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Asian Journal of Business and Accounting

CONTENTS (continued)

Asian Journal of Business and Accounting

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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 Accounting* (*AJBA*) is excited to present the second issue of Volume 12 for 2019. In this issue, we present ten papers which provide an understanding on the challenges and uncertainties affecting businesses, and the strategies businesses use to cope with the crisis, and to sustain themselves. The contributors are from India, Taiwan, the Middle East, Korea, Indonesia, the Philippines and Malaysia.

Today's business is operating in an increasingly volatile, uncertain, complex and ambiguous environment but Asian businesses are no strangers to crisis and uncertainties. From two decades ago, they have been facing various challenges, such as the Asian financial crisis, political instability and market liberalisation. However, with the growth of the Asian economy and the integration with global markets, businesses are expected to face more frequent and complex crises in the future.

The global financial crisis of 2018 is regarded as the worst financial crisis occurring under the state of information asymmetry. Recognising the importance of this issue, the first paper by Ali-al-abada, Othman Yeong, Ruzita Abdul-Rahim and Mohd. Ezani Mat Hassan, investigate the interaction among information asymmetry, signalling variables and the initial returns of the IPO. Drawing upon 393 IPOs listed on Bursa Malaysia, the paper highlights two important signals – the auditor's reputation and the board's reputation which could reduce the initial performance of the IPOs in an environment of high information asymmetry. In the second paper, Rasha Abadi analyse risks factors that are commonly used to explain the stock excess returns in the Middle East and North Africa (MENA), a region which is less developed, less illiquid, less transparent and more dominated by the banking system. The paper proposes two additional risk factors: momentum and illiquidity, to be supplemented with Fama's three-factor model and French's five-factor model so as to examine the stock markets of the MENA region.

In the East-Asian countries, family ownership is predominant. There has also been much discussion among the International Monetary Fund (IMF) and the World Bank about family ownership as a primary cause of the financial crisis in 1997. Focussing on the Korean context,

the subsequent paper by Sang-Ho Kim and Yohan An examine the impact of family ownership on earnings quality in the post crisis period of 2000 to 2012. They found that family ownership is positively associated with earnings quality, value-relevance and accruals quality. However, ownership-control disparity does not reduce the earnings quality. This suggests that the controlling family shareholders of the *chaebol* firms have a dominant influence on firms which they invested in by using affiliated ownership. In a turbulent environment, the financial sustainability of a firm depends on the returns earned by shareholders through their investment. In the fourth article, Nishant Lubhane examines the impact of catering incentives of dividends on the propensity to pay dividends, and the dividend payout levels of listed firms in India during the period of 1994-95 to 2014-15, which is considered as India's period of liberalisation.

In relation to firms' financial earnings, it has also become commonplace for firms to practice tax avoidance as a business strategy to improve firm reputation and share prices. Recently, Korea has introduced a new tax policy called the trusted taxpayer's system, which focusses more on rewarding faithful tax payments rather than on punishing tax avoidances. In the next paper, Jung-Wha Suh, Ho-Young Lee, Arnold Edward Kuk and Hyunsoo Ryu uncover that firms designated as trusted taxpayers are less likely to avoid taxes than firms not designated. It also appears that firms with CEOs who come from founding families, firms that are non-SMEs (other than small and medium sized firms defined by the Small Business Act of Korea), and firms whose majority shareholder ownership is greater than the median, are less likely to avoid taxes.

The complexities and volatilities of the global environment have also pressured service firms to terminate their complacent approach, and to look for more strategic tools which can help them to remain competitive. Drawing upon the data collected from service firms in Malaysia, Gheyath Ghassan, Ruhanita Maelah, Amizawati Mohd Amir, and Mohammed Fadhil Farhan evaluate how the total quality management (TQM) approach, which had originated from the manufacturing industry, influenced organisational performance. The economic integration under the internalisation era has also posed risks to the human capital. They have caused leadership development of universities offering Accountancy Progammes in the Philippines to come under immense scrutiny. The next paper by John Christian Cha, James Thadeo

Calleja, Patrick Giorgio Mendoza, Jose Luis Yupangco and Rodiel C. Ferrer investigate how leadership styles, and the demographic profiles of academic administrators and faculty members can influence the university students' performance in the Board Licensure Examination for Certified Public Accountants (BLECPA) in the Philippines. The study found that different leadership styles promote different developments. There is no one-size fits all type of approach since different organisations may have different cultural values. Looking at the contemporary workplace setting and organisational leadership, Mingchang Wu, Deni Danial Kesa, and Chen-Ju Ko examine the interaction among organisational cohesiveness, power and culture. They note that in today's work environment, employees experience severe stress and high pressure as they face numerous challenges in performing work tasks. This situation has led to the importance of organisational cohesiveness, an element which helps employees to renew their energy.

The scale and scope of today's risks also require that business leaders be more thoughtful in devising strategies to support future plans. In the ninth paper, Harry Patria conducts a bibiliometric analysis on the intellectual structure, and the scientific evolution of strategic decision as a vision for researchers in the field. While social media has helped human beings to grow vastly; it has also served as a medium for electronic advertisements. Thus, social media may cause risks to businesses, if not well-managed. In relation to this, the final paper in this issue as written by Phang, Ing and Goh, Yee Shien, investigate how cognitive network and self-congruity affect offline brand outcomes of Instagram. Using data collected from Malaysian adults, the findings indicate that these brands must be categorised based on status and moral ties in order to target Instagram users who "follow" the brand.

The papers presented in this issue show that the environment is changing faster than ever before in many ways, thereby introducing new threats to businesses. This turbulent environment can be a difficult challenge for risk professionals. With business disruption being so common, unpredictable and expensive, organisations are required to respond to these risks aptly, and to find strategies to sustain themselves. It is believed that the ideas and recommendations offered in this issue could serve as important guidelines for organisations to address the emerging risks.

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 our editorial and advisory boards as well as the reviewers for their time and effort put into AJBA.

Happy reading!

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Asian Journal of Business and Accounting

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Information Asymmetry and Signalling in Emerging IPO Markets: The Case of Malaysia

Ali Albada*, Othman Yong, Ruzita Abdul-Rahim and
Mohd. Ezani Mat Hassan

ABSTRACT

Manuscript type: Research paper

Research aims: This study examines the effect of information asymmetry on the relationship between the signalling variables and the initial returns of IPO. The signalling variables examined include lock-up period, underwriter reputation, auditor reputation, and board reputation. This study also examines the ability of signalling variables in reducing information asymmetry (the average first ten days of Bid/Ask spread is used as proxy for information asymmetry) around listing firm's issues.

Design/Methodology/Approach: This study employs cross-sectional regression model to examine the influencing effect of information asymmetry on the relationship between signalling variables and initial returns of IPOs, and to investigate which of the signals are able to reduce the level of information asymmetry surrounding the listing firm's issues in the Malaysian IPO market. The study sample consists of 393 IPOs listed on Bursa Malaysia between January 2000 and December 2015.

Research findings: The results show that the effect of signalling variables is more pronounced on the initial performance of

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IPOs when in an environment of high information asymmetry. Evidence also indicates that board reputation is able to reduce the under-pricing cost borne by listing firms by lowering the level of information asymmetry regarding the listing firm's issues. Underwriter reputation is able to reduce the level of information asymmetry regarding listing firm's issues, but unable to influence the initial returns of IPOs. Further, auditor reputation is able to reduce the under-pricing cost, but unable to reduce the level of information asymmetry regarding the listing firm's issues. Finally, lock-up period is unable to reduce the level of information asymmetry as well as under-pricing with regards to the listing firm's issues.

Theoretical contribution/Originality: The effect of information asymmetry on the relationship between signalling variables and initial returns, and the effect of signalling variables on information asymmetry remains unexplored in the Malaysian IPO market. This gap is addressed by the current study.

Practitioner/Policy implication: The findings imply that underwriter reputation, auditor reputation, and board member reputation are important for determining the initial returns of the IPOs. They are also important for reducing the level of information asymmetry surrounding the listing firm's issues. Therefore, it is reasonable to suggest that information regarding these signals be disclosed completely to investors since current disclosure practices in Malaysia only embed fragmented information.

Research limitation/Implications: In the present study, the Bid/Ask spread is used as proxy for information asymmetry. Future studies should consider other indicators such as the heterogeneity of investors' opinion on the true value of the listing firm's issues. This is because the fixed price method provides no opportunity for prospective investors to reflect on their expectations and beliefs on the IPOs' issue price. As such, the fixed-price offering will have higher divergence of opinions among investors when compared to other pricing mechanisms such as the book-building method.

Keywords: Information Asymmetry, Initial Returns, Malaysia IPO Market, Signalling
JEL Classification: D53, D82, G11, G02, G24, N25

1. Introduction

The level of information asymmetry is high in the Malaysian Initial Public Offering (IPO) market (Yong, 2015; Mohd Rashid, Abdul-Rahim, & Yong, 2014.). In such an environment, low-value firms are, strictly,

better off than high-value firms (Akerlof, 1970). This situation causes high-value firms to withdraw from the market. Rock (1986) argued that uninformed investors are often challenged by this incident of information asymmetry, which is also the main cause of under-pricing in the IPO market (Yong, 2015). The higher the level of information asymmetry around the new issues involving the IPO, the more the under-pricing (Beatty & Ritter, 1986). It has been argued that the high level of information asymmetry in the Malaysian IPO market is caused by weak investor protection and corporate control (Yatim, 2011). In addition, the IPO market in Malaysia uses the fixed-price method in deciding the offer price of IPOs (Yong, 2015).

One possible measure to overcome the prevalence of information asymmetry is to invest in "actions" which low-quality firms do not find worthwhile imitating. These actions are called signals. Welch (1989) was among the first to propose a signalling model in which issuers use available information as a method to signal private information regarding the value and quality of their firms to prospective investors. Spence (1973) concluded that investors could make use of the available information in the prospectus to look for signals that are able to reduce their uncertainties about the prospect of the listing firms. The current study considers four signalling variables, which include underwriter reputation, auditor reputation, board reputation, and lock-up period due to their overall and individual contributions to the IPO literature.

Most Malaysian literature (such as Yong, 2015; Abdul-Rahim & Yong, 2010; Low & Yong, 2011) investigated the initial performance of IPOs through limited sets of unique variables such as institutional investor involvement, demands and supply of IPOs, and market conditions. The literature had fallen short of considering other variables, which the IPO literature deems significant in influencing the initial performance of IPOs, for instance, the reputation of the underwriter, auditor, board, and lock-up period. Moreover, there is scant Malaysian literature investigating the influencing effect of information asymmetry on the Malaysian IPO market. Most studies tend to only consider the relationship of the individual signal rather than the multidimensionality of the signalling environment. This leads to results which suffer from the lack of variable bias (Keasey & Short 1997).

Aiming to address this gap, the current study thus investigates the effect of information asymmetry on the relationship between the signalling variables used and under-pricing. In addition, this study also investigates the ability of the study signals in reducing the level

of information asymmetry around its respective shares (issues or IPO). The present study is also concerned with examining the overall effect of the signalling variables on the initial return of the IPOs. This is because, most past studies only considered the individual relationship of each signalling variable with the initial return, such as shareholder retention (Clarkson, Dontoh, Richardson, & Sefcik, 1991; Habib & Ljungqvist, 2001; Leland & Pyle, 1977), underwriter reputation (Dimovski, Phila-vanh, & Brooks, 2011; Kenourgios, Papathanasiou, & Melas, 2007), lock-up period (Michaely & Shaw, 1994; Mohd Rashid et al., 2014), auditor reputation (Michaely & Shaw, 1995), and board reputation (Certo, Daily, & Dalton, 2001; Yatim, 2011). It appears that their overall relationship had been overlooked. In this study, each of the signalling variables is selected due to their contribution to literature.

The first of these signalling variables, underwriter reputation is considered to be one of the major influencing factors on the initial performance of IPOs (Kenourgios et al., 2007; Dimovski et al. 2011). Some studies have investigated the relationship between underwriter reputation, and the initial return of IPO in the context of the Malaysian IPO market. For instance, Jelic, Saadouni and Briston (2001) studied a sample of 182 Malaysian IPOs from 1980 to 1995. Expanding on Jelic et al. (2001), the present study examines samples of Malaysian IPOs from 2000 to 2015, with the hope of uncovering new evidence, which can indicate the influencing effect of underwriter reputation on the initial returns of IPOs and information asymmetry.

The second signalling variable of board reputation is traced to Yatim's (2011) work, however, this study narrows the definition of board reputation as the independent non-executive director (INED) members of the board. The INED members are the focus of the current study because Bursa Malaysia Securities (BMS) has a set of criteria, which define the INED as outlined in its listing requirements. Such criteria help to safeguard the relationships and transactions that may impair the director's independence. Fama (1980) had argued that INEDs have an important role to play in monitoring management actions, and in providing valuable business networking and expert knowledge for management.

The third signalling variable is the lock-up period, a heavily regulated variable in the Malaysian IPO market where new issuing firms do not have the privilege of choosing the lock-up period for its firms respectively, whether one-year period before 2009, or six months' period after 2009. The firms also do not have the choice of implementing

the lock-up period for their own firms. For that reason, the current study aims to uncover whether the lock-up period still holds any relationship with the initial returns due to the mandatory regulation placed by the Securities Commission (SC). It is predicted that the signalling role of the lock-up period is not available in the Malaysian market due to the enforced regulation of the lock-up period.

The final signalling variable used is the auditor reputation. This study investigates the relationship that exists between auditor reputation and the initial returns of IPOs as noted by Yong (2007a) who mentioned that this is a lacking aspect in the Asian region.

The remainder of this paper is structured as follows: Section 2 discusses the literature and hypotheses of the study, Section 3 introduces the data and methodology employed, Section 4 presents the results, and Section 5 concludes.

2. Literature Review and Hypotheses

The IPO market in Malaysia is characterised by a high level of infor-mation asymmetry between prospective investors and the issuing firms (Yong, 2015; Mohd Rashid et al., 2014). This phenomenon can be attributed to the weak investor protection being practised (La Porta, Lopez-de Silanes, Shleifer, & Vishny, 2000), high family ownership concentrations (Claessens, Djankov, & Lang, 2000), and the inadequate corporate controls imposed by less-developed markets (La Porta et al., 2000). From the Malaysian perspective, Yatim (2011) had noted that the local equity market exhibited all of these institutional features which caused the level of under-pricing to be greater than other developed markets. From another perspective, Hemmer and Bardhan (2000) argued that the low level of institutional development in the Asian countries can be attributed to two causes: (1) the traditional institutions of exchange in developing countries seldom evolve into more complex rules (impersonal, open, legal rational) or institutions of enforcement, and (2) inequality in the distribution of power and resources caused by strategic distributive conflicts among different social groups. High-level information asymmetry in the Malaysian IPO market can also be attributed to the practice of the fixed-price mechanism used by listing firms. In the fixed-price method, the offer price of the issuing firm is already set by the lead investment banker even before the listing date. This deprives potential investors of the opportunity to acquire the necessary information. In contrast, the book-building and

auction offering methods permit issuing firms to extract information from the investors regarding the value of the IPO before setting up the offer price. Thus, the fixed-price method, which does not provide any opportunity for investors to reveal their private valuations of the new issue, will create a higher level information asymmetry as compared to other pricing mechanisms like book-building and auction offerings (Yong, 2015; Chowdhry & Sherman, 1996). Extending on this, Zhang, Zhang, Huang and Zhou (2015) asserted that under-pricing through the book-building method is much lower as compared to the fixed-priced mechanism. This is because the fixed-priced mechanism leads to higher level under-pricing (Yong, 2015). This had been proven by Chowdhry and Sherman (1996) whose model depicted that most of the Asian IPO markets using the fixed-price mechanism had more extreme under-pricing as compared to countries using the book-building method or the auction method to price their IPOs.

The Asian financial crisis of 1997 to 1998 has nonetheless, enabled the Malaysian capital market to develop a better regulatory framework and stronger infrastructure. Malaysia was able to do so through several initiatives. For instance, to mitigate the crisis, the SC introduced the Malaysian Code on Corporate Governance (MCCG) in 2000 (latest revision 2007). For strengthening the standards of investor protection, the SC issued the Capital Market Masterplan (CMP) in 2001; it focused on enhancing disclosure and governance standards. The Malaysian government, subsequently also introduced the Third Outline Perspective Plan 2001-2010 (OPP3) in April 2001; it promoted the idea of leapfrogging to a knowledge economy. Following this, the Malaysia Capital Market Masterplan was drafted to guide the development of Malaysia's capital market during the period of 2001-2010. The CMP laid out a structured and comprehensive reform plan that sought to establish new markets, asset classes, and intermediaries as well as to strengthen existing ones. The CMP was developed with the view to establish domestic capital markets that would be internationally competitive, and able to fulfil the needs of domestic issuers and investors, thereby facilitating long-term economic growth, in line with Malaysia's national development plans.

Of the 2001-2010 period overseen by the CMP, Malaysia had achieved notable successes in broadening and deepening its capital market; its corporate bond market grew steadily. Today, Malaysia's corporate bond market is much larger than those of most other emerging-market countries, comparable in size to those in many

developed countries. The key driver of this growth is traced to its Islamic bond market. Today, about 60 per cent of Malaysia's bond issuance is Sharia-compliant, and the Malaysian market also accounts for 60 per cent of the Islamic bonds issued worldwide presently. However, efforts to enhance the equity market have yielded many mixed results. The number of companies listed on Bursa Malaysia had declined in the past decade as represented in Figure 1.
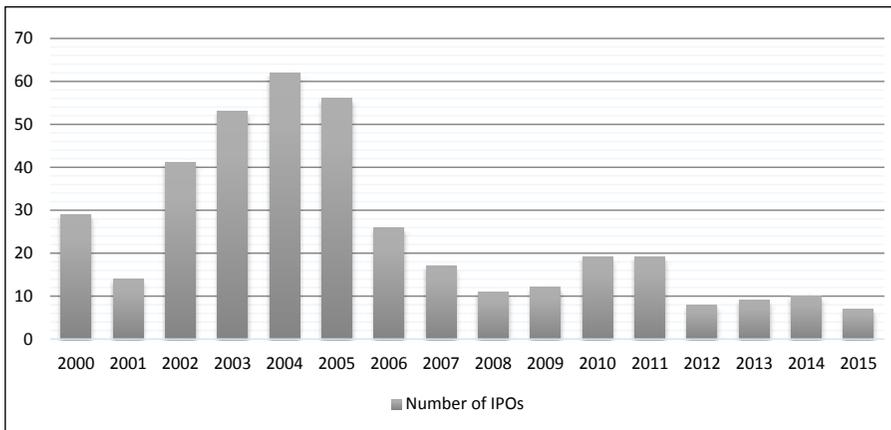
Figure 1: Number of IPOs Issued between January 2000 and December 2015

2.1 Initial Returns of IPO in Malaysia

The initial returns of the Malaysian IPO market taken from various study periods are illustrated in Figure 2, where the x-axis represents the period covered by each study.

