughly checked by both the interviewees and interviewers. Any discrepancy was resolved through mutual agreement after discussion.

To ensure respondents' relevancy, a screening question was asked prior to the answering of the questionnaire: "Have you read articles in a blog?" All constructs and items in the questionnaire were adopted and adapted from extant literature with modifications made to suit this study (refer to Appendix A for the list of measurement items). The five-point scale items for perceived usefulness were adopted from Hsu et al. (2013). The nine 5-point scale items for trustworthiness were adopted from Hsu et al. (2013), Lee and Ma (2012) and Erkan and Evans (2016). For information quality, six 5-point scale items were developed from Park et al. (2007). One item, "each recommendation post of the products is objective" was later deleted from the structural testing due to its low factor loading. The seven 5-point scale items of perceived benefits were adapted from Lee and Ma (2012). Meanwhile, the four 5-point scale items for attitude toward blogger's recommendations were adopted from Casaló et al. (2011) and Lee, Xiong and Hu (2012). Finally, the four 5-point scale items for purchase intention were adopted from Plotkina and Munzel (2016).

The target population of this study was the people who have read blog articles, particularly those residing in the districts of Kota Kinabalu, Tawau and Sandakan in the Sabah state. These three districts have the highest population number (Department of Statistics Malaysia, 2010) as well as a higher number of Internet users. From the sum of population (total population of the three districts = 1,284,394 people), the sample size of 384 was calculated by adopting the convenience sampling method, with the sampling fraction of 0.03 per cent over the total population. In addition, the G*Power analysis with the effect size of 0.15 (Cohen, 1988) was run to determine the minimum required sample size. A total number of 384 valid responses were collected for the main study out of 400 questionnaires distributed (response rate of 96 per cent). This figure exceeds the minimum requirement of 138 and therefore, is considered as appropriate and acceptable for analysis.

4. Data Analysis and Findings

4.1 Respondent Profile

The profile of the respondents is shown in Table 1, showing the majority being Malays and Bumiputera (77.6 per cent), females (59.9 per cent), aged between 26-35 years old (41.1 per cent) and with minimum qualification of bachelor's degree (37.8 per cent). The ethnic composition of the respondents was found to be representative of the Sabahan population. From the screening question procedure, more female blog

Table 1: Profile of Respondents

Demographic Variables	Categories	Frequency	Percentage (%)
Age	≤18 years	62	16.1
	19-25 years	131	34.1
	26-35 years	158	41.1
	36-45 years	28	7.3
	≥46 years	5	1.4
Gender	Male	154	40.1
	Female	230	59.9
Ethnic	Malay and Bumiputera Sabah and Sarawak	298	77.6
	Chinese	76	19.8
	Indian	10	2.6
Education Level	SPM	81	21.0
	STPM/Certificate/Diploma	77	20.2
	Bachelor's degree	145	37.8
	Master's and above	81	21.0
Frequently Visited Blog Type	Fashion	132	34.4
	Travel	148	38.5
	Others (food, games and toys, car accessories; novels and eBooks, etc.)	104	27.1

viewers/readers were identified. Similar to the results of the pre-test 1, respondents indicate that they frequently visited blogs such as fashion and travel blogs (34.4 per cent and 38.5 per cent respectively) while the rest (27.1 per cent) visited blogs related to food, games and toys, cars and accessories as well as novels and eBooks.

4.2 Common Method Bias

Common method bias is caused by the variance in the responses due to adopted measurements rather than the respondents (Brannick, Chan, Conway, Lance, & Spector, 2010). Since this study employed a cross-sectional survey, common method bias may be a concern in affecting study results. Therefore, Harman's single factor test was carried out; and the extracted sum of squared loading for the first variable is 30.52 per cent, which is lower than the cutoff point of 50 per cent (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This implies that the data did not suffer from common method variance.

4.3 Analysis of Measurement Model

Structural equation modeling with PLS approach was used to analyse the measurement and structural models. This study adopted a two-step procedure recommended by Anderson and Gerbing (1988). In this approach, the measurement model was first examined to measure reliability, convergent validity and discriminant validity. Following this, the structural model was formed to test the hypotheses.

Table 2 shows the consistency, reliability and convergent validity of the measurement model that was constructed in this study. All the loadings in the study exceeded the recommended threshold value of 0.5 (Hair, Black, Babin, & Anderson, 2010). They also ranged from 0.656 to 0.861. The average variance extracted (AVE) of the constructs ranged from 0.517 to 0.659 which also exceeded the recommended threshold value of 0.5. These results prove the adequate convergence validity of the constructed measurement model. The composite reliability (CR) values ranged from 0.845 to 0.911 which also exceeded the recommended threshold value of 0.7. This indicates a good reliability.

The square root of every AVE value of each latent construct was calculated so as to reflect the discriminant validity. It can be seen from Table 3 that the square root of the AVE at the diagonals was found to exceed the off diagonals element in the corresponding row and column.