In this figure, it seemed evident that there was a noticeable decline in the initial returns. This could be attributed to the strengthening of the regulatory environment by the Malaysian government as well as the strict impositions set by the investment banks which aimed to manage the listing process of the new issues more stringently. Abdul-Rahim and Yong (2008) mentioned that such a declining trend noted in the initial performance of IPOs in the Malaysian market could be associated with the SC's decision to liberalise the IPO pricing mechanism in 1996. It may also be due to various measurements taken by the SC and the Malaysian government in counteracting the adverse effect of the 1997/1998 Asian Financial Crisis.

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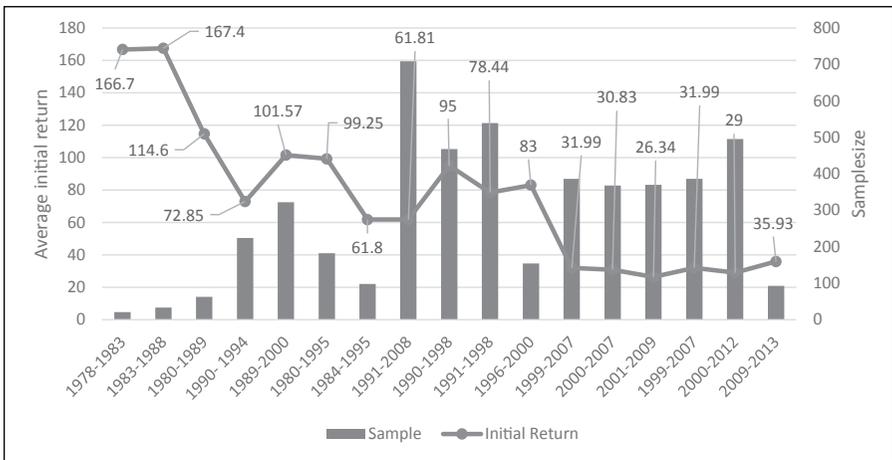
Figure 2: Average Initial Return of the Malaysian IPO Market
Source: Published articles as compiled by the authors.

Despite the efforts taken by both the government and the investment banks, it appeared that the average initial return in Malaysia was still high. From Figure 2, it can be noted that the most current initial return was around 35 per cent between 2009-2013, as shown by Yong (2015). This occurrence was probably caused by the high level of the information asymmetry. The result of the Malaysian IPO initial return was considered as high when compared to other Asia-Pacific IPO markets as shown in Figure 3. One possibility for the high initial returns could be due to the high information asymmetry in the IPO market (Allen & Faulhaber, 1989; Grinblatt & Hwang, 1989; Welch, 1989).
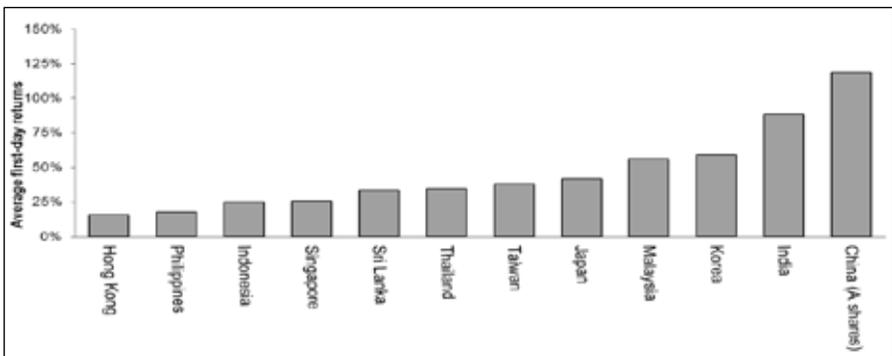
Figure 3: Average Initial Performance of Various Asia-Pacific IPO Markets
Source: Warrington College of Business (n.d.).

Another possibility is the weak legal enforcement in Malaysia (Rad & Embong, 2014).

2.2 Effect of Information Asymmetry on the Relationship between Signalling and Initial Returns

Information asymmetry is an issue that is closely connected to IPOs. As mentioned earlier, this occurs because prospective investors have limited access to the information of privately owned (unlisted) firms. Although issuing firms are obligated by law to disclose their information via the prospectus, potential investors may be unable to retrieve the information they desire due to the over-informative report provided by the prospectus (Spence, 1976; Mohd Rashid et al., 2014). Consequently, investors search for alternative signals to evaluate the issuing firm's value (Mohd Rashid et al., 2014). This behaviour could cause an increase in the information asymmetry in the IPO market. There is significant empirical evidence indicating that in the case of severe asymmetric information, the insiders' behaviour may be used to gauge stock prices. This conjecture is consistent with the argument forwarded by Carter and Manaster (1990) and Leland and Pyle (1977) who mentioned that the signalling hypothesis is becoming more critical in an environment characterised by severe information asymmetry. Based on the previous argument, the following hypotheses are developed:

H_{1a}: The effect of the lock-up period will be greater on the initial return in the case of high information asymmetry versus low information asymmetry.

H_{2a}: The effect of the underwriter reputation will be greater on the initial return in the case of high information asymmetry versus low information asymmetry.

H_{3a}: The effect of the auditor reputation will be greater on the initial return in the case of high information asymmetry versus low information asymmetry.

H_{4a}: The effect of the board reputation will be greater on the initial return in the case of high information asymmetry versus low information asymmetry.

2.3 Relationship between Signalling and Information Asymmetry

Ritter and Welch (2002) argued that issuing firms could reduce the level of ex-ante uncertainty through signalling, which in turn helps to lower

the level of information asymmetry surrounding the listing firm's issues. The literature has shown that the signalling variables chosen by the current study can help to reduce the level of information asymmetry in the IPO market by signalling the quality of the issuing firm. For instance, reputable underwriters can make estimations and reveal information regarding the issuing firms they underwrite. Consequently, this helps to reduce the informational asymmetry (Beckman, Garner, Marshall, & Okamura, 2001). Another example is the lock-up period which can be used to display information about the interest and confidence of pre-IPO shareholders on the future of the firm. The lock-up period can be used as a signal to reduce the information asymmetry surrounding the listing firm's issues (Mohd Rashid et al., 2014). Following this, Hearn (2013) argued that auditor's disclosures can also mitigate the level of information asymmetry surrounding the listing firm's issues by reducing the agency costs, thereby improving the relationship between the pre-IPO shareholders and the firm managers. Finally, board reputation is observed to reduce the level of information asymmetry surrounding listing firm's issues because of the board's effective monitoring mechanism in enhancing the value of the issuing firms, thereby maintaining their reputation (Certo et al. 2001; Yatim, 2011). Building on the previous discussion, the issuing firms can use the study signals to decrease the level of ex-ante uncertainty, hence reduce information asymmetry. Therefore, the present study hypothesises the following:

H_{1b}: Lock-up period has a negative relationship with after-market spread.

H_{2b}: Underwriter reputation has a negative relationship with after-market spread

H_{3b}: Auditor reputation has a negative relationship with after-market spread.

H_{4b}: Board reputation has a negative relationship with after-market spread.

3. Data and Methodology

The IPOs served as the focus of the present study. Prior to selecting them, it is worth mentioning that the Malaysian IPO market consists of unique types of issues, such as restricted offer-for-sale issue, restricted public issue, restricted offer-for-sale issue to eligible employees, restricted offer-for-sale issue to Bumiputera (Malays and indigenous

people) investors, special and restricted issues to Bumiputera investors, tender offers, and special issues. During the period of this study, from January 2000 to December 2015, 544 IPOs were reviewed. The samples comprised IPOs which fall under the following types of issues: public issues, private placements, and offer-for-sale issue, or a hybrid of any of these types of issues. The selection of the IPOs was based on Abdul-Rahim and Yong (2010), Yong (2007b), and Mohd Rashid et al. (2014). The final sample excluded those unique types of issues because they were not available for subscription by the public. This practice was in accordance to Abdul Rahim and Yong (2010) and Yong (2007b), who recommended that they be excluded from the samples so as to avoid un-meaningful outcomes.

The information used in this study was retrieved from various sources: (1) Bursa Malaysia website (http://www.bursamalaysia.com/initial-public-offerings/), (2) KLSE Info website (http://www.klse.info/counters/historical-prices/), (3) Yahoo Finance Singapore web-site (https://sg.finance.yahoo.com), and (4) the *Star Online* website (http://biz.thestar.com.my/marketwatch/ipo). The data for the over-subscription ratio were not readily available, hence we relied on various newspaper reports such as the *Star Online* (http://www.thestar.com/business/business-news), and one-million dollar blog (http://1-million-dollar-blog.com/category/stock-market/initial-public-offering).

The present study excluded the Real Estate Investment Trust (REIT) category since this type of issue consists of a different presentation format of financial statements (Mohd Rashid et al., 2014). A further twenty-seven IPOs which were extreme outliers were also excluded, using studentised residuals (Ruppert, 2004) and DFITS, and Cook's distance (Rahman, Sathik, & Kannan, 2012). These two approaches enable the simultaneous detection of both the extreme outliers and other influential observations. The rule of thumb for this procedure is to remove the outliers only if they are also influential since outliers will be able to influence the regression model only in such cases. Consequently, the final sample consisted of only 393 (420 – 27) IPOs. However, this study was unable to collect the data for the entire lot of 393 IPOs because the DataStream database was only able to provide the Bid/Ask spreads for 313 IPOs, hence the total number used comprised 313 only.

The first part of this study is to classify the study samples into two groups, based on company size, and board listing. Both are considered as control variables because of their ability to proxy the level of information asymmetry in the IPO market (Yung & Zender 2010; Yong 2015). Prior

to this, however, the relationship between the signalling variables and the IPO initial returns need to be investigated. This was achieved by using the 393 study sample. The process is necessary for ensuring that the effect of the signalling variable on the initial return is consistent, even after the study samples are segregated. The two sub-samples comprised of the low information asymmetry and the high information asymmetry. One sub-sample simulated an environment of high information asymmetry while the other sub-sample simulated an environment of low information asymmetry. The purpose of the segregation is to determine which signal serves as the most influential on the initial performance of the IPOs in an environment of high information asymmetry, as is exemplified by the Malaysian IPO market currently.

Two variables were utilised to segregate the study sample. The first variable was company size. This was calculated by multiplying the offer size of the issues with the closing price of the first day of listing (Chahine, Filatotchev, & Zahra, 2011; Chambers & Dimson, 2009). According to Yung and Zender (2010), the offer size can reflect the issuing firm's value, thus it can be used to construct a proxy to reflect the level of information asymmetry. The size-based sorting approach had been used by Agarwal, Liu, and Rhee (2008), while using company size as a proxy for information asymmetry had been utilised by Beatty and Ritter (1986), Barclay and Smith (1995), and Goergen, Renneboog and Khurshed (2006). They argued that company size is suitable because younger and smaller firms tend to be exposed to greater uncertainty. Therefore, the current study used the size of the issuing firms as the first variable, and two groups were assigned. The first group was composed of small issuing firms (< RM27m) which were assigned the small-sized portfolios (i.e. high asymmetric information portfolio). The second group comprised big issuing firms (> RM27m) which were assigned the large-sized portfolios (i.e. low asymmetric information portfolio).

The second variable used to segregate the study sample was firm's listing board. The listing board is believed to be a better proxy for capturing the level of information asymmetry in the Malaysian market because the listing board in the Malaysian IPO market is of two categories – the ACE Market and the Main Market. Yong (2015) emphasised that IPO firms that are on the ACE Market are deemed riskier than those on the Main Market because they tended to be more speculative in nature. Therefore, ACE Market firms are surrounded by a greater level of uncertainty. ACE Market firms have been comparatively small. They do not have sufficient tracking records information, and

such firms have difficulties in securing conventional sources of financing (Yong, 2015). Due to these characteristics, the IPOs listed on the ACE Market are very difficult to be valued; hence, they are exposed to greater valuation uncertainties. Bessembinder, Hao, and Zheng (2015) also associated younger, smaller, and growth-oriented firms to be of high uncertainty in their fundamental values, hence higher levels of information asymmetry. It is anticipated that segregation of the samples based on listing board would be more efficient at gauging the level of information asymmetry.

Equation (1) represents a cross-sectional regression model which is needed to identify the study signals that are more influential on the initial performance of the IPOs in an environment of high information asymmetry such as Malaysia.

$$IR = \alpha + \beta_1 LP_i + \beta_2 UR_i + \beta_3 AR_i + \beta_4 BR_i + \beta_5 OFFSZ_i + \beta_6 OSR_i + \beta_7 PRIV_i +$$

$$\beta_8 MKTCON_i + \varepsilon_i \tag{1}$$

where *IR* is the initial return (offer-to-open), calculated by finding the difference between the opening price and offer price divided by the offer price during the first day of listing. *LP* is the lock-up period which is calculated by taking the natural log of the lock-up period for every IPO firm (in days). *UR* is the underwriter reputation, which is proxied by a dummy variable that takes a value of 1 if Big 5 and 0, otherwise. *AR* is the auditor reputation, which is proxied by a dummy variable that takes a value of 1 if Big 5 and 0, otherwise. In this regard, the third variable used in the current study are the underwriter's reputation and the auditor's reputation. Both were measured through the proportion of the number of issues an investment bank (auditing firm) has underwritten (audited) as lead manager (lead auditor). This method had been used by Jelic et al. (2001), and Dimovski et al. (2011) to measure the underwriter's reputation, and by King and Peng (2006), and Megginson and Weiss (1991) to measure the auditor's reputation. The fourth variable is board reputation or *BR*, which was proxied by the overall number of directorships held by the INED members. The present study focuses on the INED members because they can convey the quality of the issuing firms, which then leads to a reduction in IPO under-pricing as prospective investors tend to believe that the prestigious INEDs are well informed about the future of the issuing firms. Fama (1980) had argued that INEDs have an important role to play in monitoring the actions of the management, in providing valuable business networking and expert

knowledge for the management of the firm. It is thus argued that the higher the number of INED members on the board, the more reputable the board becomes.

Following the four signalling variables, the current study used four control variables. The first comprised *OFFSZ* as the natural log of the offer-size, which indicated the supply of the IPOs. The second was *OSR*, proxied by the over-subscription ratio, which was used as a measure of the investors' demand on IPOs because it can indicate the amount of times the IPO was oversubscribed. The third was *PRIV* which was the institutional investor involvement; it was represented by a dummy variable that takes the value of 1 to represent firms with private placement, and zero, otherwise. The fourth was *MKTCON* which was the market condition proxied by the EMAS Index which was a capitalisation weighted index. The index comprised the large and mid-cap constituents of the FTSE Bursa Malaysia 100 Index and the FTSE Bursa Malaysia Small Cap Index. The index was developed with a base value of 6000 as of March 31, 2006. Following Mahmood, Xia, Ali, Usman and Shahid (2011), the present study measured the contemporaneous market conditions on the listing date by using Equation (2) as follows:

$$MKTCON_{Listing} = (\frac{PI_{LISTING} - PI_{OFFER}}{PI_{OFFER}}) \qquad (2)$$

where,

$PI_{LISTING}$ = EMAS Price Index on the day of listing, and

PI_{OFFER} = EMAS Price Index on the day of offerings.

The second part of this study is to investigate which of the study signals are able to reduce the level of information asymmetry around its issues. In an environment of high information asymmetry such as Malaysia, investors would need as much information as possible to help them identify high-quality issues for investment. On the other hand, issuing firms need to use reliable signals to reflect their quality to potential investors within a high information asymmetry market. Equation (3) thus enables this study to investigate which of the study signals is able to perform the function of reducing the level of information asymmetry around their issues by having a negative relationship with the spread, which was used to proxy the level of information asymmetry in the Malaysian market. The equation is as follows:

$$Spread_i = \alpha + \beta_1 LP_i + \beta_2 UR_i + \beta_3 AR_i + \beta_4 BR_i + \beta_5 FSize_i + \beta_6 LBoard_i + \varepsilon_i \qquad (3)$$

where *Spread* is the average Bid/Ask spread of the ten days after the first day of IPO. *FSize* is the size of the issuing firm, which is represented by a dummy variable that takes 1 for (> RM27m) and 0 for others. *LBoard* is the listing board of the issuing firm, which is represented by a dummy variable that takes 1 for issues listed on the Main Market and 0 for others.

Armstrong, Core, Taylor, and Verrecchia (2011) reported that information asymmetry could be investigated through several accounting and market-based measurements which have been used in the literature including the Bid/Ask spread (Greenstein & Sami 1994; Armstrong et al., 2011), Probability of Informed Trade (PIN) (Easley, Hvidkjaer, & O'Hara, 2002; Boehmer, Grammig, & Theissen, 2007), news or media coverage (Duarte, Han, Harford, & Young, 2008), and analyst coverage (Armstrong et al., 2011). Of all these methods, it is argued that the Bid/Ask spread is the most reliable market-based measurement (Greenstein & Sami, 1994; Armstrong et al., 2011). It is further verified that the Bid/Ask spread is more superior in measuring information asymmetry (Leuz & Verrecchia, 2000; Yoon, Zo, & Ciganek, 2011).

Through Equation (1) and Equation (3), this study will be able to identify which signals in the Malaysian IPO market is capable of influencing the initial performance of the IPOs in an environment of high information asymmetry, as well as reducing the level of information asymmetry around the issues.

4.   Results and Discussion

Table 1 presents the descriptive statistics derived from the calculation. They are based on the final samples of 393 IPOs. The average initial return of the IPOs is about 33.8 per cent. This value is slightly higher

Table 1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Offer price (RM)	393	0.971	0.658	0.12	4.8
Opening price (RM)	393	1.277	0.970	0.17	7
Initial return (%)	393	33.755	41.143	-21.481	288.889
Company size (RM, million)	393	43.4	58.9	2.25	811.4
Offer size(Unit offered, million)	393	45.6	60.1	2.0	675.0
Over-subscription ratio (%)	393	33.627	50.291	-0.890	377.960
Market condition (%)	393	0.667	4.625	-20.001	12.986

than the 26.34 per cent average offer-to-open initial returns covering the period of 2001 to 2009 (Yong, 2011), the 29 per cent average initial returns covering the period of 2000 to 2012 (Mohd Rashid et al., 2014), the 30 per cent average initial returns covering the period of 2003 to 2008 (Abdul-Rahim, Sapian, Yong, & Auzairy, 2013), as well as the 30.83 per cent average initial returns for the period of 2000 to 2007 (Low & Yong, 2011).

4.1 Information Asymmetry Effect on the Relationship between Signalling Variables and Initial Returns

This section focuses on the effect of the information asymmetry on the main relationship between the four signalling variables and the initial performance of the IPOs. Table 2 shows the relationship between the signalling variables and the initial returns of the IPO using the entire study samples of 393 IPOs.

The results show that both the auditor reputation and board reputation have a significant negative relationship with under-pricing as signalling variables. Additionally, the listing board is found to have a significant negative relationship with the IPO's initial performance.

Table 2: Cross-sectional Regression Results for the Whole Study Sample (N=393)

Variable Dependent variable: Initial return (neglog)[a]	Coef.	t-statistics	p-value
Lock-up period (LN)	-0.004	-0.11	0.911
Big5 underwriters (D)	0.257	1.44	0.152
Big5 auditors (D)	-0.412	-2.53	0.012
Board reputation (D)	-0.256	-2.68	0.008
Company size (D)	0.125	0.71	0.478
Listing board (D)	-0.789	-4.69	0.000
Constant	3.872	11.15	0.000
Number of observations	393		
F-value	7.98**		
Adj. R-squared	0.087		

Notes: [a] The neglog is a transformation method proposed by Whittaker, Whitehead and Somers (2005) to handle the log transformation of negative values. D stands for dummy variable. LN stands for natural logarithm transformation method. ** Significant at the 1 per cent level.

This shows that the IPOs listed on the Main Market have lower under-pricing than IPOs listed on the ACE Market. The reason is that the level of information asymmetry around the Main Market is lower. However, this initial analysis is still unable to indicate whether the signalling variables of the study have the same influence on the initial performance of the IPOs when measured in different environments (High vs. Low information asymmetry environment). More is further discussed below.

4.1.1 Segregation of the Study Samples Based on the Market Capitalisation

As mentioned above, the study samples of 393 IPOs comprised two sub-samples based on the market capitalisation proxy. The first sub-sample is the large-sized issuing firms (environment of low information asymmetry) which comprise of 197 IPOs and the second sub-sample is the small-sized issuing firms (environment of high information asymmetry) which comprise of 196 IPOs. To further investigate the pronounce effect of the signalling variables within an environment of high level information asymmetry versus an environment of low level information asymmetry, the coefficients of each signalling variable for both environments were compared. Table 3 further illustrates.

The results indicate that the Big 5 reputable auditors have a coefficient of –0.427 in Panel B (with a t-statistics of –2.44, significant at the 1 per cent level). This is higher than the coefficient (–0.158) of the Big 5 reputable auditors in Panel A (with a t-statistics of –0.71, not significant). The coefficient results show that reputable auditors have a larger and more significant negative effect on initial returns when using the sample of high information asymmetry versus the sample of low information asymmetry. This outcome confirms H_{3a}. Furthermore, board reputation (with a coefficient of –0.013 in Panel A, and –0.384 in Panel B) has a higher-value coefficient in the sample for high information asymmetry rather than in the low information asymmetry. This confirms hypotheses H_{4a}.

The Big 5 reputable underwriters have a coefficient of 0.252 in Panel A, which is slightly higher than the Big 5 reputable underwriters coefficient of 0.216 in Panel B. The results contradict hypothesis H_{2a}. Furthermore, the lock-up period (with a coefficient of –0.075 in Panel A, and 0.041 in Panel B) shows a higher-value coefficient among the samples of low information asymmetry when compared to those of high information asymmetry. This also contradicts hypothesis H_{1a}.

Table 3: Cross-sectional Regression Results for Big IPO Firms (N=197) and
         Small IPO Firms (N=196)

Variable Dependent variable: Initial return (neglog)[a]	Panel A Large-sized issuing firms	Panel B Small-sized issuing firms
Lockup period (LN)	-0.075	0.041
	(-1.87)	(0.69)
Big5 underwriters (D)	0.252	0.216
	(1.13)	(1.14)
Big5 auditors (D)	-0.158	-0.427
	(-0.71)	(-2.44)**
Board reputation	-0.013	-0.384
	(-0.12)	(-3.27)**
Supply of IPOs (LN)	-0.926	-0.495
	(-4.77)**	(-2.51)**
OSR (per cent)	0.011	0.010
	(3.15)**	(5.86)**
Market conditions (neglog)	0.349	0.272
	(4.65)**	(3.82)**
Private placement (D)	-0.409	-0.261
	(-1.45)	(-1.25)
Constant	19.014	11.413
	(5.57)**	(3.48)**
Number of observations	197	196
F-value	9.75**	10.59**
Adj. R-squared	0.377	0.331

Notes: [a] The neglog is a transformation method proposed by Whittaker et al. (2005) to handle the log transformation of negative values. D stands for dummy variable. LN stands for natural logarithm transformation method. t-statistics between brackets. ** Significant at the 1 per cent level.

4.1.2 Segregation of the Study Samples Based on the Listing Board

The Malaysian IPO market had previously consisted of three listing boards – the Main Board, Second Board, and MESDAQ. After August 2009, the Main Board and Second Board were merged into the Main Market, and MESDAQ was re-branded as the ACE Market. The categorisation of the listing board of the new issuing firms was based on the new

listing requirements after August 2009. This means that all of the IPOs before August 2009 would be categorised into the Main Market or ACE Market only. Based on the listing board, the segregated study samples consist of 259 IPOs in the Main Market and 134 IPOs in the ACE Market. Analysis of the data further indicates that all of the four signalling variables applied in the current study (lock-up period, underwriter reputation, auditor reputation, and board reputation) have scored a higher coefficient in the ACE Market samples than in the Main Market samples. Table 4 further presents.

Table 4: Cross-sectional Regression Results for IPOs Listed on Main Market (N=259) and ACE Market (N=134)

Variable Dependent variable: Initial return (neglog)[a]	Panel A Main Market	Panel B ACE Market
Lock-up period (LN)	-0.031 (-0.82)	-0.104 (-1.21)
Big5 underwriters (D)	0.170 0.92	0.291 (1.26)
Big5 auditors (D)	-0.153 (-0.86)	-0.665 (-2.80)**
Board reputation	-0.088 (-0.88)	-0.508 (-3.02)**
Supply of IPOs (LN)	-0.399 (-3.07)**	-0.223 (-0.97)
OSR (per cent)	0.017 (2.65)**	0.008 (5.63)**
Market conditions (neglog)	0.345 (5.84)**	0.237 (2.00)**
Private placement (D)	-0.475 (-2.38)	-0.330 (-0.70)
Constant	9.499 (4.14)**	8.536 (2.09)**
Number of observations	259	134
F-value	9.250**	4.660**
Adj. R-squared	0.321	0.295

Notes: [a] The neglog is a transformation method proposed by Whittaker et al. (2005) to handle the log transformation of negative values. D stands for dummy variable. LN stands for natural logarithm transformation method. t-statistics between brackets. ** Significant at the 1 per cent level.

The results confirm all the hypotheses of H_{1a}, H_{2a}, H_{3a} and H_{4a}. This indicates that the influence of the lock-up period, underwriter reputation, auditor reputation and board reputation on initial returns of the IPOs would be noticeable in the high information asymmetry environment rather than in the low information asymmetry environment. The results also show that the listing board proxy produces better outcomes than the market capitalisation proxy when segregating the study samples to measure the effect of information asymmetry on the relationship between the signalling variables and the initial returns. Building on the previous results of the two proxies, the current study suggests that the listing board proxy is a better measurement for information asymmetry in the Malaysian IPO market than the market capitalisation proxy. In an environment of low information asymmetry, the results show that all the four signalling variables do not influence the initial performance of the IPOs (see Panel A in Table 3 and Table 4). Underwriter reputation and auditor reputation are observed to have no significant relationship with the initial returns. This is because investors expect large-sized issuing firms to employ the best underwriter and the best auditing firm by default. The percentage of the issuing firms that have underwritten their issues using the Big 5 reputable underwriters is around 94 per cent, and the percentage of the issuing firms that have hired a Big 5 reputable auditor is around 80 per cent. In an environment of high information asymmetry, the results show that auditor reputation and board reputation influence the initial performance of the IPOs (see Panel B in Table 3 and Table 4). The results show that auditor reputation and board reputation have a significant negative relationship with initial returns of the IPOs. Beatty and Ritter (1986) found that IPO firms with less risk tended to hire Big Eight auditing firms, which helped in reducing under-pricing. Certo et al. (2001), and Cohen and Dean (2005) have documented that new issuing firms use multiple board memberships to signal their firms' quality, and this is likely to develop a negative relationship with the initial returns of the IPOs.

However, the lock-up period and underwriter reputation are observed to have no significant relationship with the initial returns in both analyses. Underwriter reputation signal does not show any sign of significance because the percentage of large-size and small-size issuing firms with reputable underwriters were 94 per cent and 90 per cent, respectively. This means that most of the new issuing firms have underwritten their issues by using reputable underwriters. This, in turn, has caused investors to overlook this signal as helpful information for

identifying good investment characteristics. Furthermore, the lock-up period is noted to have no significant relationship with initial returns because all the issuing firms had the same lock-up period (1 year before August 2009 and 6 months after August 2009). Consequently, prospective investors do not feel the need to pay any further attention to this particular information.

4.2 Relationship between Signalling and Information Asymmetry (spread)

The Big 5 underwriters show a significant negative relationship with the after-market spread. This outcome indicates that issues associated with prestigious underwriters could serve as a signal to prospective investors regarding the magnitude of risk associated with the issues, hence help to reduce information asymmetry around these issues. Paudyal, Saadouni and Briston (1998) had documented that long-term investments were significantly better for new issuing firms with prestigious underwriters than those with less reputable underwriters. Neuberger and Chapelle (1983) had divided these underwriters into three groups depending on their level of prestige in the market, and they concluded that prestigious underwriters reduced information asymmetry in the IPO market. Table 5 displays the results of the cross-sectional regression where equation (3) was applied.

Table 5: Cross-sectional Regression Results for (313 IPOs) Using Spread as the Dependent Variable

Variable Dependent variable: Spread	Coef.	t-statistic	p-value
Lock-up period (LN)	0.017839	1.64	0.101
Big5 underwriters (D)	-0.12994	-2.18	0.030
Big5 auditors (D)	0.080177	1.42	0.157
Board reputation	-0.05281	-1.72	0.087
Listing board (D)	-0.42531	-5.93	0.000
Firm size (D)	-0.16771	-2.78	0.006
Constant	1.585524	14.37	0.000
Number of observations	313		
F-value	14.64**		
Adjusted R-squared	0.2447		

Notes: D stands for dummy variable. LN stands for natural logarithm transformation method. ** Significant at the 1 per cent level.

The results shown in Table 5 indicate that board reputation has a significant relationship with after-market spread in a negative way. Fama (1980) had argued that INEDs can convey the quality of the issuing firms because they play an important role in monitoring the actions of the management, and in providing valuable business networking and expert knowledge for the firm's management. Based on this, board reputation is able to reduce the level of information asymmetry around its issues.

The lock-up period is found to have a significant relationship with the after-market spread in a positive way. In their study, Yung and Zender (2010) had concluded that when no correlation occurs between the lock-up period and the initial returns, it means that the length of the lock-up period had been used to solve the moral hazard problem. The results in Table 3 and Table 4 of the present study show that there is no correlation between the lock-up period, and the initial returns. This outcome indicates that the lock-up period has been used as a commitment device to reduce the moral hazard problems.

Specifically, Brav and Gompers (2003) argued that the lock-up period served as a precaution measurement against after-market insider actions. They also concluded that after-market insiders may not act in the best interest of the shareholders. Therefore, the lock-up period is implemented to convince the public that the insiders' ability to take advantage of shareholders has been reduced, hence public investors would be more willing to buy into the offering. Building on the previous argument, this study therefore concludes that the lock-up period in the Malaysian IPO market is not used to signal the quality of the issuing firms. Instead, it is used as a commitment device. For this reason, the lock-up period does not show a negative relationship with the spread.

Finally, auditor reputation does not make the cut. Rad and Embong (2014) had argued that the adoption of the IFRS in Malaysia is not that prevalent because for the IFRS to be adopted by accounting numbers and financial issues, strong legal enforcement needs to be implemented within Malaysia. Based on the results, it can be deduced that the current study is able to support two out of four hypotheses developed, which comprised hypothesis H_{2b}, and H_{4b}.

5. Conclusion and Implications

This study investigates the influencing effect of information asymmetry on the relationship between the signalling variables and the initial returns of Malaysian IPOs. This study has also investigated the influencing

effect of the signalling variables (i.e. underwriter reputation, auditor reputation, board reputation and lock-up period) on information asymmetry. The study samples comprised 393 IPOs listed on the Bursa Malaysia from January 2000 to December 2015. The results derived show that the listing board is a better proxy than market capitalisation for the level of information asymmetry. Further, the results indicate that the effect of the signalling variables on the initial performance of IPOs is more pronounced in an environment of high information asymmetry. Nonetheless, only two signals managed to reduce the initial performance of the IPOs in an environment of high information asymmetry – the auditor reputation and the board reputation. The results also show that underwriter reputation and board reputation have a negative relationship with the Bid/Ask spread. This implies that these signals can reduce the level of information asymmetry around their issues.

Board reputation which is represented by the independent non-executive board members in the board is able to reduce the under-pricing cost which the listing firm had to bear during listing. This is achieved by lowering the level of information asymmetry around its issues. This means that both the investors and the issuing firms should hold INEDs board members in high regard because they have the ability to signal to prospective investors the quality of the issuing firms, thereby reducing the level of information asymmetry surrounding the listing firms. Underwriter reputation is able to reduce the level of information asymmetry around its issues, but unable to influence the initial returns of IPOs due to the lack of competitive pressure among underwriters in the Malaysian market (Jelic et al., 2001). Auditor reputation is able to reduce the under-pricing cost around its issues but unable to reduce the level of information asymmetry around its issues. This has been documented by Hogan (1997) and Willenborg (1999) – both have noted a negative relationship between auditor reputation and initial returns because reputable auditors are able to reduce the cost of the initial purchases of securities. This is achieved by reducing the measurement error which was related to the issuing firm's expected earnings (Lennox, 1999). However, auditor reputation is unable to reduce the level of information asymmetry around its issues because it required a stronger legal enforcement (Rad & Embong, 2014). Finally, the results shows that the lock-up period is unable to reduce the level of information asymmetry and under-pricing around its issues. This is probably due to the mandatory regulations enforced on the new issuing firms with

regards to the lock-up period. This enforcement has probably led to the lock-up period to be used as a commitment device to protect investors (Yung & Zender, 2010).

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Common Risk Factors in Stock Returns in the MENA Region

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ABSTRACT

Manuscript type: Research paper

Research aims: This paper examines risk factors comprising size, value, profitability, investment, momentum and illiquidity to see if they are relevant for the stock markets in the Middle East and North Africa (MENA) region.

Design/Methodology/Approach: Stock market data, from January 2007 to December 2015, are used to construct the risk factors for the stock market in the MENA region. The single factor models and the multifactor models are used to explain the constructed portfolios' excess returns.

Research findings: Findings show that the risk factors of size, value and profitability are the most important to be applied in asset pricing models within the MENA region. In addition, most of the models analysed in this study are unable to perfectly capture the average excess returns of the datasets, with the seven-factor model performing better than the other competing models.

Theoretical contribution/Originality: This paper is possibly one of the first to construct and apply the above-mentioned risk factors in the MENA markets. It further proposes using two additional risk factors, such as momentum and illiquidity, within the Fama and

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French's three-factor and five-factor models so as to examine the stock markets of the MENA region. Other researchers before have not made this proposition.

Practitioner/Policy implication: The findings raise the awareness that additional and important factors must be considered by investors in the emerging financial markets when they want to diversify the risks so as to achieve higher excess returns.

Research limitation/Implications: This study also has some drawbacks in that the dataset period is short while the analysis comprises different markets with different levels of development, thereby affecting some degree of generalisability.

Keywords: CAPM, Factor Models, Illiquidity Factor, MENA Market
JEL Classification: G12

1. Introduction

Early empirical studies have revealed that the capital asset pricing model (CAPM) has not performed efficiently in the stock market (Fama & French, 1992; Basu, 1983; Banz, 1981). Many academics and practitioners claim that the simple CAPM cannot fully capture the cross-sectional components of various stock returns. Past studies have shown that using a combination of risk factors is better for explaining stock excess returns than using a single factor model. This insight has led to the development of multifactor models which use more than one priced risk factor in a classic model, such as the CAPM by combining it with other market factors. These market factors may include size and value (Fama & French, 1993), lagged momentum (Jegadeesh & Titman, 1993; Carhart, 1997), profitability and investment (Fama & French, 2015), and illiquidity (Amihud, 2002).

The first three-factor model proposed by Fama and French (1993) had been successful in capturing stock excess returns, but Brailsford, Gaunt and O'Brien (2012) stated that it does not explain the non-linear relationship between size and returns. Nonetheless, Fama and French's three-factor model outperformed the CAPM in explaining the average stock returns. In that regard, Fama and French's three-factor model was not considered a complete model, hence more factors were added. Carhart (1997) extended the three-factor model by adding momentum while Amihud (2002) added the illiquidity factor, so as to explain stock returns. Fama and French (2015) then added the profitability factor which was first proposed by Novy-Marx (2013), and the investment factor, which was first introduced by Aharoni, Grundy and Zeng (2013),

in the effort to combine all these factors into one model, the new five-factor model. This new model was noted by Fama and French (2015) to perform well in explaining the average excess returns. However, it was unable to fully capture all the excess returns. Following this, Hou, Xue and Zhang (2015) proposed the q-factor model (a four-factor model) which combined the profitability, investment, market and size factors together. Their findings revealed that the q-factor model outperformed Fama and French's (1993) three-factor model, and Carhart's (1997) four-factor model, in explaining the market anomalies. Several studies have highlighted the importance of all these risk factors mentioned above, but this was exclusively for the US and other developed markets. Emerging markets have not been studied at the same level in detail despite the fact that emerging stock markets have an important role to play within the world portfolio. The importance of such emerging economies, and stock markets are constantly increasing (Hanauer & Linhart, 2015), hence such markets should not exist in obscurity.