Table 2: Internal Consistency Reliability and Convergent Validity

	Items	Factor Loadings	AVE	CR
Perceived Usefulness	PU1	0.763	0.600	0.883
	PU2	0.814		
	PU3	0.699		
	PU4	0.786		
	PU5	0.806		
Trustworthiness	TR1	0.692	0.517	0.906
	TR2	0.731		
	TR3	0.747		
	TR4	0.736		
	TR5	0.656		
	TR6	0.701		
	TR7	0.709		
	TR8	0.768		
	TR9	0.725		
Information Quality	IQ1	0.707	0.521	0.845
	IQ3	0.712		
	IQ4	0.719		
	IQ5	0.775		
	IQ6	0.694		
Perceived Benefits	PB1	0.741	0.595	0.911
	PB2	0.792		
	PB3	0.799		
	PB4	0.780		
	PB5	0.776		
	PB6	0.798		
	PB7	0.707		
Attitude towards Blogger Recommendations	ATT1	0.805	0.659	0.885
	ATT2	0.813		
	ATT3	0.825		
	ATT4	0.804		
Purchase Intention	PI1	0.756	0.627	0.870
	PI2	0.720		
	PI3	0.823		
	PI4	0.861		

Note: AVE = average variance extracted, CR = composite reliability.

Table 3: Discriminant Validity

	Mean	SD	ATT	IQ	PB	PU	PI	TR
ATT	3.82	0.648	**0.812**					
IQ	3.41	0.590	0.605	**0.722**				
PB	3.55	0.548	0.538	0.517	**0.771**			
PU	3.94	0.561	0.557	0.462	0.624	**0.775**		
PI	3.72	0.563	0.692	0.550	0.449	0.482	**0.792**	
TR	3.63	0.620	0.615	0.709	0.432	0.485	0.567	**0.719**

Note: Diagonals represent the square root of the AVE while the off diagonals represent the correlations. ATT = Attitude towards Blogger Recom-mendation, IQ = Information Quality, PB = Perceived Benefits, PU = Perceived Usefulness, PI = Purchased Intention, TR = Trustworthiness.

Bolded figures in Table 3 display the square roots of the AVE while the non-bolded figures are the inter-correlation values between the constructs.

4.4 Structural Model Analysis and Hypotheses Testing

A 5000 resample of bootstrapping procedure was run in order to test the structural model and its associated hypotheses. As indicated in Figure 1, the R^2 values of the dependent variable (purchase intention) and the mediating variable (attitude towards bloggers' recommendations) are 0.479 and 0.516, respectively. The R^2 values were above the threshold of 0.333, indicating a moderate model. Path coefficient was then used to examine the strength of the relationships. According to Hair et al. (2010), the value of path coefficient should be greater than 0.1 and is significant at 0.05 level. Figure 1 shows that all path coefficients are found to be larger than 0.1 and also significant at the 0.05 level.

Table 4 and Figure 1 show the results of the t-values after the boot-strapping procedure, indicating that H_1 to H_4 are supported. Perceived usefulness (β=0.213, t-value=4.082, p<0.01), trustworthiness (β=0.283, t-value=5.113, p<0.01), information quality (β=0.218, t-value=4.017, p<0.01), and perceived benefits (β=0.170, t-value=3.449, p<0.01) were found to have positive relationships with consumer attitudes towards blogger recommendations. Further, consumer attitudes towards blogger recommendations positively influenced consumer purchase intention towards products recommended by bloggers (β=0.692, t-value=16.873, p<0.01), hence H_5 is also supported.

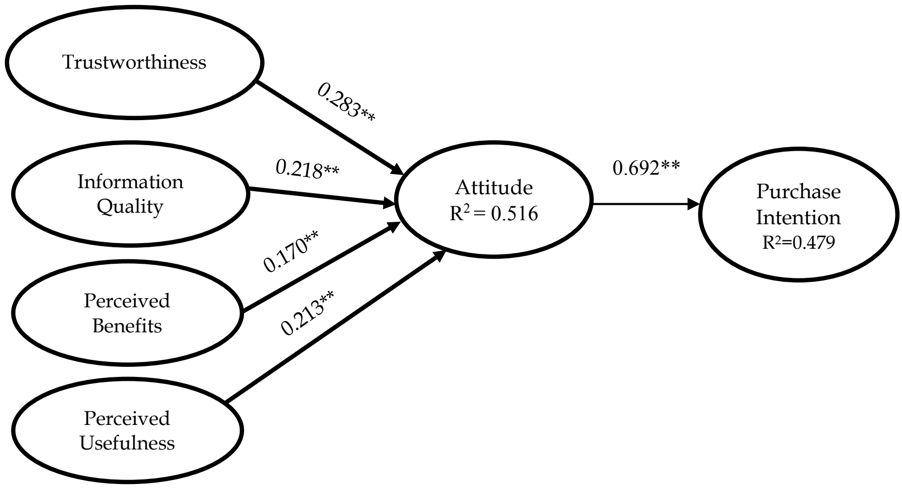

Figure 1: Structural Model Analysis

Table 4: Results of Hypothesis Testing

Hypotheses	Relationship	Std. Beta (β)	Std. Error	t-value	f^2	Decision
H_1	PU → AT	0.213	0.052	4.082**	0.052	Supported
H_2	TR → AT	0.283	0.055	5.113**	0.077	Supported
H_3	IQ → AT	0.218	0.054	4.017**	0.043	Supported
H_4	PB → AT	0.170	0.049	3.449**	0.032	Supported
H_5	AT → PI	0.692	0.041	16.873**	0.918	Supported

Note: PU = Perceived Usefulness, Trustworthiness = TR, IQ = Information Quality, PB = Perceived Benefits, AT = Attitude, PI = Purchase Intention. ** denotes significance at p<0.01.