The current study aims to address part of that issue by giving focus to the Middle East and North Africa (MENA) markets as emerging markets. Comparatively, the MENA markets are less developed than the Asian or Latin American markets. Additionally, they are also relatively small, illiquid, less transparent and mainly dominated by the banking system (Lagoarde-Segot & Lucey, 2008). The MENA markets are also characterised by attributes such as economic, currency, liquidity, institutional and political risks. They are also seen to be less efficient markets with a high proportion of small companies that play a fundamental role in asset allocations. Despite all these characteristics of the MENA region, it seems pertinent to ask if those risk factors found in developed and other developing markets may also affect the equity markets of the MENA region. Thus far, there are no sources available to update the risk factors of the stock markets in the MENA region. For the purpose of this study, we computed our own risk factors so as to examine the risk factors which are most frequently used to explain the stock excess returns in the MENA region. This study is motivated by previous discussions on using alternative asset pricing models to explain stock excess returns, and on using different datasets to validate these factor models. In this study, we analyse the effects of the size, value, profitability, investment, momentum and illiquidity factor on the stock markets of the MENA region.

It is anticipated that this study would contribute to knowledge on risk factors of the equity markets in the following ways. First, to the best of our knowledge, this paper is one of the first few to analyse Fama and

French's (2015) five-factor model in the MENA markets. Second, this study proposes additional risk factors such as momentum and illiquidity to be added to Fama and French's (1993) three-factor model and Fama and French's (2015) five-factor model in the context of the MENA region. Third, the construction of these factors serves as the first step in creating a database for the MENA region. This database is similar to that of the Fama and French's database. This accessibility will allow future researchers to study the MENA region with more in-depth in other areas of interest, such as asset pricing, market efficiency, or even portfolio performance evaluation. Fourth, this study contributes to current literature by indicating that more than one test is used to compare the performance robustness of all the models analysed.

The remainder of this paper is structured in the following manner. Section 2 illuminates the literature review relevant to the different risk factors and asset pricing models. Section 3 describes the factors and the portfolios' construction methods. Section 4 presents the datasets and variables' definitions. Section 5 presents the findings and discussion and Section 6 concludes.

2.   Literature Review

Risk factors affecting stock market returns have been a fundamental debate of modern finance, and the model most commonly used in relation to stock returns calculations is the CAPM model (Treynor, 1962; Sharpe, 1964; Lintner, 1965; Mossin, 1966). According to this model, investors are rewarded for the systematic risks which cannot be diversified. Among the many risk factors involved, market factors are the most important, as noted by most early CAPM-related literature. Researchers all over the world are hoping to identify other risk factors which may be able to explain the returns of various securities. Nonetheless, risk factors cannot be easily specified because it is difficult to determine the number and the nature of these factors. Ross (1976) developed the arbitrage pricing theory (APT) by arguing that expected returns can be determined based on different macroeconomic factors, but the APT cannot clearly identify what these factors are since they are likely to vary over time, and across markets.

Following this, other models were developed and Rosenberg and Marathe (1976) were among the first to develop the multifactor model, after which Fama and French used Merton's (1973) intertemporal capital asset pricing model (ICAPM) to convert it into a multifactor model. Fama and French (1993, 2015, 2016) had proposed several multi-

factor models which include various other factors such as market, size, value, investment and profitability. The various models proposed by Fama and French (1993, 2015, 2016) had also been extended before, for instance, by Carhart (1997) who added the momentum factor. All of these models have today become the standard models mostly discussed by finance literature.

Fama and French's (1993) innovative work showed that the US stock returns can be explained by factors (size and value) besides its market risk premium. It was documented that the market risk premium, size and value factors, played an important role in explaining the expected returns. Fama and French's (1993) three-factor model has been regularly used in many equity markets around the world. However, the results gathered vary from one study to another. As an illustration, Griffin (2002) applied Fama and French's three-factor model to study the market of different countries. It was found that the model performed well, depending on the respective country rather than on a global basis.

Barry, Goldreyer, Lockwood, and Rodriguez (2002) also used Fama and French's three-factor model to examine 35 emerging markets in the world. They found that the value factor was relevant in all those markets. In contrast, the size factor effect would depend on the method used for calculating the size as well as the inclusion of extreme size values. In a similar study investigating the markets of 32 countries, Van der Hart, Slagter and Van Dijk (2003) found that both the size and value factors were relevant risk factors. In another study, Liu, Stambaugh and Yuan (2018) excluded the smallest 30 per cent of firms, which were valued significantly, to construct the value and size factors for the market of China. They found that the model using this construction outperformed the model that was constructed based on Fama and French's (1993) model. Liu et al. (2018) argued that their model was able to explain the profitability and volatility of the Chinese anomalies. More recently, Hu, Chen, Shao and Wang (2019) investigated the size and value factors in the cross-sectional returns of the Chinese stock market. They found that stock returns were strongly related only to firm size. They explained that these results contradicted some of the previous literature due to the short sample period used.

The empirical asset pricing researchers propose new factor models to improve the three-factor model performance. Carhart (1997) extended the three-factor model with a fourth factor: momentum. By addressing one of the biggest anomalies, the explanatory power of the Fama and French three-factor model was improved. While Carhart's (1997) model has been extensively tested in various markets, Jegadeesh and

Titman (1993), and Lo and MacKinlay (1990) were among the first few to document the basic idea of the momentum effect. They found that investors can earn profits of approximately one per cent per month if they hold stocks with high returns over the preceding months, and sell stocks with low returns within the same time period. Cakici, Fabozzi and Tan (2013) examined the value and momentum effects of 18 emerging stock markets. They confirmed the existence of the value and momentum effects in all the 18 emerging markets, but not for Eastern Europe (no momentum). Hanauer and Linhart (2015) also used the Carhart model to examine four emerging market regions: Latin America, EMEA (Europe, the Middle East and Africa), BRIC (Brazil, Russia, India, and China) and Asia. They detected a strong evidence noting the effect of the value factor, but they had weak evidence noting the effect of the momentum factor in those regions. Blackburn and Cakici (2017) used the CAPM and the Carhart four-factor model to examine the stock returns market in Europe, Africa, the Middle East and Asia. They discovered that value and momentum were significant risk factors for those four markets, including small and large stocks. They also found that the Carhart four-factor model outperformed the CAPM.

Motivated by the dividend discount valuation model, and based on anomalies not considered by the three-factor and four-factor models, Fama and French (2015) further improved on the three-factor model by adding two additional factors – profitability and investment. These two factors exemplified what is universally known as quality factors. Fama and French (2015) found that the new model performed better than their three-factor model. The five-factor model was then tested on international regional data by Fama and French (2017). They found that the current model revealed significant differences for the different countries such as North America, Europe, Asia-Pacific and Japan. Still focussing on the CAPM model, Hou, Xue and Zhang (2015) proposed the four-factor q model which contained the market and size factor combined with the profitability and investment factor. They concluded that the q-factor model had outperformed the three-factor model and Carhart's (1997) four-factor model in explaining the market anomalies. More recently, Hou, Mo, Xue and Zhang (2019) compared alternative asset pricing models by using Fama and French's (2015) five-factor model, and Hou et al.'s (2015) q-factor model. It was observed that the latter, the q-factor model, outperformed the five-factor model.

More recent studies (Barillas & Shanken, 2018; Fama & French, 2018) attempted to develop a six-factor model by including an additional

factor, momentum, into Fama and French's (2015) five-factor model. It was deduced by Barillas and Shanken (2018) that models which included the momentum, value and profitability factors, and which were updated on a monthly basis, dominated both Fama and French's (2015) five-factor model, and Hou et al.'s (2015) q-factor model. Based on this, Fama and French (2018) concluded that the six-factor model which combined small and big stocks to measure value, profitability and investment were similar to their model that was without the momentum factor.

Besides the momentum factor, other factors such as illiquidity also affect stock returns. The pioneering studies of Amihud and Mendelson (1986), and Brennan and Subrahmanyam (1996), noticed that illiquidity affected asset pricing. Since illiquidity was found to be a fundamental factor that captured stock returns, numerous illiquidity measures had been used. The illiquidity ratio was noted to be a frequently used measure (Amihud, 2002), but more recently, there have been studies analysing illiquidity as a risk factor. The basis for most studies was derived from the CAPM, Fama and French's three-factor, and five-factor models. Most of the studies looking at illiquidity effects have been conducted in developed markets. For instance, Dey (2005) used the turnover ratio as a measure of illiquidity to assess the determinants of returns variation for 49 global markets. The results showed a positive and significant relationship between returns and illiquidity, but only for emerging markets. In contrast, Rouwenhorst (1999) found that average stock returns in emerging markets were not affected by stock turnover as a measure of illiquidity. Hearn (2009), and Hearn and Piesse (2010) had both used illiquidity, market, value and size to examine the small and liquid market of East Africa as well as the larger cross section of the other African markets. Both studies noted that illiquidity, market, value and size were relevant to those markets.

Based on the outcomes mentioned above, we thus conclude that the findings of previous studies for emerging markets had been inconsistent. In addition, there are limited evidence to show the performance of these asset pricing models in the MENA region. Although Fama and French's three-factor model had been applied in a few studies including some of the MENA countries, to the best of our knowledge, no study had attempted to analyse either the five-factor model or the six-factor-momentum model in the MENA region. Moreover, no study had examined the six-factor-illiquidity and the seven-factor models in any equity market. The limited studies in this aspect may be explained by the lack of a comprehensive, high-quality accounting database. However,

with the development and increasing importance of finance and stock returns, it seems unfair not to include the MENA stock markets as globalisation transforms the landscape. Thus, the current study is conducted to contribute to existing literature and to provide empirical evidence gathered from the analysis of new and different datasets from the MENA region. The fact that the MENA region is composed of equity markets characterised by different levels of development, political and economic instability makes the region an interesting focus. Nonetheless, the outcome derived from this study may or may not show the applicability of these factors within the MENA markets.

3. Methods

This study uses the time-series estimation method to evaluate alternative asset pricing models. In the context of this study which embraces the MENA markets, we analysed the CAPM, Fama and French's (1993) three-factor model, Carhart's (1997) four-factor model, Fama and French's (2015) five-factor model, the four-factor-illiquidity model, the six-factor-illiquidity model, the six-factor-momentum model, and also the seven-factor model. In total, we analysed eight models. Based on this, the first step of our study is to examine the ability of these factors in explaining portfolio excess returns while the second step is to determine the best combination of these factors to be used for explaining the average excess returns in the MENA region.

3.1 Factors Construction

To construct the factors, we used the Fama and French (1993, 2015) method, and the six-form portfolios. These portfolios were constructed in December for each year.[1] We assume that these hypothetical portfolios are held without trading for the next twelve months so as to minimise transaction costs that are associated with portfolio management. Since we do not have access to the MENA indices' constituents, we are unable to use the median of an existing index. To remedy this issue, we adopted the median of the market values of the companies listed in the datasets. In this regard, the size breakpoints were used to distinguish the large stocks from the small stocks. Likewise, the breakpoints of the book-to-

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[1] To avoid the look-ahead bias, we lagged our data one year to be sure that at the end of each December, we have all the required variables.

market (B/M) ratio, profitability (OP), and investment (INV), lagged momentum (MOM), and illiquidity (ILLIQ) can divide the samples into different groups. The factors that were constructed from this method are called small minus big (SMB), high minus low (HML), conservative minus aggressive (CMA), robust minus weak (RMW), winner minus loser (WML), and illiquid minus liquid (ILML).

In December of every year, all stocks were sorted and grouped into two size portfolios. The first portfolio is the small (S) portfolio, which is composed of stocks with the lowest 50 per cent of the region's total market capitalisation (MC). The second portfolio is the big (B) portfolio, which is composed of stocks with the highest 50 per cent of the region's total MC.[2] Independently, all stocks fulfilling the selection criteria were sorted based on their B/M ratio. They were then grouped into three value portfolios. We determined the lowest 30 per cent (growth (G)), the middle 40 per cent (neutral (N)), and the top 30 per cent (value (V)) breakpoints for B/M. Based on the intersection of the size, and the B/M quantiles, we constructed six portfolios: SG, SN, SV, BG, BN and BV. These portfolios were then held for the subsequent twelve months, and the value-weighted returns were then calculated for the period from December year *t* to December year *t+1*. We repeated the same procedure at the end of the holding period. Each year, the six portfolios were then rebalanced based on the new values of the MC, and the B/M ratio. In the 2×3 sorts, the SMB and HML were calculated as follows:

$$SMB=1/3\times(SV+SN+SG)-1/3\times(BV+BN+BG) \tag{1}$$

$$HML=1/2\times(SV+BV)-1/2\times(SG+BG) \tag{2}$$

We constructed the OP factor in a similar way by determining the lowest 30 per cent (Weak (W)), the middle 40 per cent (Neutral (N)), and the top 30 per cent (Robust (R)) breakpoints for the OP variable. We then applied these breakpoints to the large and small stocks. From the intersection of the relevant size, and OP quantiles, we constructed six portfolios: SR, SNOP, SW, BR, BNOP, and BW. We also determined the lowest 30 per cent (Conservative (C)), the middle 40 per cent (Neutral (N)), and the top 30 per cent (Aggressive (A)) breakpoints for the INV variable by applying these breakpoints to the large, and

[2] We also applied different breakpoints for our sample (e.g., top 30 per cent (10 per cent) and bottom 70 per cent (90 per cent)), to see if there is any effect of the breakpoint on the results. We obtain similar results for the different breakpoints.

small stocks. From the intersection of the relevant size, and INV quantiles, we constructed six portfolios: SC, SNINV, SA, BC, BNINV, and BA. All these OP, and INV portfolios were then held for the next twelve months, and the value-weighted returns were calculated on the portfolios for the period from December year *t* to December year *t+1*. In the 2×3 size-OP sorts, and 2x3 size-INV sorts, the RMW and CMA were calculated as follows:

$$RMW=1/2×(SR+BR)-1/2×(SW+BW) \tag{3}$$

$$CMA=1/2×(SC+BC)-1/2×(SA+BA) \tag{4}$$

In the 2×3 size-B/M sorts, 2×3 size-OP sorts and 2×3 size-INV sorts, SMB is the average return on the nine small stock portfolios minus the average return on the nine large stock portfolios. The SMBB, SMBOP, SMBINV and SMB were calculated as follows:

$$SMB_{B/M}=1/3×(SV+SN+SG)-1/3×(BV+BN+BG) \tag{5}$$

$$SMB_{OP}=1/3×(SR+SN_{OP}+SW)-1/3×(BR+BN_{OP}+BW) \tag{6}$$

$$SMB_{INV}=1/3×(SC+SN_{INV}+SA)-1/3×(BC+BN_{INV}+BA) \tag{7}$$

$$SMB=1/3×(SMB_{B/M}+SMB_{OP}+SMB_{INV}) \tag{8}$$

Based on size and MOM, we further constructed six portfolios. At the end of each month, all stocks are sorted, and grouped into two portfolio sizes. Independently, we sorted the MOM and determine the lowest 30 per cent (Losers (L)), the middle 40 per cent (Neutral (N_{mom})), and the top 30 per cent (Winners (W)). The intersection of the independent sorts on size and MOM produce six portfolios: SL, SN$_{mom}$, SW, BL, BN$_{mom}$ and BW. The value-weighted monthly returns on portfolios were computed each month from December *t* to December *t+1*. The WML was calculated as follows:

$$WML=1/2×(SW+BW)-1/2×(SL+BL) \tag{9}$$

To construct the ILLIQ factor, a similar procedure was used. For both the small and large size portfolios, the stocks were sorted into three separated ILLIQ-ranked portfolios: the lowest 30 per cent (Liquid, (L)), the middle 40 per cent (Neutral, (NILLIQ)), and the highest 30 per cent (Illiquid, (IL)). This generates six size-ILLIQ portfolios: SIL, SNILLIQ, SL, BIL, BNILLIQ and BL. The low values of the ILLIQ measure indicate

high liquidity, whereas the high values of the measure indicate high ILLIQ. The value-weighted monthly returns on the portfolios were computed each month from December *t* to December *t+1*. The ILML was calculated as follows:

$$ILML=1/2\times(SIL+BIL)-1/2\times(SL+BL) \tag{10}$$

3.2 Portfolio Construction

This sub-section describes the construction of the portfolios used as dependent variables. Based on the size, and the B/M equity ratio, we constructed 25 portfolios. These portfolios were formed in the same way as the six size-B/M portfolios described above. In December of each year, we allocated the MENA stocks to five portfolio sizes, based on the MC. We then independently chose five value portfolios based on the B/M. From the intersections of the size and the value portfolios, we constructed 25 portfolios. In the same way, we constructed 25 portfolios based on size and the OP variable, 25 portfolios based on size and the INV variable, and 25 portfolios based on size and the MOM variable. Then, we calculated the value-weighted monthly returns on the port-folios from December *t* to December *t+1*.

To examine possible ILLIQ effects, we sorted the stocks into three portfolios based on ILLIQ. Independently, we sorted the stocks into three portfolios according to size. From the intersections of the size, and the ILLIQ portfolios, we constructed nine portfolios. The value-weighted monthly returns on the portfolios from December *t* to December *t+1* were calculated. In this set, we constructed only nine portfolios because the number of stocks that have information on the ILLIQ ratio is small.

3.3 Model tests

Using the excess returns on the portfolios, and the factor returns described above, we tested different asset pricing models for the MENA region. These tests were performed using the time-series regression approach represented by equations (11) to (18).

The CAPM
$$R_{P,t}-R_{ft}= a+\beta(R_{M,t}-R_{ft})+\varepsilon_t \tag{11}$$

The three-factor model
$$R_{P,t}-R_{ft}= a+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+\varepsilon_t \tag{12}$$

The four-ILLIQ model

$$R_{P,t}-R_{ft}= a+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+il(ILML)+\varepsilon_t \tag{13}$$

The four-MOM model

$$R_{P,t}-R_{ft}= a+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+m(WML)+\varepsilon_t \tag{14}$$

The five-factor model

$$R_{P,t}-R_{ft}=a+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+c(CMA)+r(RMW)+\varepsilon_t \tag{15}$$

The six-ILLIQ model

$$R_{P,t}-R_{ft}=\alpha+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+c(CMA)$$
$$+r(RMW)+il(ILML)+\varepsilon_t \tag{16}$$

The six-MOM model

$$R_{P,t}-R_{ft}=\alpha+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+c(CMA)$$
$$+r(RMW)+m(WML)+\varepsilon_t \tag{17}$$

The seven-factor model

$$R_{P,t}-R_{ft}=\alpha+\beta(R_{M,t}-R_{ft})+s(SMB)+h(HML)+c(CMA)+r(RMW)$$
$$+m(WML)+il(ILML)+\varepsilon_t \tag{18}$$

where, $R_{P,t}-R_{ft}$ is the continuously compounded return on the stock portfolio p in excess of the risk-free rate, $R_{M,t}-R_{ft}$ is the continuously compounded return on a market benchmark in excess of the risk-free rate, *SMB* is the average return difference between small and large portfolios, *HML* is the average return difference between value and growth portfolios, *RMW* is the average return difference between robust and weak portfolios, *CMA* is the average return difference between conservative and aggressive portfolios, *WML* is the average return difference between winner and loser portfolios, and *ILML* is the average return difference between illiquid and liquid portfolios.