Further to the above, the effect size (f^2) of the relationships were tested and results are presented in Table 4 so as to evaluate the strength of the statistical claim. A larger absolute value generally indicates a stronger effect. According to Cohen (1988), f^2 of 0.02 is considered small, 0.15 is considered medium, and 0.35 is considered large. In this study, the highest f^2 was found in the relationship between consumer attitudes towards bloggers' recommendations and consumer purchase intention towards products recommended by bloggers, which is 0.918.

Meanwhile, the relationship between perceived benefits and consumer attitudes towards products recommended by bloggers had the lowest effect size, f^2=0.032. Among the four antecedent factors, trustworthiness possessed the highest f^2 of 0.077, indicating that trustworthiness is the most important factor in influencing consumer attitudes toward blogger recommendations.

4.5 Mediation Analysis

A mediation test was carried out by bootstrapping the sampling distribution of the indirect effect (Hair, Hult, Ringle, & Sarstedt, 2017) as suggested by Preacher and Hayes (2008) and Zhao, Lynch and Chen (2010). The mediation test procedure was based on Zhao et al.'s (2010) guidelines instead of Baron and Kenny's (1986). This is because "more recent research point to the conceptual and methodological problems of the approach" (Hair et al., 2017, p. 232). Structural equation model (SEM) approach is said to dominate the "causal steps approach" of Baron and Kenny (1986) as it did not assume the three equations in the three-variable-non-recursive causal model to be independent (Zhao et al., 2010). Baron and Kenny's (1986) golden standard of "full mediation" was argued to be less relevant in many empirical studies as majority of the studies were concluded with "partial mediation" or direct effect (Zhao et al., 2010). The independent variable does not have to significantly affect the dependent variables. In fact, the significant indirect effect is posited to be the only requirement for mediation, when using bootstrap test and not Sobel test (Zhao et al., 2010). Sobel test was also not included as it is not consistent with the non-parametric PLS-SEM method (Hair et al., 2017). The mediation test was done by bootstrapping the sampling distribution of the indirect effect. Bootstrapping is applicable to small sample size data without making assumptions on the shape of the variable distribution or the sampling distribution (Hair et al., 2017). According to Hair et al. (2017), "bootstrapping yields a higher level of statistical power when compared to the Sobel test" (p. 235). Mediation effects occur when the mediator intervenes between the exogenous and endogenous variables (Hair et al., 2017).

Table 5 shows that the mediation tests carried out supported all the mediation hypotheses. Attitude towards blogger's recommendation was found to be a significant mediator for the relationships between the four antecedent factors and purchase intention (Perceived Usefulness→

Table 5: Mediation Test Results

Hypotheses	Relationships	Std. Beta (β)	Std. Error	Lower Limit	Upper Limit	t-Value	Results
H_6	PU → AT → PI	0.147	0.037	0.076	0.219	4.021**	Mediation
H_7	TR → AT → PI	0.196	0.039	0.120	0.272	5.066**	Mediation
H_8	IQ → AT → PI	0.151	0.039	0.075	0.227	3.902**	Mediation
H_9	PB → AT → PI	0.118	0.037	0.046	0.189	3.210**	Mediation

Note: PU = Perceived Usefulness, Trustworthiness = TR, IQ = Information Quality, PB = Perceived Benefits, AT = Attitude, PI = Purchase Intention. ** denotes significance at $p<0.01$.

Purchase Intention: β=0.147, t=4.021, $p<0.01$; Trustworthiness→Purchase Intention: β=0.196, t=5.066, $p<0.01$; Information Quality→Purchase Intention: β=0.151, t=.902, $p<0.01$ and finally, Perceived Benefits→ Purchase Intention: β= 0.118, t=3.210, $p<0.01$ respectively). In other words, a change in perceived usefulness, trustworthiness, perceived benefits and information quality can lead to a change in attitude towards bloggers' recommendations which, in turn, changes the purchase intention. There is also no zero in between upper limit (UL) values and lower limit (LL) values thereby indicating the mediation effects. Thus, the mediation results support H_6, H_7, H_8 and H_9.

5. Discussion and Implication

On the relationship noted between the four antecedent factors and consumer attitude, this study finds that the factor of trustworthiness has the greatest impact, followed by information quality, perceived usefulness and perceived benefits. The relationship between trustworthiness and consumer attitude towards blogger recommendations is statistically supported in this study which shows that consumer attitude towards blogger recommendations tend to be more favourable if trust is involved. Trust helps consumers to avoid risks in the online context and the positive outcomes brought by trust will help to develop the positive attitude of consumers towards carrying out a behaviour (Casaló et al., 2011). The findings also show that blogs are viewed as credible sources of information (Hsu et al., 2013) and bloggers with high popularity can attract many loyal readers, thereby displaying the characteristic of trustworthiness (Wu & Lee, 2012). In fact, consumer-generated reviews (in this case, the blogger recommendations) with specific contents are viewed to be more trustworthy than manager-generated contents and this seems to increase consumers' perceptions of trust (Sparks et al., 2013). These bloggers are also viewed as non-commercial entities (Hsu et al., 2013). The present findings are consistent with Zhang et al. (2014) in that reviews from a trustable blogger were perceived to be credible and more trustworthy than company sponsored advertising. They are also considered as true, accurate, convincing and reliable. Based on their firsthand experience and more neutral opinions, recommendations by a blogger who is viewed as an expert, can generate a higher degree of trust (Halvorsen et al., 2013). In fact, trustworthiness is the most important antecedent factor that can influence consumers' attitude towards blogger recommendations.

The findings of this study posit a positive relationship between information quality and consumer attitude towards blogger recommendations. Blogger recommendations will also act as a complementary information in improving consumers' purchase intention. Consumers' attitude towards blogger recommendations tend to be more favourable when the information quality is clear, credible, understandable and carries high quality reasons to support the opinions. These consumers use consumer-generated media to obtain reviews from previous customers whom they perceive to be valuable. Consumers rely on these reviews heavily as they are highly valued information which is not biased and is based on personal experience (Filieri et al., 2015). The comments could be negative or positive in nature and are considered as important for consumers' decision making. Therefore, consumers are better persuaded; they also become more inclined towards buying the product (Park et al., 2007).

The findings of this study indicate that consumers form favourable attitude towards bloggers' recommendations which are perceived to be useful. This finding is aligned with Hsu et al.'s (2013) study which investigated the influence of the usefulness of blogger recommendations and consumers' trusting beliefs on their purchase intention toward online shopping. The reason for this could be the influence bloggers' recommendations have on consumers' buying process. This serves as a vital source of information for the consumers during the searching stage and it can finally help consumers to affirm their final purchase decision. Undoubtedly, bloggers are considered as experts who are able to discuss the products in a realistic and unbiased manner. By providing useful information, their recommendations also help readers to form attitudes about the strength and weakness of certain products. Clearly, such recommendations help readers to improve their shopping effectiveness, performance, productivity and also their understanding of the products. This finding is consistent with Casaló et al.'s (2011) study which reveals that perceived usefulness of the online travel community reviews increase the efficiency of travellers in planning their travel plans.

The findings of this study also show a significant positive relationship between perceived benefits and consumer attitude towards blogger recommendations. This suggests that by being able to gather information about the products such as features, functions, price range, quality and popularity (Lee & Ma, 2012), consumers also form favourable attitudes towards blogger recommendations. This helps to reduce their risks of making a decision. Lee and Ma (2012) investigated consumer perceptions of online consumer reviews and the effects of consumer perceptions on consumer attitude and usage behaviours. They proposed that perceived benefits contribute significantly to favourable attitudes toward online reviews which also support the outcome of this study. Thus, it can be inferred that consumers tend to have more favourable attitudes towards blogger recommendations when the perceived benefits of the blogger recommendations are higher.

This study examined the proposed structural relationships and the effect size of each of the relationships. The relationship between attitude toward bloggers' recommendations and purchase intention was found to have the largest effect size. This finding conforms to the findings of previous studies conducted by Prendergast et al. (2010), Hsiao et al. (2010), Chu et al. (2013) and Lu et al. (2014), with the exception that previous studies did not examine blogger recommendation effects specifically. Prendergast et al. (2010), for instance, argued that when consumers have positive attitudes towards an online forum, the forum communications will be perceived to be more persuasive. Therefore, this strengthens the purchase intention. The current study is also able to show that attitude is a very important factor affecting behavioural intention. The more consumers like the recommendations, the more consumers perceive the blogger recommendations to be good, positive and favourable, the more likely they will consider buying the recommended product.

The findings of the main study also support the outcome noted in the mediation role of consumer attitude towards blogger recommendations. Antecedent factors such as perceived usefulness, trustworthiness, information quality and perceived benefits influenced consumer attitude towards blogger recommendations which in turn mediates the effect on purchase intention. Sparks et al.'s (2013) found a significant mediation effect of attitude towards staying at a resort. Liang et al. (2013) found that travellers' overall attitude mediates the direct influence of subjective norms, adoption of electronic communication media technology and customer dissatisfaction and satisfaction with travel consumption experience on travellers' intention to use eWOM communication media. Undoubtedly, blogger recommendation is a popular type of eWOM that is frequently utilised by consumers. Likewise, this study also finds that consumer attitude towards blogger recommendations mediates the effect of blogger recommendations on consumer' intention to purchase. Rather than having direct influences, antecedent factors such as perceived usefulness, trustworthiness, information quality and perceived benefits have stronger indirect relationships with purchase intention.

The outcomes generated here will benefit academicians and marketing practitioners. This study has presented evidence to show how blogger recommendations can influence consumer attitude and behavioural intention structure. Previously, Hsu et al. (2013) only partially examined the role of perceived usefulness and trust on consumer attitude toward blogger recommendations while Erkan and Evans (2016) tested the influence of information quality of social media on purchase intention and Lee and Ma (2012) examined how perceived benefits play an important role in shaping consumer attitude towards online reviews. Their studies did not differentiate between blogger recommendations from peer consumer recommendations; these studies also did not apply all the variables/factors to assess consumer attitude on purchase intention. That gap is filled by the current study which has successfully examined and confirmed the mediating role of attitude in the relationship between antecedent factors to attitudes and purchase intention.