Five sets of the left-hand side (LHS) portfolios were used to evaluate each model. We used the Gibbons, Ross and Shanken (1989) test (GRS) to analyse whether the pricing errors of all the portfolios in each size set was jointly equal to zero. This enables us to evaluate and compare the various models accurately. We ran individual ordinary least squares (OLS) regressions to obtain the model parameter estimates. If the model capture all the variations in the returns, the intercept α in each model should be zero for all portfolios. In addition to the GRS,

and the OLS estimates, we also reported on the Akaike information criteria (AIC) of all the models, and the adjusted R^2 differences between the models. We calculated the average of the portfolios for the AIC values in order to determine the AIC in each LHS portfolio set for each model. To investigate whether all the models' performance would be significantly different, we applied the bootstrapping method to find the mean adjusted R^2 for each model in each portfolio set, and also to test the difference between the adjusted R^2 for each of the two models.

4. Data and Variables Definition

4.1 Data

Our datasets are composed of non-financial firms listed on all exchanges of 13 countries in the MENA region. These countries comprise Bahrain, Egypt, Israel, Jordan, Kuwait, Lebanon, Morocco, Palestine, Oman, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates.[3] The required data were extracted from Thomson Reuters DataStream database. The period set for the datasets were from December 2004 until December 2015, but the first two years (2004 to 2006) were lost due to the construction of the INV and MOM factors. Consequently, the data samples compiled for the study were from the sample period of January 2007 to December 2015 (a total of eight years). The dataset period was selected due to the need to maintain the historical contents for as long as possible, and to have a coverage of markets that is as broad as possible. We note that there were extremely few or no financial market in the MENA region which carry any available data prior to 2005, hence we made it our choice to ensure that the data we collected would reflect those that would be readily available for all markets. Hence, we included all the non-financial companies[4] that are listed in the MENA exchange markets. To standardise the data which were accumulated from the different countries in the MENA region with different currencies, we converted all the data into US dollars.

From the compilation of our dataset, we selected those stocks which carry information on the MC, and on the following accounting variables: annual revenues, cost of goods sold, interest expenses, selling, general

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[3] We base on the United Nations' website to define the MENA countries. These 13 countries are the only MENA countries that are included on the DataStream and have data.
[4] Banks and insurance companies are excluded.

and administrative expenses, book value of equity, INV tax credits, deferred taxes, preferred stocks, total assets, number of outstanding shares, daily total returns index, daily number of trading stocks and daily closing prices. We also used the monthly total returns index (RI) for our returns calculation. All these variables were used to construct the different factors. As mentioned earlier, we referred to the DataStream database for our data. In some cases, we also collected data from various companies' financial reports which are obtained from the companies´ websites, and from corresponding equity markets' official websites.[5] Thus, we used manually collected data to enlarge our samples in order to ensure that we had included all the listed non-financial companies. With regards to the risk-free rate, we used the US T-Bill once a month rate because all our data were in USD rate. We obtained the risk-free rate from the Kenneth French data library. To avoid a possible survivorship bias, delisted stocks were included until they disappeared. In the current study, we only included the equity-type securities while excluding the preferred shares from the database. Firms with negative book equity, and some outliers were also excluded.[6]

4.2 Variables Definition

To define the variables used, the following data were used for calculation purposes, and for the required variables of the portfolios, and the factors' construction:

- Book Value (BV) is the BV of equity plus balance sheet deferred taxes, and investment tax credits minus the BV of preferred stocks. We calculated this variable annually at the end of each fiscal year for each company.
- MC is the closing stock price multiplied by the number of outstanding shares at the end of each year. It was used for computing the value-weighted returns, size, values and the B/M ratio.
- The B/M ratio was used to construct the portfolios in December of year *t*, based on the values of the BV of equity for the year *t-1*, divided by the MC at the end of December of year *t-1*.

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[5] The majority of the companies in the MENA region use the International Financial Reporting Standards (Mwaura and Nyaboga, 2011).
[6] Two firms with stock returns equal to or higher than 200 per cent were excluded since this value was very large compared to the other returns.

- OP was used to construct the portfolios in December of year *t*, based on the operating incomes (measured as annual revenues minus cost of goods sold, selling, general, and administrative expenses), after interest expenses of year *t-1*, divided by BV of year *t-1*.
- INV was used to construct the portfolios in December of year *t* based on the total assets at the end of year *t-1*, minus total assets at the end of year *t-2*, divided by total assets at the end of year *t-2*.
- ILLIQ, following Amihud's (2002) definition, was used to construct the portfolios in December of year *t*, based on the monthly ILLIQ ratio. The daily ILLIQ ratio was measured as the absolute value of daily stock returns divided by the daily trading volume (the daily stock price multiplied by the daily number of trading stocks). The monthly ILLIQ ratio was calculated as the average of the daily ILLIQ ratio for each stock in each month.
- MOM, following Jegadeesh and Titman (1993), was the common measure of the past 12 months' cumulative return on the stock, MOM2-12. This measure skips the most recent month's return in order to avoid the one-month's reversal in stock returns, hence the MOM was the stock's cumulative return for *t-12* to *t-2*.
- Market returns ($R_{M,t}$) was the market returns calculated as the equally weighted monthly returns of all shares, which have the available data plus the negative B/M stocks which were excluded earlier when the factors and portfolios were constructed.
- We used the simple average to create a more diversified index with a bigger mid-cap base rather than concentrating on the largest companies.[7]

In general, most of the market indices have used the value-weighted average returns for the stocks that were included in the index. The problem, however, is that these market indices could be biased by the existence of large and liquid listed companies. Thus in this study, we used an equally weighted index that concentrated more on the

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[7] The value-weighted index was also used; we notice that there is no huge difference in the results, but the equally weighted index gives higher R^2.

higher growth potential stocks which also comprised the small and mid-cap stocks. Indeed, most of the stocks in our samples were classified as small and mid-cap stocks. Therefore, we used the equally weighted market portfolio including all the stocks to limit the effect of the biggest companies on the overall portfolio performance.

4.3 Summary Statistics for Factor Returns

Referring to Table 1, it should be noted that Panel A shows the summary statistics for factors' returns. The findings further show that only HML is statistically significant at the five per cent level of confidence. The average HML return is 0.67 per cent per month (t=2.29), with a standard deviation of 3.04 per cent. The value premium is higher for the small stocks. The average return for the HML_s is 1.16 per cent per month (t=5.01) with a standard deviation of 2.41 per cent. Therefore, these values suggest the existence of a value premium within the stock market of the MENA region. Although the size, INV, OP, MOM, and ILLIQ effects do not seem to be present in our data samples, the factors' premiums are noted to be higher for the small stocks.

Referring to Table 1 again, Panel B highlights the correlation matrix between all the factors. The negative correlation between the market and the size reflects evidence of a reverse size effect. The highest correlation is observed to be between the value, and the INV factors, with a positive value of 0.59, which demonstrate that the value stocks comprised of more conservative stocks rather than growth stocks.

The value factor is positively correlated with the ILLIQ factor which imply that the growth stocks are more liquid than the value stocks. The value factor is also positively correlated with size, OP and MOM factors. The MOM is positively correlated with ILLIQ, which indicates that the winner stocks are more illiquid than the loser stocks. OP is negatively correlated with ILLIQ, which shows that the more robust portfolios are more liquid. INV is positively correlated with size, value, MOM, OP and ILLIQ. These results suggest that in the MENA region, the small stocks are the value, conservative, robust, illiquid and loser stocks.

4.4 Summary Statistics for the Portfolios' Excess Returns

This section presents the summary statistics for the different size-sort portfolios of the LHS. Panel A of Table 2 shows the average monthly excess returns, and the standard deviations for the 25 size-B/M value-

Table 1: Summary Statistics for Factors' Average Monthly Returns

Panel A: Averages, standard deviations and t-statistics for monthly returns

	Mean	Std dev.	t-statistics
$R_{M,t}$–R_{ft}	0.75	4.31	1.81
SMB	0.24	3.67	0.67
HML	0.67	3.04	2.29
RMW	0.10	2.31	0.46
CMA	-0.14	2.48	-0.61
WML	-1.16	6.98	-1.72
ILML	0.80	6.29	1.31
HML_b	0.18	5.44	0.34
HML_s	1.16	2.41	5.01
RMW_s	0.17	3.74	0.47
RMW_b	0.04	4.30	0.09
CMA_s	0.35	2.09	1.73
CMA_b	-0.64	4.18	-1.58
WML_s	-0.88	5.87	-1.55
WML_b	-1.44	9.76	-1.53
$ILML_s$	1.58	6.42	2.56
$ILML_b$	0.01	11.32	0.00

Panel B: Correlations between different factors

	$R_{M,t}$–R_{ft}	SMB	HML	CMA	RMW	WML	ILML
$R_{M,t}$–R_{ft}	1.00						
SMB	-0.68	1.00					
HML	-0.23	0.39	1.00				
CMA	-0.56	0.52	0.59	1.00			
RMW	0.21	0.01	0.37	0.13	1.00		
WML	0.30	-0.18	0.19	0.09	0.06	1.00	
ILML	-0.56	0.41	0.25	0.49	-0.19	0.04	1.00

Notes: Panel A shows average monthly returns, expressed in percentage (mean), the standard deviation of the monthly returns (std. dev.) and the corresponding *t*-statistics. Panel B shows the correlations between the different factors.

Table 2: Summary Statistics for the Different Size-Sort Portfolios Excess Returns

Panel A: Monthly excess return for size-B/M 25 portfolios

	Low	2	3	4	High	Low	2	3	4	High
Small	0.63	0.63	1.05	1.51	2.15	5.19	3.06	3.42	3.95	5.03
2	-0.49	0.06	0.80	1.22	1.37	5.71	3.87	4.76	5.71	4.44
3	0.02	0.78	0.46	1.00	1.3	4.80	3.80	4.89	5.09	5.89
4	-0.20	0.21	-0.04	0.55	0.72	4.26	4.82	4.38	4.66	5.98
Big	0.78	0.79	0.73	-0.1	1.04	8.16	7.74	4.49	5.38	6.35

Panel B: Monthly excess return for size-INV portfolios

	Cons.	2	3	4	Agg.	Cons.	2	3	4	Agg.
Small	2.46	1.06	0.49	1.43	1.28	6.54	3.75	2.76	4.97	4.24
2	0.32	0.92	1.50	0.65	0.49	4.42	3.80	4.50	4.55	5.26
3	0.64	1.26	0.83	0.51	0.25	5.10	5.01	4.29	4.16	5.32
4	0.15	-0.05	-0.19	0.44	0.21	3.58	4.29	4.23	4.79	5.42
Big	0.15	0.94	0.60	0.44	0.91	3.64	6.43	5.51	8.00	7.96

Panel C: Monthly excess return for size-OP portfolios

	Weak	2	3	4	Robust	Weak	2	3	4	Robust
Small	2.37	1.28	0.70	1.16	1.52	6.43	3.85	2.35	3.97	4.75
2	0.29	0.81	1.26	0.88	1.07	4.91	4.22	3.69	5.09	5.82
3	0.82	0.65	0.62	0.34	1.24	5.79	4.51	4.82	4.47	5.59
4	-0.49	0.22	-0.05	0.38	0.23	4.83	5.26	4.07	4.36	4.55
Big	0.34	0.56	0.48	0.58	0.43	6.11	5.65	5.14	5.08	7.67

Panel D: Monthly excess return for size-MOM portfolios

	Looser	2	3	4	Winner	Looser	2	3	4	Winner
Small	3.28	1.62	0.99	1.03	1.64	10.69	4.56	3.29	4.46	5.54
2	1.43	0.49	0.89	0.08	0.11	6.56	3.75	3.08	0.35	6.07
3	1.36	0.61	0.38	0.17	0.62	7.51	3.42	3.13	3.88	7.67
4	0.88	0.08	0.31	-0.50	0.06	4.61	4.22	4.51	5.97	6.13
Big	0.98	0.06	-0.12	0.07	-0.74	7.01	7.36	5.66	7.82	12.48

Panel E: Monthly excess return for size-ILLIQ portfolios

	Low	2	High		Low	2	High
Small	0.25	1.74	2.15		2.81	7.97	5.89
2	-0.01	1.36	1.75		8.36	9.99	5.93
Big	-0.79	0.22	0.11		10.86	5.80	3.08

Notes: This table reports the mean and standard deviation of the excess returns for the 25 size-B/M, 25 size INV, 25 size-OP, 25 size MOM and 9 size-ILLIQ portfolios.

weighted portfolios. Looking at the relationship between size and average excess returns (the size effect), we notice that the stocks in the right column of the size-B/M matrix exhibit a standard size effect; the small-value stocks tend to have higher excess returns than the large-value stocks in the last size quintile.

In the left two columns of the size-B/M matrix, the small-growth stock portfolios tends to present lower excess returns as compared to the large-growth stock portfolios. In each column of the three right quintiles of B/M, the average excess return drops from small to large stock portfolios.

Therefore, we can say that this may be evidenced of the size effect. In terms of the relationship between B/M and average excess returns (the value effect), each size row in Panel A of Table 2 shows that average excess returns increase from low B/M to high B/M stock portfolios. The extreme small stocks in the first row of the size quintiles tend to have higher return premiums than the extreme large stocks in the last size quintile. However, in Panel B of Table 2, we observed that average excess returns in all INV quintiles have a standard size effect. This effect is more robust in the left INV quintile, which include the extremely conservative INV stocks. The smallest portfolio in the conservative INV quintile has the highest excess returns of all. Thus, we can say that there is evidence of a size effect on INV portfolios.

Examining the relationship between INV and average excess returns (the INV effect), we observed that average excess returns in the first and the third rows of the size quintile dropped from the portfolios in the left column to the right column. Therefore, the INV effect is noted to be unclear in our samples.

Panel C of Table 2 shows that average excess returns of the size-OP in general had decreased in size. We observed that the size effect is more robust in the left column which include extremely weak OP stocks. Analysing the relationship between OP and average excess returns (the OP effect), each size row in Panel C of Table 2 shows that average excess returns tend to increase in a non-monotonic manner, except for the first size row in which the extremely weak portfolio has a higher return than the extremely robust portfolio. This suggests that there might be an OP effect in our sample, particularly among the large stocks.

Panel D of Table 2 shows the patterns in the average excess returns of size-MOM portfolios. In all columns of MOM quintiles, average excess returns fall from small to large stocks. This result is more robust in the last column which includes the winner stocks, and it is smoother for

the loser stocks. In relation to the relationship between MOM and the average excess returns (the MOM effect), each size row in Panel D of Table 2 shows that the average excess returns have decreased from the loser to the winner's portfolios, which reveal that there is no standard MOM effect in the MENA region.

Panel E of Table 2 shows average excess returns for size-ILLIQ portfolios. In this panel, the standard size effect is clear. The small stock portfolios tend to be riskier than the large stock portfolios, but they also have higher excess returns. Analysing the relationship between the ILLIQ and average excess returns (the ILLIQ effect), each size row signifies that the average excess returns have increased from low ILLIQ portfolios to high ILLIQ portfolios. This implies that there might be an ILLIQ effect in the MENA region. This effect appears to be more robust for the smallest size quintile.

5. Findings and Discussion

In this section, we tested how well each model explained average excess returns on the different portfolios. The objective is to determine which factor has captured average stock returns and which served as the best model for explaining these portfolios returns in the MENA markets. Using a time-series approach, we estimated and analysed the models as expressed in Equations (11) to (18).

5.1 The GRS Test

Table 3 shows the results of the GRS test, and the summary statistics for the regression intercepts used for size-B/M portfolios.[8] Our right-hand side (RHS) factors serve as the market factors: SMB, HML, CMA, WMR, WML, and ILML. We calculated these factors as described in section 3.1. By combining and comparing these factors, we are able to assess which of these is the best model. To examine the effectiveness of the asset-pricing model, a high value of the GRS statistic is considered as undesirable; a small P-value implies that we could reject the null hypothesis which states that all the intercepts are jointly equal to zero.

Since our main interest is to compare the models' relative performance, we compared the average absolute value of the regression

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[8] The GRS of the other size sorts present similar results regarding the superiority of the seven-factor model. The results are available upon request.

Table 3: GRS Test for Portfolios Formed on Size-B/M

Model	GRS	|a|	R^2	P(GRS)	S(a)	SR(a)
CAPM	3.658	0.527	0.556	0.000	0.322	1.072
Three-	3.144	0.433	0.629	0.000	0.303	1.048
Four-MOM	2.558	0.353	0.640	0.001	0.311	0.994
Four-ILLIQ	3.134	0.431	0.633	0.000	0.309	1.079
Five-	3.076	0.437	0.644	0.000	0.303	1.072
Six-MOM	2.506	0.349	0.653	0.001	0.309	1.012
Six-ILLIQ	2.967	0.421	0.647	0.000	0.310	1.087
Seven-	2.289	0.328	0.656	0.003	0.319	1.009

Notes: This table reports summary statistics for regressions of monthly excess returns on portfolios formed on size-B/M. The GRS statistic tests whether all intercepts in the set of 5×5 regressions are zero; |a| is the average absolute value of the intercepts; R^2 is the average, adjusted R^2; S(a) is the average standard error of the intercepts; SR(a) is the square of the Sharpe ratio for the intercepts; P(GRS) is the p-value for the GRS statistic.

intercepts |a|, regression average adjusted R^2, intercepts standard deviations S(a), the P-values, and the models' unexplained squared Sharpe ratios SR(a), across the models. The lower absolute intercepts, lower intercepts' standard deviations, lower squared Sharpe ratios, higher P-values, and higher average adjusted R^2 all point to the better performance of the model.

Table 3 also provides evidence which proves that the three-factor model can significantly enhance the model's performance, above the CAPM, as observed by the higher R^2, lower GRS, lower S(a), and lower SR(a).

Table 3 also provide evidence which shows that both the four-factor models improved on the three-factor model's performance, as depicted by the higher R^2, lower GRS, lower S(a), and lower SR(a). The five-factor model enhanced the performance of both the four-factor models as noted by the higher R^2, lower GRS, lower S(a) and lower SR(a). Both the six-factor models performed better than the five-factor model, and the seven-factor model performed better than all the other competing models.

Based on the outcomes generated and shown in Table 3, it is noted that the best model among these eight models is the seven-factor model, which carries the highest R^2 (0.656), the lowest GRS (2.289), the lowest |a| (0.328), the highest P-value (0.003), and the second lowest SR(a), with a value of 1.009.