From the practical perspective, useful evidence can be drawn to confirm the influential power of the blog as an effective integrated marketing communication tool. Therefore, marketers should utilise blogger recommendations to help consumers to understand their products hence increase sales. A useful and detailed recommendation provided by a blogger, based on firsthand experience can create persuasive messages which can enhance consumer purchase intention. Consumers are interested to know how a product works. They also welcome other information such as price, place, after sales services and warranties provided by bloggers including product features. Since some bloggers are sharing as well as offering promotional information based on firsthand experience, regardless of product brands, it is important to address and compare the different options available in the market. This information will be perceived as beneficial to consumers in terms of helping them to reduce perceived risks (e.g., time, resource, effort and monetary risks). This can improve and enhance consumers' decision making. In general, the recommendations should contain quality information with sufficient supporting reasons which are also objective, understandable, credible and clear.

This study provides valuable insights to marketers in choosing and evaluating their sponsored bloggers. It is proven by the effect size analysis that even though all antecedents are significant contributors, trustworthiness emerges as the most important contributing factor to favourable attitudes, followed by information quality, perceived usefulness and perceived benefits. Spreading mostly through word of mouth (WOM), consumers perceive blogger recommendations as a trustable source for their buying evaluations as compared to other media sources (Hsu et al., 2013). Smart bloggers with high popularity tend to attract more visitors to view their page in a day, better than the biggest newspaper circulation even (Wu & Lee, 2012). Thus, it is important for marketers to choose a blogger who is not only popular but also trustable in building favourable consumer attitudes which can eventually influence their purchase intention.

Nonetheless, marketers have to be cautious with the blogger's reputation. While useful, beneficial and quality recommendations will improve consumer attitude towards blogger recommendations which in turn enhance their purchase intention, the opposite is also true. In the case of tour operators, travel agencies or the Ministry of Tourism, consideration should be given in hiring only popular bloggers with good reputation to write about their product/service reviews. Similarly for fashion blogs, fashion bloggers should recommend useful information such as current fashion trends, latest fashion or product launch, price comparison, promotional campaigns and outlet locations to influence consumers' attitudes. Since trustworthiness is the main concern, marketers need to be extra cautious about not offending consumers who hold negative impressions of sponsored reviews. Too much bloggers' positive reviews can cause the sponsored reviews to be viewed as bias and misleading (Lu et al., 2014). This may be viewed as just "a form of online ads rather than consumer review of personal usage experience" (Lu et al., 2014, p. 259).

The findings of this study also suggest that marketers should stress on the quality of the recommended information so that its perceived usefulness and perceived benefits can be detected by consumers. Nonetheless, marketers need to give caution to the issue of information overload which could hinder information search and increase uncertainty (Lee & Ma, 2012; Park, Lee, & Han, 2006). Information overload occurs when "the volume of information supply exceeds the capacity of an individual" thereby leading to "dysfunctional consequences such as stress and anxiety" ((Morwitz, 2012, p. 198). Blogger recommendations could range from simple recommendations to attribute-value information which require different levels of cognitive processing of contents. In other words, while providing useful, beneficial and quality information to consumers, bloggers need to be careful with the delivery method and the web page design so as to reduce information overload.

Unlike Facebook users who have been traced properly by various online research companies, database on blog users in Malaysia is still unavailable. Nevertheless, this study has shed light on the use of blogs in the Malaysian context and in particular Sabah, where blog usage is still largely unidentified (Department of Statistics Malaysia, 2016). The findings of the present study has indicated that fashion and travel blogs are the two most frequently visited sites but other blogs such as food, 3C products, games and toys, cars and accessories, and novels may also be in demand. Therefore, marketers can use these insights to plan their future marketing strategies.

6. Conclusion, Limitation and Recommendation for Future Research

This study has confirmed the relationships between the four antecedent factors, namely perceived usefulness, trustworthiness, perceived benefits and information quality and attitude toward blogger recommendations. This study also finds a significant relationship between attitude and purchase intention as well as the mediating role of attitude towards blogger's recommendations.

However, the results of this study need to be interpreted and considered with some limitations. The first limitation is the generalisability of the findings. Even though the findings of the study conform to that of previous studies, other factors could play a part in influencing consumer attitude towards blogger recommendations and purchase intention. Besides demographic variables, moderators such as culture, product characteristics (e.g., complexity of the product, level of product involvement) or user readiness (e.g., blog user vs. non blog user, product user vs. non-product user) could be examined for their effects on blogger recommendations and consumer purchase intention. Most importantly, the data were collected from only the state of Sabah, rather than the whole of Malaysia, hence it limits the generalisability of the findings. Thus, more Internet as well as social media related studies should be conducted to examine consumers' online buying intention and decision making processes via the new media platform.

To date, there is limited published data indicating the total number of blog users, social media users or Internet users according to each state and district in Malaysia. This makes it difficult to determine the exact type of social media when conducting studies. Moreover, even though the screening questions were added to ensure that respondents were familiar with the subject matter, the incompleteness of data restricts the possibility of drawing a more precise sample size from the total number of blog users. The current study was only able to guide the respondents to the most frequently visited blogs such as fashion and travel blogs and not others. Further, data collection was not able to differentiate the blog types hence the findings cannot be further generalised to all blogs. Future study could examine the influence of blog types on attitude and buying patterns. Future research could also focus on one particular type of blog instead of several blogs. Since consumers may have different consideration factors in forming attitude and behavioural intention for different product categories, future studies should consider comparing bloggers who use private blogs and those who use multiple platforms (e.g. combining private blogs with Facebook and Instagram) so as to examine their influence on consumers' attitude and purchase intention. Experimental studies comparing the impacts of blogger recommendations and peer consumer recommendations will also provide useful insights to marketers.