Based on this, it can be deduced that when using the GRS test, not all the models under analysis can fully explain the portfolios' excess returns. The seven-factor model, the six-factor-ILLIQ model, and the four-factor-ILLIQ model, appear to be the three best-performing models.

5.2 Models Performance Robustness Tests

As an additional analysis, we used the AIC and the differences in the mean adjusted R^2 to compare the performance of the different models again. Table 4 reports on the AIC for all the models for all the LHS portfolio sets. The lowest AIC value is noted to be in the seven-factor model for all the LHS sets.

Table 4: AIC for the Alternative Models for Portfolios Formed on Different Size-Sort

Model	Size-B/M	Size-INV	Size-OP	Size-MOM	Size-ILLIQ
CAPM	555	545	550	665	717
Three-	538	531	535	591	623
Four-MOM	534	529	533	560	621
Four-ILLIQ	537	531	535	591	614
Five-	535	526	529	590	623
Six-MOM	532	524	527	560	621
Six-ILLIQ	535	526	529	591	613
Seven-	532	524	527	561	611

Notes: The Table reports the AIC for the different models. The AIC is the average of all portfolios' AIC for each model for each size sort set.

Table 5 reports on the mean adjusted R^2 that resulted from the bootstrapping method used for each asset pricing model which considered the portfolios based on the size-B/M sort. From the results shown in Table 5, it can be concluded that the three-factor model's adjusted R^2 is significantly different from the CAPM's adjusted R^2 since the P-value of the difference was zero. Thus, we reject the null hypothesis which states that the difference between the two models' adjusted R^2 is zero. The five-factor model's adjusted R^2 is also significantly different from the three-factor model's adjusted R^2 and from the four-factor-ILLIQ model's adjusted R^2. Nonetheless, it is not significantly different from the Carhart four-factor model's adjusted R^2.

Table 5: Differences in the Mean Adjusted R^2 of the Alternative Asset Pricing Models for the Size-B/M Portfolios

Variable	CAPM	Three-	Four-MOM	Four-ILLIQ	Five-	Six-MOM	Six-ILLIQ	Seven-
Mean R^2	0.56	0.64	0.65	0.65	0.66	0.67	0.67	0.68
CAPM	–	0.08 (0.00)	0.09 (0.00)	0.09 (0.00)	0.10 (0.00)	0.11 (0.00)	0.11 (0.00)	0.12 (0.00)
Three-		–	0.01 (0.00)	0.01 (0.00)	0.02 (0.00)	0.03 (0.00)	0.03 (0.00)	0.04 (0.00)
Factor-MOM			–	-0.01 (0.14)	0.01 (0.25)	0.02 (0.00)	0.01 (0.03)	0.03 (0.00)
Four-ILLIQ				–	0.01 (0.00)	0.03 (0.00)	0.02 (0.00)	0.03 (0.00)
Five-					–	0.01 (0.00)	0.01 (0.00)	0.02 (0.00)
Six-MOM						–	-0.01 (0.11)	0.01 (0.00)
Six-ILLIQ							–	0.01 (0.00)

Notes: This table reports the mean adjusted R^2 for each model considering the portfolios resulting from the size-B/M sort and the difference between the adjusted R^2 for each two models and the corresponding p-value (reported in parentheses) on the test if the difference is equal to zero, obtained using the bootstrap method.

The seven-factor model's adjusted R^2 is significantly different from all the other models' adjusted R^2.

Therefore, it can be said that Table 5 confirms the GRS and the AIC results which highlighted all the eight model's performance difference, which are quite significant. Hence, this also validates the superiority of the seven-factor model.

5.3 Regression Details Analysis

To obtain a deeper understanding of the performance of each model, we further examine and discuss the regression estimates, specifically, the intercepts and factors' slopes, and their associated t-statistics. Table 6 summarises the intercepts and the factors' slopes for the seven-factor

Table 6: Seven-Factor Model Regressions Estimates for the 25 Size-B/M
Portfolios

	Low	2	3	4	High	Low	2	3	4	High
			a					*t(a)*		
Small	-0.17	-0.09	0.24	0.84	0.94	-0.34	-0.41	0.91	2.57	2.46
1	-1.35	-0.53	0.01	0.06	0.12	-3.11	-1.75	0.02	0.21	0.51
2	-0.22	0.39	-0.33	-0.03	-0.06	-0.60	1.61	-1.46	-0.10	-0.22
3	-0.46	0.02	-0.34	-0.18	0.10	-2.02	0.09	-1.65	-0.81	0.30
Big	0.12	0.25	0.47	-0.21	1.03	0.36	0.63	2.01	-0.64	2.33
			b					*t(b)*		
Small	0.90	0.62	0.69	0.58	1.05	4.65	5.66	5.76	5.84	7.71
1	1.03	0.71	0.94	1.26	0.95	5.75	7.66	7.53	11.50	11.67
2	0.56	0.52	0.93	0.94	1.26	5.37	5.59	11.99	7.97	10.98
3	0.69	0.61	0.69	0.75	0.88	6.83	7.54	9.24	9.32	5.64
Big	1.36	1.02	0.56	0.61	0.23	10.38	4.10	6.13	6.19	1.61
			s					*t(s)*		
Small	0.54	0.33	0.25	0.34	0.49	2.98	2.85	1.73	2.91	4.03
1	0.41	0.16	0.39	0.26	0.30	2.28	1.34	3.40	2.14	2.79
2	0.08	-0.02	0.13	0.24	0.05	0.77	-0.14	1.65	2.30	0.32
3	0.03	-0.25	-0.20	-0.19	-0.47	0.42	-2.35	-2.37	-2.26	-2.40
Big	-0.73	-0.80	-0.54	-0.67	-1.53	-7.07	-3.98	-8.42	-6.77	-10.61
			h					*t(h)*		
Small	-0.29	0.04	0.13	0.10	0.12	-1.66	0.35	1.45	0.84	1.01
1	-0.24	0.00	-0.04	0.05	0.37	-1.74	-0.04	-0.29	0.36	3.87
2	-0.32	0.00	0.00	0.12	0.52	-2.87	-0.04	-0.02	1.27	3.33
3	-0.30	-0.16	-0.11	0.33	0.60	-4.11	-2.16	-1.36	4.68	3.66
Big	-0.45	-0.20	0.05	0.31	0.95	-4.21	-1.05	0.67	3.20	5.40
			c					*t(c)*		
Small	0.36	-0.05	0.18	-0.36	0.13	1.57	-0.36	1.01	-2.43	0.69
1	-0.06	-0.07	-0.04	-0.13	-0.19	-0.29	-0.39	-0.28	-0.68	-1.56
2	-0.12	-0.24	-0.39	-0.32	0.04	-0.73	-1.71	-2.07	-1.56	0.23
3	0.15	0.09	-0.01	-0.59	0.00	1.40	0.62	-0.08	-4.19	0.02
Big	0.05	-0.49	-0.28	0.01	0.17	0.30	-2.19	-2.52	0.08	0.97

Table 6: Continued

	Low	2	3	4	High	Low	2	3	4	High
			r					t(r)		
Small	0.23	-0.01	-0.01	0.12	0.09	1.06	-0.05	-0.07	0.98	0.75
1	0.13	-0.37	-0.11	-0.19	0.17	0.63	-2.91	-0.94	-1.85	1.91
2	0.32	0.10	-0.05	-0.02	0.20	2.70	0.95	-0.46	-0.20	1.75
3	0.26	0.34	0.24	0.09	0.05	2.73	3.34	3.07	0.94	0.39
Big	-0.22	0.30	0.29	0.22	0.60	-1.70	1.49	3.48	2.39	3.69
			m					t(m)		
Small	-0.07	-0.03	-0.10	0.11	-0.02	-1.07	-0.88	-3.27	2.03	-0.34
1	0.09	-0.05	0.03	-0.05	-0.11	1.85	-1.39	0.68	-0.95	-2.78
2	0.01	-0.02	0.01	-0.19	-0.03	0.32	-0.51	0.22	-3.86	-0.57
3	0.08	0.00	0.08	0.03	0.04	3.13	0.14	3.42	0.99	0.66
Big	-0.32	0.06	-0.03	0.18	-0.02	-5.76	0.48	-0.73	4.64	-0.45
			il					t(il)		
Small	-0.01	0.04	0.01	0.08	0.10	-0.08	0.58	0.21	0.91	1.01
1	0.07	0.00	-0.03	0.02	0.02	0.66	-0.04	-0.36	0.26	0.28
2	-0.13	-0.08	-0.02	-0.12	0.07	-1.59	-1.34	-0.26	-2.15	0.90
3	-0.05	-0.13	-0.02	0.02	-0.10	-0.97	-2.49	-0.34	0.49	-1.07
Big	-0.08	0.21	0.02	-0.01	-0.03	-1.01	1.35	0.32	-0.20	-0.36

Notes: This table reports regressions estimates and their t-statistics for the seven-factor model. The LHS variables are the monthly excess returns on the 25 size-B/M portfolios. The RHS are market excess returns, $R_{M,t}$–R_{ft}, size factor (SMB), value factor (HML), MOM factor (WML), ILLIQ factor (ILML), OP factor (RMW), and INV factor (CMA).

model by considering the size-B/M portfolios.[9] The results for this model show that several of the analysed portfolios have intercepts which are insignificantly different from zero. Insignificant intercepts show that the model can explain the stock returns. This result is further confirmed by the GRS test, AIC analysis, and the adjusted R^2 difference analysis presented above. The portfolios' slopes differ from one factor to another. The market slopes are high for most of the portfolios while some are higher than one. The significant market slopes indicate that the market

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[9] The regression details of other portfolio sets and other models are available upon request.

risk factor is a relevant risk factor in the MENA region. The SMB slopes are statistically positive for all the small stocks; this means that there is a standard size effect among those small stock portfolios.

As can be noted, the slopes are statistically negative for all the large stocks in all the models. This could be a sign of the reverse size effect of these large stocks. The SMB slope for the large-value portfolio (-1.53, *t=-10.61*)[10] is the lowest value among all the SMB slopes. The HML slopes for the value portfolios are statistically positive, and higher than the slopes of the growth portfolios, which are negative, and some are significant.

The HML slope for the large-value portfolio (0.95, *t=5.40*) is the highest slope in the HML slopes which mean that the value factor is a priced risk factor. The slopes of the CMA are negative in general; six slopes are statistically significant and negative. The INV slope for the large-value portfolio (0.17, *t=0.97*) is the second-highest slope, hence it can be concluded that there is no clear INV effect in our sample. The RMW slopes are positive in general; nine slopes are statistically significant and positive, whereas three slopes are statistically significant and negative. The OP slope for the large-value portfolio (0.60, *t=3.69*) is the highest slope. This evidence shows the OP effect in our sample. Moreover, the slopes of the WML factor, in general, are insignificant for most of the portfolios. The MOM slope for the large-value portfolio (-0.02, *t=-0.45*) is the second-highest slope among the value portfolios. Thus, the MOM effect seems unclear.

The ILLIQ slopes carry just two significant values. This means that there may be no ILLIQ effect in our sample. This may be caused by the fact that the portfolios which we use to construct the ILML factor are not well-diversified, given the small number of stocks that are frequently traded. In relation to the large-value portfolio, the factors' slopes suggest that this portfolio is dominated by large stocks where the returns have behaved like those of profitable, aggressive, illiquid firms that had grown slowly.

Relating this finding to the other models, we observed that the number of portfolios exhibiting significant intercepts had generally decreased as we added more factors. The multifactor models' slopes show similar results as those of the seven-factor model mentioned above.

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[10] t-statistics are calculated from standard errors that are robust to heteroskedasticity, using the method of White (1980).

The market, SMB, HML, and RMW factors contain in the models using them are found to be relevant for the MENA region. Although our results do not show clear evidence of the ILLIQ effect, when we analysed the portfolios formed from the size-ILLIQ sorts, we found a positive and significant ILML slope for the extremely small-illiquid portfolio.

5.4 Discussion

From the outcomes generated, and explained above, it can be concluded that this study has generated sufficient evidence to show the standard size effect of the small size portfolios, and the reverse size effect of large size portfolios for the MENA region, based on the regression details derived for the size-B/M sort portfolios (and other size sort sets). There is evidence of the value effect too since most of the HML slopes are significantly positive for the value stocks in all the models. This further indicates that the value portfolios have higher returns than the growth portfolios. There is also ample evidence highlighting the profitability effect since most of the slopes had been positive and significant. However, there is no clear evidence supporting the effect of momentum, illiquidity, and investment within the MENA region.

Our results on the size, and value factors, seem consistent with Van der Hart et al. (2003), who had found both size and value to be relevant risk factors for all the emerging markets they studied. Our results related to illiquidity are consistent with Rouwenhorst (1999) who had found the illiquidity factor not to be a priced factor for the emerging markets being studied. Nevertheless, the portfolios which we have used to construct this factor are found to be not well-diversified, and this could be attributed to the small number of stocks that are being frequently traded. In relation to investment, our finding is consistent with other studies, such as Fama and French (2017), who had found that this factor is not present in the European and Asia Pacific markets. Looking at momentum, our result is in harmony with Cakici et al. (2013), who had noted that no momentum effect persist in the Eastern Europe emerging market. The absence of the momentum effect may be attributed to the argument proposed by Chui, Titman, and Wei (2010) who noted that the momentum returns were more robust in countries that valued individualism. Most of the countries in our datasets are characterised by the low value individualism index. This is further evidenced by Rouibah, Khalil and Hassanien (2009) who showed that the average individualism index score for the MENA markets was 40.5, which had

been construed as a collectivist culture. Overall, our findings seem to be consistent with the conclusions of Zhang (2017) who observed that "investment and momentum effects were stronger in developed markets than in emerging markets".

Thus in summary, we conclude that although the results of our study have indicated that the seven-factor model was the most promising model to be used for explaining the stock returns in the MENA markets, no particular factor seems to dominate on a regular basis. In the current study, the short sample period, and the fast-changing market conditions caused by the political and economic instability of the MENA region during the period of study may have caused the priced risk factors to be different during the different sub-periods. Moreover, it could also be attributed to the different factors being measured in different ways.

6. Conclusion

Empirical evidence noted in previous studies had shown that besides market factors, numerous factors contribute to the pattern of asset returns. Focusing on the less explored region of the Middle East and North Africa, this paper has examined the return patterns of the emerging and less developed stock markets of the 13 countries involved. This study has also examined whether the factors found to be significant in explaining the stock returns in developed and other emerging markets are also significant for the MENA markets. In this regard, we find a significant standard size effect in the small size portfolios. We also find the reverse size effect of the large size portfolios in our current research samples. We also uncover a significant value effect, with some evidence of a profitability effect. However, we find no clear evidence of the investment, momentum and illiquidity effect, although the illiquid portfolios present higher returns than the liquid ones, particularly for the small sized portfolios. This finding is thus not consistent with the expectation that illiquidity is a priced factor in emerging markets. We attribute this limitation to the measures we engaged for evaluating this factor.

Looking at the alternative asset pricing models, our results show that market factors alone cannot explain the excess returns on the MENA stocks. Thus, the inclusion of size and value help to improve the explanatory power of the CAPM, but it was still significantly rejected. The inclusion of the profitability and the investment factor further improve the performance of the three-factor model, but the model is still

significantly rejected. The inclusion of the momentum and the illiquidity factor enhanced the model's explanatory power, and the models that do so become more acceptable when we use the GRS test. The best model based on the intercepts analysis, the GRS test, the AIC analysis and the adjusted R^2 differences analysis are the seven-factor model, in all size sorts.

The findings generated by the current study carry important implications for portfolio management, and portfolio performance evaluation, in emerging markets, specifically the MENA region. The findings also carry essential and practical implications for many interested participants in this region, such as national investors, international investors, and policy makers. Our findings provide evidence highlighting the importance of other additional factors which ought to be considered by investors in the emerging financial markets who wish to diversify their risks or to achieve higher excess returns. For the purpose of portfolio performance evaluation in the MENA markets our results show that the seven-factor model is the most promising model to be applied.

The current study is also constrained by a few limitations. First, the study period has been relatively short. Second, from the 21 countries that composed the MENA region, we are only able to obtain data for 13 countries. This is attributed to the fact that not all the 21 countries are included in the DataStream database. Those not in the database include Yemen, and some countries do not have any available information, for example, Syria. Third, the analysis of the different markets with different levels of development may affect the reliability of the data that we obtained since each has a different variation in terms of culture and practices. Fourth, the study period is derived from a crisis period, which could also affect our results. Some of these limitations may, nevertheless, be addressed by future research. It would be of interest to analyse further whether the models' performance have changed in different sub-periods, and whether different factor measurements carry any effect on the performance of the respective models.

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Influence of Family Ownership on Earnings Quality

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ABSTRACT

Manuscript type: Research paper

Research aims: This paper investigates how family ownership affects firm's earnings quality. The focus is on firms listed on the Korean Stock Exchange (KSE).

Design/Methodology/Approach: This study uses panel data to classify family ownership into two categories: pure family ownership and ownership-control disparity (wedge) where wedge is further divided into 1) wedge ratio and 2) wedge multiplier. In addressing the category of ownership-control disparity, it is important to measure how much control rights are greater than ownership rights. Therefore, this study employs the wedge multiplier to overcome the limitation of not separating management control and ownership. Firms' earnings quality is tested by using four proxies proposed by Jonas and Blanchet (2000): 1) persistence, 2) value relevance, 3) conservatism, and 4) accruals quality.

Research findings: This research finds family ownership to be positively associated with earnings quality, value-relevance and accruals quality. However, ownership-control disparity does not reduce the earnings quality. This finding is not consistent with previous studies. Thus, it is deduced that the controlling family shareholders of the *chaebol* firms have a dominant influence on firms which they invested in by using affiliated ownership. Significant ownership-control disparity is prevalent in *chaebol* firms, resulting in low earnings quality.

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Theoretical contribution/Originality: Family ownership is predominant in a number of countries, especially in East-Asian countries. In that regard, this study is important. It contributes to the understanding of family ownerships and firms' earnings quality not only for the Korean contexts, but also for other East Asian countries.

Research limitation/Implications: The four proxies of earnings quality used in this study do not necessarily reflect all aspects of the earnings quality. In this study, the results between family ownership and earnings quality are mixed. The results based on the association between corporate governance and earnings quality could be attributed to the way earnings quality is defined. The management of the *chaebol* firms or large business groups should try to improve transparency and the quality of their financial reporting.

Keywords: Chaebol, Earnings Quality, Family Ownership, Panel Data, Wedge

JEL Classification: G32, G34, M41

1. Introduction

Family-owned firms are a common business structure throughout the world, including in countries with well-developed corporate governance. In general, most public firms are owned, controlled and managed by family shareholders who are also the founders and future heirs of the companies (Shleifer & Vishny, 1986; La Porta, Lopez-de-Silanes, & Shleifer, 1999). Publicly traded firms in more than half of East Asian corporations are family controlled (La Porta et al. 1999) and 30 per cent of the S&P 500 in the US is a family firm (Anderson & Reeb, 2003). According to the Korea Economic Research Institute (2016), 62 per cent of firms in Korea are managed by the controlling family, and an average of 33.5 per cent shareholdings are controlled by family and affiliated firms.

However, there are some studies which show conflicting results on the role of family ownerships. The interest alignments hypothesis for family ownership states that, as the ownership level increases, the family ownership and other shareholders' interests become aligned, and the management makes more efforts into maximising the shareholders' wealth. In contrast, the entrenchment hypothesis for family ownership suggests that the family ownership could try to maximise its wealth against the interests of the minority shareholders when the ownership is considered to be the dominant or controlling power.

Specifically, East Asian studies of controlling and family ownership apply the entrenchment hypothesis, such that the greater the difference is between control rights and ownership (ownership-control disparity), the greater the effect of entrenchment of the controlling family ownership. This makes the large ownership-control disparity reduces firm value and firm performance (La Porta et al., 1999; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000; Claessens, Djankov, & Lang, 2000; Lemmon & Lins, 2003). Among East Asian countries, the agency problem, which is noted by the difference between the controlling family shareholders, and the minority shareholders, is an outstanding phenomenon. It shows the difference between voting rights and cash flow rights, known as wedge or ownership-control disparity. Lemmon and Lins (2003) investigated the ownership structure of eight East Asian countries. They found that controlling families have twice as much control power over their own ownership than other forms of ownership. This is especially so in Singapore, where the difference between control and ownership is three times above the normal rate. This form of ownership structure that exists among East Asian countries, including Korea, carries certain features. Among these is that the controlling family shareholders exercise huge control rights over their cash flow rights. The controlling shareholders, usually the founder and his/her family members, tend to play a dominant role in the decision-making process, particularly in Korean firms. This is accomplished through a chain of ownership relations called pyramidal ownerships (Lim & Kim, 2005). It allows the controlling families to have immense control at all levels of the management, making it easier to expropriate the minority shareholders (Claessens et al., 2000; Claessens, Djankov, Fan, & Lang, 2002; Fan & Wong, 2002).

The business groups (so-called *chaebol*)[1] in Korea which are controlled by families, and the controlling families have a huge managerial power over the whole group despite their small fraction of shareholdings, which may be as low as 10 per cent (Jung & Kwon, 2002). As of 2015, the total number of pure family shares in the 41 *chaebol* firms was only 4.3 per cent, whereas shares by affiliated firms, and related executive members, reached 55.2 per cent (Korea Fair Trade Commission, 2015). This immense control power is achieved through the

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[1] The Korea Fair Trade Commission defines a *chaebol* as a group of firms of which more than 30 per cent of shares are owned by the group's controlling shareholders and its affiliated firms.

holdings of the controlling family, and the affiliated firms. Although the owners of family firms, including the *chaebol* firms, possess the ultimate authority in the firm's decision-making process, they are not burdened with equivalent responsibilities for their managerial decisions. In addition, the controlling power of family members in excess of their cash flow rights, provides them with more means and greater opportunities to expropriate firm resources for their own benefit. Thus, they have the incentives to expropriate other minority investors in the firm by allocating the firm's resources to maximise their own welfare, and to manipulate earnings in order to maintain their control over the firm.

The International Monetary Fund (IMF) and the World Bank noted that dominant family ownership which uses affiliated firms was one of the primary causes of the financial crisis in 1997. It served as the biggest obstacle for improving corporate governance in Korea (Jang, Kim, & Kim, 2002). The Korean government has also designated that ownership-control disparity is a major cause of the negative impact on firm value and firm performance of Korean firms. In this way, it also propels the ownership-control disparity in the direction of corporate governance for improvement.

Given these unique features of family ownership in Korea, it is interesting to know how family ownership influences earnings quality. In order to reduce information asymmetry between controlling family shareholders and the minority shareholders, a transparent and reliable accounting information is necessary so as to increase earnings quality. When the magnitude of the control-ownership disparity increases, the earnings quality also decreases. It is this occurrence which aggravates the information asymmetry between controlling family shareholders, and the minority shareholders (Kim & Yi, 2006).

This study investigates the relation between family ownership and firms' earnings quality in the post crisis period of 2000 to 2012. The panel dataset of public firms listed on the Korean Stock Exchange (KSE) were utilised. By using multiple measures of earnings quality and family ownership coupled by the extended test periods, this study aims to expand on previous family ownership researches of Korean firms (An & Naughton, 2009; An, 2015). This study tests the association between family ownership, and firm value and accruals quality as one proxy of earnings quality. The outcome of this study is able to provide good coverage of the recognised earnings quality indicators and the role of family ownership. Moreover, this study also highlights the substantial differences noted in the earnings quality among the firms within the

country. It asserts that family ownership of firms is an important determinant of earnings quality, hence extending on previous studies.

This study contributes to the literature in several ways. In order to measure ownership-control disparity, first, it is necessary to grasp what ownership structure means among the controlling shareholders. Prior studies on controlling family ownership in various countries (La Porta et al., 1999, 2000; Claessens et al., 2000; Lemmon & Lins, 2003; Fan & Wong, 2002) have not been able to define the term clearly, hence their studies are considered to have limitations in accurately defining the diverse and complex understanding of ownership-control structures. Moreover, most prior studies do not distinguish the controlling shareholders in terms of whether they are internal shareholders or external shareholders. Unlike previous studies looking at family ownership, this study aims to clarify family ownership by classifying it into three measures: one is pure family ownership and the other two are measures of ownership-control disparity – the wedge ratio and the wedge multiplier. These terms were applied by the Korean Fair Trade Commission (hereinafter KFTC)[2] to test the different impact of family ownership on earnings quality. Specifically, the wedge multiplier can overcome the problem by not separating the control rights and ownership rights. The wedge multiplier enables the verification of entrenchment effects by controlling the interest alignment effects (Lemmon & Lins, 2003). Therefore, this study provides additional evidence that will show how family ownership affects earnings quality by precisely placing family ownership into pure family ownership and ownership-control disparity.

Second, the concept of family ownership is predominant in a number of countries, especially in Asian countries where the severe difference between control rights and ownership rights, known as wedge, is an outstanding feature of family ownership. In this regard, the results of this study which highlight the impact of family ownership on earnings quality are relevant for both the Korean context as well as other Asian countries.

Finally, this study extends on previous research by comprehensively exploring the effects of family ownership on four measures of earnings quality – persistence, value-relevance, conservatism and accruals quality. As a proxy of financial reporting quality, earnings

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[2] The KFTC has released data and methods on firm's cash flow rights and voting rights in order to accurately measure ownership-control matrix (the wedge ratio and the wedge multiplier) since 2003.

quality is the primary measure provided in the financial statements (Lev, 1989), which is also the most comprehensive measure for financial reporting quality (Balsam, Krishnan, & Yang, 2003). Previous studies like Wang (2006) examined the impact of family ownership on earnings quality which was proxied by abnormal accruals, earnings response coefficients and conservatism. Lambert, Jones, Brazel and Showalter (2017) used two measures as proxy for earnings quality – accruals quality and earnings response coefficients while others like Ghani, Santi and Puspitasari (2017) and Liu and Skerratt (2018) added smoothness of earnings. This study expands on Wang's (2006) study by measuring earnings quality based on the fundamental properties of the reported information of the International Financial Reporting Standards (IFRS). According to the IFRS, reported earnings provide useful accounting information for evaluating the firm's performance. It appears that higher quality earnings reflect the firm's reliability and transparency. This represents the primary objective of financial reporting which is to mitigate information asymmetries. Therefore, this study provides a more detailed insight into the role of family ownership in improving earnings quality.

The remainder of this paper is organised as follows. Section 2 reviews previous research and develops the research question. Section 3 outlines the sample, data sources and sampling procedure. Section 4 presents the empirical results and Section 5 concludes the study.

2. Literature Review and Hypothesis Development

2.1 Earnings Quality

The definition of earnings quality varies according to researchers. Lev (1989) defined earnings quality as the predictive power of the financial variables. McDaniel, Martin and Maines (2002) and Schipper and Vincent (2003) suggested that the IFRS framework is an appropriate framework for evaluating earnings quality as a measure of financial reporting quality. In this study, earnings quality is defined as a proxy of financial reporting quality. It can be assessed through two different approaches: user needs and shareholder/investor protection. This is in tandem with Jonas and Blanchet (2000), based on the fundamental properties of the reported information of the International Financial Reporting Standards (IFRS). The framework of the IFRS states that earnings provide useful accounting information for users to evaluate

the firm's performance (decision usefulness), and a firm's reliability and transparency represent the higher quality of earnings (accountability). Expanding on the IFRS framework, Jonas and Blanchet (2000) proposed that decision usefulness is linked to the user needs' prospect while accountability is related to shareholder/investor protection's prospect, both reflecting the attributes of earnings quality.

From the user needs' prospect, the purpose of financial statements should provide useful information to users to help them make economic decisions, thereby making a difference to their decisions. Schipper and Vincent (2003) proposed that earnings persistence and value-relevance are derived from a decision usefulness perspective which emphasised on the relevance of financial information. Jonas and Blanchet (2000) proposed that earnings persistence is specifically based on the users' needs since financial reporting users viewed highly persistent earnings as sustainable. This means that earnings are more permanent and less transitory. Barth, Beaver and Landsman (2001) suggested that value-relevance captures the relevance of earnings which inform present and potential investors in making rational investment decisions. Thus, earnings persistence and value-relevance are referred to as measures of earnings quality from the user needs' prospect.

Under the shareholder/investor protection's prospect, financial information should not mislead or confuse financial information users. It should be fully and fairly disclosed because information asymmetry occurs between management and financial information users. Thus, under the shareholder/investor protection's prospect, earnings quality should emphasise on the reliability or transparency of the financial information. Ball, Kothari and Robin (2000) and Ball, Robin and Wu (2003) asserted that conservatism captures the financial statement transparency while Schipper and Vincent (2003) suggested that accruals quality is consistent with the representational faithfulness perspective. In the context of shareholder/investor protection, earnings quality can be measured by conservatism and accruals quality.

2.2 Family Ownership

The relationship between family ownership and earnings quality is explained through two conflicting hypotheses: the alignment hypothesis and the entrenchment hypothesis. Jensen and Meckling (1976), and Fama and Jensen (1983) argued that managerial ownership aligns the interests of owners and managers; it also reduces the agency costs

which are associated with the separation of decision control when management has reduced ownership in the firm. Demsetz and Lehn (1985) asserted that large shareholders have a stronger and superior oversights' incentive to monitor managers since their wealth is closely linked to the firm's welfare. Families can reduce the agency problem by placing one of their members in the position of a CEO (Anderson, Mansi, & Reeb, 2003). Since families are long-term investors, they would want to pass the firms to their descendants. Family ownership is stable; it is able to maintain efficient investment strategies which increase firm values. It was observed by Anderson and Reeb (2003) that family firms have significantly better firm performance than non-family firms. This means that family ownership has strong incentives to closely monitor managers; it is also likely to have better information on the firms. These information can be used to reduce firm's cost of debts. Family ownership is also associated with higher earnings quality because family members' interests are better aligned with other shareholders' welfare (Wang, 2006; Ali, Chen, & Radharkrishnan, 2007). Family ownership also tends to monitor the firm's management more cautiously, thereby supplying higher earnings quality to the financial statement users. This implies that family ownership, as long term investors, has a strong incentive to monitor the management. An (2015) reported that family ownership in Korea positively affects firm value which was measured as ROA, and where Tobin's Q and earnings quality were proxied by accruals quality, decreased firm value, and earnings quality. This is so in the case of the *chaebol* firms. Liu, Shi, Wilson and Wu (2017) also confirmed Wang's (2006) findings. Their results showed that family firms were less likely to engage in accruals-based earnings management. The positive impact of family ownership is shown even in developed countries. For instance, Eugster (2018) noted that family ownership of Swiss listed firms improved the quality of the firm's information environment because the alignment effect was more likely to dominate the entrenchment effect among family firms. Thus, low agency cost of family ownership leads to a better information environment, resulting in more precise earnings forecasts. Therefore, family ownership has the incentive to produce higher earnings quality, which can be explained by a better alignment of interests between majority and minority shareholders among family firms.

Different arguments (Morck, Shleifer, & Vishny 1988) have offered the positive effects of family ownership on earnings quality. It was claimed that management entrenchment could occur when insider holdings are high, causing a moral hazard, and the information

asymmetry problem between insiders (owner-manager) and outside investors (Morck, Shleifer, & Vishny 1988). Founding families have a strong incentive to ensure that their firms do not pass on to others (Anderson et al. 2003), and for this to happen, most family firms position family members as the firm's CEO or as key members of the management. This practice excludes other more capable and talented outside professional managers. Inadvertently, family firms may hire lower quality management, thereby resulting in lower firm performance. However, altruism may alter the incentive structure of family owned firms, such that many of the agency benefits are offset by moral hazards. It appears that owner management does not help to minimise the agency costs of ownership within family firms (Schulze, Lubatkin, Dino, & Buchholtz, 2001). Controlling shareholders are generally not willing to lose their control of the firm. The tenacity of control can more closely align the firm's actions with shareholders' own interests. Gomez-Mejia, Nunez-Nickel and Gutierrez (2001) found that family ownership and control were associated with greater managerial entrenchment in Spanish firms. Prencipe and Bar-Yosef (2011) also showed that the impact of board independence on earnings management was weaker in family-controlled companies due to the board control of family members serving as CEOs.

Specifically, in the East Asian emerging-market, a substantial number of firms are owned and managed by controlling families (Claessens et al., 2000). Fan and Wong (2002) suggested that controlling family shareholders in East Asian countries tend to take advantage of flexibility and discretion over accounting choice or auditor selection, so as to distort the firm's true earnings performance. Ball et al. (2003) found that the earnings quality of four East Asian countries (Hong Kong, Singapore, Malaysia and Thailand) were low despite receiving common-law accounting regimes. This outcome was interpreted as controlling family ownership overriding the incentives to report higher-quality earnings. Korean studies (Joh, 2003; Kim & Yi , 2006) showed that a higher control-ownership disparity was prevalent in Korea, thereby exacerbating the agency problem, leading to low firm performance and earnings quality. An and Naughton (2009) also reported that family ownership positively affects firm value, while higher control-ownership disparity was more prevalent in *chaebol* firms than in non-*chaebol* firms, thus *chaebol* firms showed lower firm values and earnings quality.

Chi, Hung, Cheng and Lieu (2015) found that family firms in Taiwan were more likely to engage in earnings management than non-

family firms. Al-Jaifi (2017) documented that lower earnings quality (high earnings management) signals information, particularly in a higher level of ownership concentration country, like Malaysia. This causes a higher likelihood of expropriating minority shareholders. Tessema, Kim and Dandu (2018) examined how ownership structure of Korean business groups (*chaebol* firms) affects earnings quality. Similar to this study, they found that *chaebol* firms have high ownership-control disparity, thereby causing lower earnings quality.

In this regard, it appears that higher earnings quality is determined by the incentives of financial statement preparers (controlling family shareholders or family owner), not by legal/judicial or accounting regimes (Ball & Shivakumar, 2005). In view of the entrenchment effect of family ownership, as family shareholdings increase, family managers become less constrained by disciplinary forces and more entrenched, therefore, higher family ownership can provide lower earnings quality.

2.3 Hypotheses Development

Korean firms are noted for their concentrated share ownerships, affiliated firms and highly diversified business structures. The controlling family shareholders control these firms through a chain of ownership relations (pyramidal ownership). Korean family ownership structures have a significant divergence between control (voting rights) and ownership (cash flow rights) of controlling. This is made possible because there are extensive reciprocal shareholding agreements among member firms. However, there are few mechanisms which can control the discretionary power of the controlling shareholders. Due to the high disparity between cash flow rights and control rights, the controlling shareholders have the incentive and the discretionary power to expropriate minority investors by investing the firm's resources to maximise their own or the group's wealth, even when such investments do not maximise the value of the firm (Bae, Kang, & Kim, 2002). The effect of the expropriation activities would eventually emerge in the firms accounting earnings and book values, thereby resulting in some disciplinary actions taken by outside investors or by the regulatory bodies. In this regard, controlling family shareholders also have the incentive to hide the firm's true economic performance so as to reduce outsider interference.

Warfield, Wild and Wild (1995) found that high cash flow rights (ownership) reduce earnings management due to the decreased demand

for accounting-based contracts. This suggests that high family owner-ship, excluding control via affiliated firms, can positively affect earnings quality. From the perspective of Taiwan, Chu (2011) documented that the positive association is strong, particularly when family members also served as CEOs, top managers, chairpersons, or directors of the firms. This is because family ownership is also combined with active family management and control. Recent Korean studies (Koh & Park, 2013) have proven the alignment effect of family ownership. Koh and Park (2013) revealed that family firms in which family members also participated in the management, tend to demonstrate lower earnings managements. An (2015) found that pure family ownership, excluding affiliated ownership, mitigates agency problems, thereby improving firm value and earnings quality. Based on the argument above, the following competing hypotheses will be examined.

H_1: Family ownership of Korean firms is systematically associated to earnings quality.

H_{1a}: Pure family ownership of Korean firms is positively associated to earnings quality.

H_{1b}: The control-ownership disparity of Korean firms is negatively associated to earnings quality.

According to La Porta et al. (1999), large corporations in most wealthy countries have controlling shareholders who enjoy control in excess of their equity holding based on a hierarchical chain of ownership and participation in management. In the context of the Korean economy, the importance of the *chaebol* business groups, needs no emphasis. A *chaebol* firm is defined as a gathering of formally independent firms under the single common administrative and financial control of one family. It is a term defined by the Korea Fair Trade Commission (KTFC) as "a group of firms of which more than 30 per cent of shares are owned by the group's controlling shareholders and affiliated firms." Each year, the KFTC ranks *chaebol* firms according to the size of their total assets, and it only identifies the top 30 groups. This is because the 30 largest *chaebol* firms account for above 20 per cent of the total output of Korea's GDP. Second, *chaebol* firms follow the multidivisional organisational structure, under which each individual affiliated firm functions as an operating division. Finally, despite their huge size, *chaebol* firms are largely family-controlled, with major decisions of the *chaebol* firms being in the hands of a controlling family rather than professional management. Cross-shareholding enables a few individuals, such as

the Lee family of the Samsung Group, to tightly control their legally independent firms.