In conclusion, this study has specifically measured the effect of blogger recommendations (excluding the effect of peer consumer recommendation); it also confirms the proposition that blogger recommendations affect consumer attitudes and purchase intention. This study suggests that factors such as perceived usefulness, trustworthiness, information quality, and perceived benefits need to be given extra attention so as to build favourable consumers' attitudes. Consumers who have favourable attitudes towards blogger recommendations have higher purchase intention towards the products recommended by bloggers. Thus, blogger recommendations can serve as an effective and important marketing tool for marketers.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. http://dx.doi.org/10.1016/0749-5978(91)90020-T

Al-Debei, M.M., Akroush, M.N., & Ashouri, M.I. (2015). Consumer attitudes towards online shopping: The effects of trust, perceived benefits, and perceived web quality. *Internet Research, 25*(5), 707-733. http://dx.doi.org/10.1108/IntR-05-2014-0146

Al-Rahmi, W.M., & Othman, M.S. (2013). The impact of social media use on academic performance among university students: A pilot study. *Journal of Information Systems Research and Innovation, 4*(12), 1-10.

Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.

Baron, R.M., & Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.

Bernama (2017, September 7). *Sabah, Sarawak internet users spend more time on online shopping*. Retrived from http://www.freemalaysiatoday.com/category/nation/2017/09/07/sabah-sarawak-internet-users-spend-more-time-on-online-shopping/

Brannick, M.T., Chan, D., Conway, J.M., Lance, C.E., & Spector, P.E. (2010). What is method variance and how can we cope with it? A panel discussion. *Organizational Research Methods, 13*(3), 407-420. http://dx.doi.org/10.1177/1094428109360993

Brown, J.J., & Reingen, P.H. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research, 14*(3), 350-362.

Brown, T.J., Barry, T.E., Dacin, P.A., & Gunst, R.F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. *Journal of the Academy of Marketing Science, 33*(2), 123-138, http://dx.doi.org/10.1177/0092070304268417

Casaló, L.V., Flavián, C., & Guinalíu, M. (2011). Understanding the intention to follow the advice obtained in an online travel community. *Computers in Human Behavior, 27*(2), 622-633. http://dx.doi.org/10.1016/j.chb.2010.04.013

Chu, S.C., Kamal, S., & Kim, Y. (2013). Understanding consumers' responses toward social media advertising and purchase intention toward luxury products. *Journal of Global Fashion Marketing, 4*(3), 158-174. http://dx.doi.org/10.1080/20932685.2013.790709

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Colliander, J., & Dahlen, M. (2011). Following the fashionable friend: The power of social media. Weighing publicity effectiveness of blogs versus online magazines. *Journal of Advertising Research, 51*(1), 313-320. http://dx.doi.org/10.2501/JAR-51-1-313-320

Department of Statistics Malaysia. (2010). *Population and housing census of Malaysia. Population distribution and basic demographic characteristics 2010*. Putrajaya: Author.

Department of Statistics Malaysia (2016). *Sabah @ a glance*. Putrajaya: Author.

Douglas, S.P., & Craig, C.S. (2007). Collaborative and iterative translation: An alternative approach to back translation. *Journal of International Marketing, 15*(1), 30-43.

Erkan, I., & Evans, C. (2016). The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior, 61*(August), 47-55. http://dx.doi.org/10.1016/j.chb.2016.03.003

Filieri, R., Alguezaui, S., & Mcleay, F. (2015). Why do travelers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth. *Tourism Management, 51*(December), 174-185. http://dx.doi.org/10.1016/j.tourman. 2015.05.007

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). New Jersey, USA: Pearson Prentice Hall.

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd Ed.). Thousand Oaks, CA: Sage Publications.

Hajli, M.N. (2014). A study of the impact of social media on consumers. *International Journal of Market Research, 56*(3), 387-404. http://dx.doi.org/10.2501/IJMR-2014-025

Halvorsen, K., Hoffmann, J., Coste-Maniere, I., & Stankeviciute, R. (2013). Can fashion blogs function as a marketing tool to influence consumer behavior? Evidence from Norway. *Journal of Global Fashion Marketing, 4*(3), 211-224. http://dx.doi.org/10.1080/20932685.2013.790707

Hanifati, A.N. (2015). The impact of food blogger toward consumer's attitude and behavior in choosing restaurant. *International Journal of Humanities and Management Services, 3*(3), 149-154.

Ho, C.H., Chiu, K.H., Chen, H., & Papazafeiropoulou, A. (2015). Can internet blogs be used as an effective advertising tool? The role of product blog type and brand awareness. *Journal of Enterprise Information Management, 28*(3), 346-362. http://dx.doi.org/10.1108/JEIM-03-2014-0021

Hsiao, K.L., Lin, J.C.C., Wang, X.Y., Lu, H.P., & Yu, H. (2010). Antecedents and consequences of trust in online product recommendations: An empirical study in social shopping. *Online Information Review, 34*(6), 935-953. http://dx.doi.org/10.1108/14684521011099414

Hsu, C.L., Lin, J.C.C., & Chiang, H.S. (2013). The effects of blogger recommendations on customers' online shopping intentions. *Internet Research, 23*(1), 69-88. http://dx.doi.org/10.1108/10662241311295782

Imran K., Han, D.P., & Akhter W. (2016). Does culture matter in effectiveness of social media marketing strategy? An investigation of brand fan pages. *Aslib Journal of Information Management, 68*(6), 694-715. http://dx.doi.org/10.1108/AJIM-03-2016-0035

Ioanas, E., & Stoica, I. (2014). Social media and its impact on comsumer behavior. *International Journal of Economic Practices and Theories, 4*(2), 295-303.

Kemp, S. (2016, January 27). *News: Digital in 2016*. Retrieved from http://wearesocial.sg/blog/2016/01/digital-2016/

Kim, A.J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research, 65*(10), 1480-1486. http://dx.doi.org/10.1016/j.jbusres.2011.10.014

Lee, H.H., & Ma, Y.J. (2012). Consumer perceptions of online consumer product and service reviews: Focusing on information processing confidence and susceptibility to peer influence. *Journal of Research in Interactive Marketing, 6*(2), 110-132. http://dx.doi.org/10.1108/17505931211265426

Lee, W., Xiong, L., & Hu, C. (2012). The effect of Facebook users' arousal and valence on intention to go to the festival: Applying an extension of the technology acceptance model. *International Journal of Hospitality Management, 31*(3), 819-827. http://dx.doi.org/10.1016/j.ijhm.2011.09.018

Leidner, D.E., & Kayworth, T. (2006). A review of culture in information systems research: Toward a theory of information technology culture conflict. *MIS Quarterly, 30*(2), 357-399.

Leung, Y. (2013). Encyclopedia of behavioral medicine. In M.D. Gellman & J.R. Turner (Eds.), *Encyclopedia of Behavioral Medicine* (pp. 1450-1451). New York, NY: Springer.

Liang, S.W.J., Ekinci, Y., Occhiocupo, N., & Whyatt, G. (2013). Antecedents of travellers' electronic word-of-mouth communication. *Journal of Marketing Management, 29*(5-6), 584-606. http://dx.doi.org/10.1080/0267257X.2013.771204

Lu, L.C., Chang, W.P., & Chang, H.H. (2014). Consumer attitudes towards blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior, 34*(May), 258-266. http://dx.doi.org/10.1016/j.chb.2014.02.007

Madahi, A., & Sukati, I. (2012). The effect of external factors on purhcase intention amongst young generation in Malaysia. *International Business Research, 5*(8), 153-159. http://dx.doi.org/10.5539/ibr.v5n8p153

Morimoto, M., & Trimble, C.S. (2012). Consumers' use of blogs as product information sources: From need-for-cognition perspective. *The Marketing Management Journal, 22*(2), 45-60.

Morrison, D.G. (1979). Purchase intentions and purchase behavior. *Journal of Marketing, 43*(2), 65-74.

Morwitz, V. (2012). Consumers' purchase intentions and their behavior. *Foundations and Trends in Marketing, 7*(3), 181-230. http://dx.doi/org/10.1561/1700000036

O'Connor, C. (2017, April 10). *Forbes top influencers: Meet the 30 power players making a fortune on social media*. Retrieved from https://www/forbes.com/sites/clareoconnor/2017/10/forbes-to-influencers-meet-the-30-power-players-making-a-fortune-on-social-media/#5d3db84613c8

Osman, D., Yearwood, J., & Vamplew, P. (2009). Weblogs for market research: Finding more relevant opinion documents using system fusion. *Online Information Review, 33*(5), 873-888. http://dx.doi.org/10.1108/14684520911001882

Park, D.H., Lee, J., & Han, I. (2006). *Information overload and its consequences in the context of online consumer reviews*. Paper presented at the 10th Pacific Asia Conference on Information Systems (PACIS), Kuala Lumpur. Retrieved from www.pacis-net.org/file/2006/1096.pdf

Park, D.H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intentions: The moderating role of involvement. *International Journal of Electronic Commerce, 11*(4), 125-148. http://dx.doi.org/10.2753/JEC1086-4415110405

Plotkina, D., & Munzel, A. (2016). Delight the experts, but never dissatisfy your customers! A multi-category study on the effects of online review source on intention to buy a new product. *Journal of Retailing and Consumer Services, 29*(March), 1-11. http://dx.doi.org/10.1016/j.jretconser.2015.11.002

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903. http://dx.doi.org/10.1037/0021-9010.88.5.879

Prendergast, G., Ko, D., & Yuen, S.Y. (2010). Online word of mouth and consumer purchase intentions. *International Journal of Advertising, 29*(5), 687-708. http://dx.doi.org/10.2501/S0265048710201427

Preacher, K.J., & Hayes, A.F. (2008). Contemporary approaches to assessing mediation in communication research. In A.F. Hayes, M.D. Slater, & L.B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 13-54). Thousand Oaks, CA: Sage Publications. http://dx. doi.org/10.4135/9781452272054.n2

Schertler, M., Kreunen, T., & Brinkmann, A. (2014). Defining the role of fashion blogs: Have blogs redefined consumers' relationship with fashion brands or do they simply offer a new marketing tool for retailers? Arnhem: Crossmedia Lab in Utrecht en ArtEZ Hogeschoolvoor Kunsten.

Sin, S.S., Nor, K.M., & Al-Agaga, A.M. (2012). Factors affecting Malaysian young consumers' online purchase intention in social media websites. *Procedia – Social and Behavioral Sciences, 40*, 326-333. http://dx.doi.org/10.1016/j.sbspro.2012.03.195

Shojaee, S., & Azman, A. (2013). An evaluation of factors affecting brand awareness in the context of social media in Malaysia. *Asian Social Science, 9*(17), 72-78. http://dx.doi.org/10.5539/ass.v9n17p72

Sparks, B.A., Perkins, H.E., & Buckley, R. (2013). Online travel reviews as persuasive communication: The effects of content type, source, and certification logos on consumer behavior. *Tourism Management, 39*(December), 1-9. http://dx.doi.org/10.1016/j.tourman.2013.03.007

Venkatesh, V., & Davis, F.D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204. http://dx.doi.org/10.1287/mnsc.46.2.186.11926

Yap, S.F., & Gaur, S.S. (2016). Integrating functional, social, and psychological determinants to explain online social networking usage. *Behaviour & Information Technology, 35*(3), 166–183. http://dx.doi.org/10.1080/0144929X.2015.1035336

Wang, S.M., & Lin, J.C.C. (2011). The effect of social influence on bloggers' usage intention. *Online Information Review, 35*(1), 50-65. http://dx.doi.org/10.1108/14684521111113588

Wu, C.M. (2011). How quality influence user's continuance of the recommendation blog. *Key Engineering Materials*, 474-476, 1132-1136. http://dx.doi.org/10.4028/www.scientific.net/KEM.474-476.1132

Wu, W.L., & Lee, Y.C. (2012). The effect of blog trustworthiness, product attitude, and blog involvement on purchase intention. *International Journal of Management and Information System, 16*(3), 265-276. http://dx.doi.org/10.19030/ijmis.v16i3.7079

Zamri, N., & Idris, I. (2013). *The effects of attitude, social influnces and perceived behavioral control on intention to purhcase online shopping apparels in Malaysia: Case study on Zalora*. Paper presented at the 3rd International Conference on Management, Penang. Retrieved from https://pdfs.semanticscholar.org/537a/f0345e07ca3c61be2d078c7c1786ad2adcd0.pdf

Zhang, K.Z.K., Zhao, S.J., Cheung, C.M.K., & Lee, M.K.O. (2014). Examining the influence of online reviews on consumers' decision-making: A heuristic-systematic model. *Decision Support Systems, 67*(November), 78-89. http://dx.doi.org/ 10.1016/j.dss.2014.08.005

Zhao, X., Lynch Jr, J.G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206. http://dx.doi.org/10.1086/651257

Appendix A: Operationalisation

Variable	Item	Source
Perceived Usefulness	Bloggers' recommendations improve my shopping performance. Bloggers' recommendations enhance my shopping effectiveness. Bloggers' recommendations increase my productivity when shopping. Bloggers' recommendations provide useful information about the product. Bloggers' recommendations are helpful in understanding the product.	Hsu, Lin and Chiang (2013), Park, Lee and Han (2007)
Trustworthiness	I believe bloggers' recommendations to be true. I trust information on blogs to be true. Bloggers are trustworthy. Bloggers' recommendations are more trustworthy than company sponsored advertising because they are posted by peers. Bloggers' recommendations are reliable. Recommendations posted by trustworthy bloggers are to be considered true. I think bloggers' recommendations are convincing. I think bloggers' recommendations are credible. I think bloggers' recommendations are accurate.	Hsu, Lin and Chiang (2013), Lee and Ma (2012), Erkan and Evans (2016)
Information Quality	Each recommendation post of the products has sufficient reasons supporting the opinions. Each recommendation post of the products is objective. Each recommendation post of the products is understandable. Each recommendation post of the products is credible. Each recommendation post of the products is clear.	Park, Lee and Han (2007)

Appendix A: (continued)

Variable	Item	Source
	In general, the quality of each recommendation post of the products is high.	
Perceived Benefits	Bloggers' recommendations help me to reduce risk of making a decision. Bloggers' recommendations can help me gain knowledge about how the product works. Bloggers' recommendations can help me obtain product information in general. Bloggers' recommendations can help me judge product quality. Bloggers' recommendations can help me check product feature and function. Bloggers' recommendations help me learn about products. Bloggers' recommendations may provide different opinions about the product that I never considered.	Lee and Ma (2012)
Attitude towards Bloggers' Recommendations	I think following bloggers' recommendations would be good for me. I have a positive opinion about bloggers' recommendations. I like bloggers' recommendations. Overall my attitude toward bloggers' recommendations is favourable.	Casaló, Flavian and Guinaliu (2011), Lee, Xiong and Hu (2012)
Purchase Intention	It is highly probable that I will choose the product recommended by blogger. It is very likely that I would seriously consider the product recommended by blogger. If I were to make a decision I will certainly purchase the product recommended by blogger. It is highly probable I would suggest buying the product recommended by blogger.	Plotkina and Munzel (2016)