In Korea, the focus of the agency problem is between controlling shareholders and minority shareholders. This is due to the *chaebol* firms' inherent governance structure. As mentioned above, owner-managers of *chaebol* firms have every advantage to expropriate other investors in the firm. This agency problem of expropriation is particularly serious when there are few mechanisms available to protect investors, and to control the discretionary powers of the owner-managers. Baek, Kang and Park (2004) analysed the Korean firms during the 1997 financial crisis. They found that *chaebol* firms with concentrated ownership controlled by family shareholders experienced a larger drop in the value of their equity than firms with less concentrated ownership. This result implies that corporate governance is significantly related to firm value. Thus, differences in corporate governance practice at the firm's level have an important role in determining firm value. An (2015) also found the negative impact of *chaebol* firms on firm value and earnings quality. He noted that pure family ownership of *chaebol* firms was significantly lower than non-*chaebol* firms. Thus, it is concluded that significant affiliated ownership of *chaebol* firms can result in low firm value and earnings quality. Based on this, the following hypothesis was formulated.

H_2: Family ownership of *chaebol* is negatively associated to earnings quality

3.   Research Methodology

3.1 Sample Selection

This study uses Korean firms that were listed on the Korean Stock Exchange (KSE) for 13 years (2000-2012). Only non-financial firms were included, hence all the financial institutions (e.g., commercial banks, insurance firms, security brokerage firms) were omitted. This is because the two industries have different accounting methods, format of financial statements, and different regulatory requirements. The financial statements of the non-financial firms, and their stock data required for analysis, were obtained from the OSIRIS and KIS-VALUE databases while the ownership data were manually sourced from the business reports of each firm via the DART system (http://dart.fss.or.kr) provided by the Korean Financial Supervisory Commission (KFSC), the equivalence of the SEC in Korea. The final sample consists of a panel

data of 489 non-financial Korean firms, and a total of 6,357 firm-year observations, accumulated over the 13-year period. The sample firms being examined are from 10 industry groups classified by the Korean Standard Industry Classification (SIC).

3.2 *Measure of Earnings Quality*

As a proxy of the financial reporting quality, earnings quality can be classified into two categories: 1) user needs, and 2) shareholder/investor protection. From the user needs prospect, earnings quality was measured as persistence and value-relevance while under the shareholder/investor protection's prospect, earnings quality is measured as conservatism and accruals quality. To address the association between earnings quality and foreign investors, earnings quality is set as a dependent variable, following Francis, LaFond, Olsson and Schipper's (2004) methodology.

Since earnings quality is the proxy for user needs, this study measures earnings persistence as the slope-coefficient (β_1) estimates of the regression of current earnings on previous earnings. Earnings persistence means how much of the current earnings will persist into the future, and continue from period to period. In order to measure the value-relevance of the accounting information, this study uses Francis et al.'s (2004) methodology where price functions for both earnings and book value of equity. The explanatory power of regression (R^2) was used as the matrix to measure the value-relevance of earnings and book value.

With earnings quality serving as proxy for shareholder/investor protection, this study measured conservatism by using Ball and Shiva-kumar's (2005) accruals-based test of loss recognition model. Conservatism was thus measured by the incremental coefficient on the association between accruals and negative cash flows. Accruals quality was measured following Dechow and Dichev's (2002) approach. Accruals quality for each firm was thus measured as the absolute value of firm-level residuals ($|\varepsilon_{i,t}|$), from the industry level pooled cross-sectional regression of total current accruals on lagged current, and future cash flows plus the change in revenue and gross property, plant, and equipment.

3.3 *Measure of Family Ownership and Wedge*

Family ownership comprises voting rights in the form of cash flow rights, percentage of equity shares directly held by the largest share-

holder and his/her family as well as the share ownership controlled through the affiliated firms. The Korean National Tax Law states that controlling shareholder ownership is the total number of shares held by the largest shareholder, his/her relatives[3], specially related persons, and the affiliated firms. The Korean Stock Exchange Law defines the largest shareholder as a person, who together with any specially related persons[4], holds the largest number of stocks, based on the total number of stocks with voting rights of a firm[5].

In previous researches, the agency problem between the controlling shareholders (including family and minority shareholder) can be changed by the controlling shareholders' ownership and their ownership-control disparity, such as the wedge ratio (*WR*) and the wedge multiplier (*WM*). Based on this, family ownership variables can be classified as: (1) pure family ownership (*PUREFAM*), and (2) ownership-control disparity (*WEDGE*).

Pure family ownership (*PUREFAM*) is the direct ownership of cash flow rights owned by the largest shareholders, and his/her family, excluding stocks held by affiliated firms. The control rights are the sum of the direct ownership, and the indirect shareholding of affiliated firms, which is the controllable share of the controlling shareholder.

Ownership-control disparity (*WEDGE*) was measured in two ways by the Korean Fair Trade Commission (KFTC) which had been monitoring the ownership-control disparity of *chaebol* firms since 2003. According to the KFTC, ownership-control disparity was measured as a wedge ratio and a wedge multiplier. The wedge ratio (*WR*) was calculated as the simple difference between cash flow rights (pure family ownership), and voting rights (family ownership) while the wedge multiplier (*WM*) was measured as the ratio between voting rights and cash flow rights (family ownership/pure family rights). However, the *WM* can be excessively large when cash flow rights (denominator) are small. To reduce the disadvantage of the *WM*, the logarithm of the *WM* was used to complement the *WM*.

The *WR* had been used in previous studies (Claessens et al., 2002; La Porta et al., 1999). It was able to show the absolute difference between

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[3] A spouse, a blood relative within eight degrees of kinship, or an in-law within four degrees of kinship

[4] "The major shareholder of the concerned company and that person's spouse and lineal ascendant and descendant; the spouse or lineal ascendant and descendant of an officer of the concerned company."(Article 54-5-(4), Korean Stock Exchange Law)

[5] Article 54-5, Korean Stock Exchange Law.

ownership and control, but it was not able to fully reflect the magnitude of control over ownership. Lemmon and Lins (2003) defined *WM* as the value of control rights divided by ownership rights. They used it to overcome the limitation of not separating management's control and ownership. This is because it is more important to have control over ownership in the corporate governance structure. The current study subscribes to the KFSC's recommendation and Lemmon and Lins' (2003) approach. Here, ownership-control disparity (*WEDGE*) was measured as the wedge ratio (*WR*), and the wedge multiplier (*WM*). The larger the *WR* and *WM* is, the larger the ownership-control disparity will be.

3.4 Control Variables

The seven control variables that may affect firm value and earnings quality are: foreign ownership, *chaebol* group dummy, size, leverage, sales growth ratio, capital asset investment ratio and liquidity ratio. Foreign ownership (*FOREIGN*) is the percentage of equity shares held by all foreign shareholders as at the end of the year. They are calculated as the total number of shares held by the foreign shareholders and then divided by the total number of shares outstanding. In Korea, the potentially positive impact of foreign ownership, as large outside blockholders, is that it can mitigate family managerial opportunism. Therefore, higher proportions of foreign ownership would induce firms to improve earnings quality, and to decrease opportunistic managerial accounting choices and decisions (An, 2015). To control for size effects, the natural logarithm of the book value of total assets (*SIZE*) is included as proxy for firm size. Leverage (*LEV*) is the ratio of the total debts to total assets. Generally, the families of Korean *chaebol* hold large proportions of shares which may be much less than the majority holdings of the firm. However, they are able to exercise effective control of the firm due to the holdings of the family and their affiliated firms. Therefore, *chaebol* firms in Korea (listed firms with assets of 5 trillion KRW) are subjected to many government regulations. In keeping with prior Korean studies (Joh, 2003; Kim & Yi, 2006, Choi, 2007), this study uses size proxy for membership of *chaebol* firms as a dummy variable [*CHAEBOL* takes the value of one for firms with asset of 5 trillion KRW (US$ 4.7 billion) or more; and zero otherwise]. High growth firms are expected to increase earnings quality, but they can be regarded as risky firms which inflated their earnings. To control these offset effects on earnings quality, growth and profitability options are included in

this study. Growth (*GRW*) refers to firm's sale growth ratio, measured by annual percentage change of sales. As a measure of profitability, the ratio of net income to total assets (*ROA*) is employed. Firms with negative earnings (*LOSS*) is a dummy variable that takes the value of one if the firms' previous year's net income is negative, and zero otherwise.

3.5 Empirical Model

This study uses the following equations to test the impact of family ownership on four proxies of earnings quality.

$$(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1(PUREFAM)_{i,t} + \beta_2(FOREIGN)_{i,t} + \beta_3(CHAEBOL)_{I,T} + \\ \beta_4(PUREFAM*CHAEBOL)_{I,T} + \zeta_1(SIZE)_{i,t} + \zeta_2(LEV)_{i,t} + \\ \zeta_3(GRW)_{i,t} + \zeta_4(LOSS)_{i,t} + \zeta_5(ROA)_{i,t} + \sum_{t=1}^{2001-2012} \psi_t(YEAR)_t + \varepsilon_{i,t} \end{cases} \quad (1)$$

$$(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1(WEDGE)_{i,t} + \beta_2(FOREIGN)_{i,t} + \beta_3(CHAEBOL)_{I,T} + \\ \beta_4(WEDGE*CHAEBOL)_{I,T} + \zeta_1(SIZE)_{i,t} + \zeta_2(LEV)_{i,t} + \\ \zeta_3(GRW)_{i,t} + \zeta_4(LOSS)_{i,t} + \zeta_5(ROA)_{i,t} + \sum_{t=1}^{2001-2012} \psi_t(YEAR)_t + \varepsilon_{i,t} \end{cases} \quad (2)$$

Since this study utilises panel data, the panel study methodology is considered. According to Himmelberg, Hubbard and Palia (1999) the choice of ownership structure depends on unobserved firm characteristics, such as the contractual, regulatory, or informational environment. With panel data, one common treatment used for this unobserved time-constant effect is the fixed-effect (FE) regression known as the least square dummy variable (LSDV) analysis (Wooldridge 2002; Baltagi 2005). Himmelberg et al. (1999) had suggested that the firm's fixed effect estimators should be used when examining the relationship between ownership and firm performance. The reason is because the cross-sectional variation in ownership, which is explained by the unobserved firm heterogeneity, is the firm's fixed effect. However, Zhou (2001) argued that the firm's fixed effect model is not appropriate in this setting since ownership within a firm gradually changes from year to year. In other words, the ownership-firm value relationship is likely to be a cross-sectional phenomenon.

Extending on Zhou's (2001) argument, the FE estimation is found to be unsuitable for this study for several reasons. First of all, the FE estimation requires a significant variable value within the panel (firm) variations in order for these to produce consistent and efficient estimates. The inclusion of the firm's fixed effects essentially removes most cross-sectional variations of the dependent variable. Therefore, the effect of other explanatory variables (e.g., *SIZE*, *GRW*, etc.), may not be observed, unless ownership and board composition measures exhibit substantial time-series variations. This would therefore make the FE estimates imprecise. Second, the FE estimates may aggravate the problem of multicollinearity due to the presence of many dummies, known as LSDV (Baltagi 2005). Third, when the panel dataset (observations on 489 firms over 13 years in this study) consists of large '*N*' (489 firms), and fixed small '*T*' (13 years), the FE estimation becomes inconsistent (Baltagi, 2005). Moreover, for large *N*, FE estimation would lead to an enormous loss of degrees of freedom (Baltagi, 2005). Fourth, when the sample is extracted from a large population (listed firms on the KSE in this study), individual specific constant terms are regarded as randomly distributed across the cross-sectional firms (Green, 2000). Finally, the general way of choosing between fixed and random effect should be through a Hausman test but this test is not meant to indicate which approach is good, but to show in what way they are different (Black et al. 2009). In addition, Green (2000) has also suggested that a Hausman test becomes problematic when using unbalanced panels, as is the case of this study. Consequently, this study employs the random-effect regression (RE) as the empirical model.

4. Results

4.1 Descriptive Statistics

Table 1 shows the descriptive statistics for the variables. As for earnings quality on the user needs, the mean (median) of persistence in the sample was 0.314 (0.263), and the mean (median) of value-relevance was 0.453 (0.452). Turning to earnings quality on shareholder/investor protection, it appears that conservatism has a mean (median) value of 0.193 (0.079), and accruals quality has a mean (median) value of 0.076 (0.023), respectively. The average pure family ownership is 0.206 which is relatively low when compared to other East Asian countries. For example, the average family ownership of Hong Kong was 0.489,

Table 1: Description of the Samples

Categories	Variables	Mean	Median	Min	Max	SD
Earnings Quality (User Needs)	PERSISTENCE	0.314	0.263	-4.634	11.188	0.703
	VALUE RELEVANCE	0.453	0.452	0.003	0.992	0.253
Earnings Quality (Shareholder/ Investor Protection)	CONSERVATISM	0.193	0.079	-77.72	54.415	6.436
	ACCRUALS QUALITY	0.076	0.023	1.48E-05	3.362	0.199
Independent Variables (Family Ownership)	PUREFAM	0.206	0.203	0.0003	0.7883	0.168
	WR	0.145	0.069	0.0007	0.887	0.177
	WM	24.069	1.243	1.000	4776.000	204.787
	Log(WM)	0.691	0.217	0.000	8.471	1.223
Control Variables	FOREIGN	0.108	0.017	0.000	0.982	0.145
	CHAEBOL	0.084	0.0000	1.000	0.000	0.276
	SIZE	21.230	19.430	12.922	25.890	1.456
	LEV	0.546	0.495	0.017	27.478	0.729
	LOSS	0.229	0.000	0.000	1.000	0.412
	GRW	1.268	0.387	0.0002	288.00	6.912
	ROA	0.014	0.036	-4.724	3.599	0.231

(Ng, 2005[6]), Singapore was 0.571 (Chau & Gray, 2002), and Malaysia was 0.430 (Tam & Tan, 2007). The mean value of the two measures of ownership-control disparity – 'wedge ratio (WR)' and 'wedge multiplier' (WM) were 0.145 and 24.07, respectively. The supplemented variable of WM, the log of wedge multiplier (Log(WM)), has a mean (median) value of 0.691 and 0.217, respectively, and the standard deviation is much more reduced, when compared to the original WM. Here, foreign investor (FOREIGN) has a mean value of 0.108, and a median value of 0.017. The severe difference between mean and median for foreign ownership imply that foreign ownership is concentrated in specific firms. This feature of foreign ownership confirms that foreign shareholders prefer large manufacturing firms with good accounting performance, lower unsystematic risks, and lower leverage firms or underweight, smaller but highly leveraged firms (Kang & Stulz, 1997).

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[6] Ng (2005) use managerial ownership as proxy of family ownership in Hong Kong because the correlation between managerial ownership and family ownership is almost one (0.978).

4.2 Empirical Results

Table 2 presents the results generated from the random-effect regression estimates showing the association between earnings quality and the user needs' prospect (e.g., persistence and value-relevance), the shareholder/ investor protection's prospect (e.g., conservatism and accruals quality) and family ownership variables, respectively.

Consistent with the prediction that family ownership and owner-ship control disparity might affect earnings quality differently, the results show that *PUREFAM* is positively related to value-relevance (0.046), but is negatively linked with accruals quality (-0.086) at 0.10 and 0.01 levels, respectively. Accordingly, *PUREFAM* increases earnings quality not only on the user needs' prospects but also on the shareholder/ investor protection's prospects. This result strengthen the alignment effect of family ownership in Korea. However, as for persistence and conservatism measure, *PUREFAM* is statistically not significant despite consistency with expected signs. Overall, the relation between *PUREFAM* and earnings quality support the alignment effect of family ownership, thus H_{1a} is accepted. However, more careful efforts could be made to interpret the positive effects of *PUREFAM* on earnings quality because only two variables (Value-relevance and accruals quality) are statistically significant.

Foreign ownership (*FOREIGN*) is significantly positive with earn-ings quality on user needs. The coefficient estimates of *FOREIGN* on persistence and value-relevance are 0.220 and 0.241, and at the 0.01 level, respectively. In the association with earnings quality on shareholder/ investor protection, *FOREIGN* is found to be not statistically significant, both for conservatism and accruals quality. Overall, the relation between *FOREIGN* and earnings quality support the active monitoring hypothesis of foreign ownership as institutional shareholder. However, the positive impact of *FOREIGN* on earnings quality would require more detailed interpretations.

With regards to the *chaebol* firms' variables, the interaction variable with pure family ownership and *chaebol* firms (*PUREFAM*CHAEBOL*) as well as *chaebol* dummy (*CHAEBOL*) shows significant negative effects with value-relevance and accruals quality, respectively. Rather, the pure family ownership of Korean *chaebol* firms has negatively impacted earnings quality. According to An (2015), the average of pure family ownership of *chaebol* firms is 8.52 per cent whereas with non-*chaebol* firms, the average of pure family ownership reach 26.62 per cent. Therefore, this result can be interpreted as significantly showing

Table 2: Random Effect Estimation Results for Pure Family Ownership

Variables		User Needs		Shareholder/ Investor Protection	
		Persis-tence	Value-Relevance	Conserva-tism	Accruals Quality
Independent Variables	PUREFAM	0.061	0.046*	0.313	-0.086***
		(1.096)	(1.922)	(1.215)	(-3.151)
	PUREFAM* CHAEBOL	0.010	-0.104*	-0.857	0.540***
		(0.038)	(-1.991)	(-0.696)	(3.745)
Control Variables	FOREIGN	0.220***	0.241***	0.034	0.063
		(3.164)	(8.050)	(1.287)	(1.505)
	CHAEBOL	-0.031	-0.136***	-0.045	0.324***
		(-0.619)	(-3.975)	(-0.195)	(10.319)
	SIZE	0.004	-0.009**	0.082**	0.034***
		(0.443)	(-2.256)	(2.027)	(6.153)
	LEV	-0.003	-0.233***	0.182***	0.004
		(-0.251)	(-4.138)	(2.997)	(0.687)
	GRW	0.108***	0.036***	-0.255***	-0.026**
		(-0.392)	(4.054)	(-2.942)	(-1.996)
	LOSS	0.008	-0.023**	0.347***	0.016
		(0.342)	(-2.229)	(3.056)	(1.468)
	ROA	0.391	-0.061***	0.326	-0.028
		(-1.465)	(1.956)	(-0.410)	(-1.134)
Constant		-0.001	0.689***	-1.267	-0.618***
		(-0.006)	(6.185)	(-1.631)	(-5.873)
Model Fits	Adj R²	0.018***	0.042***	0.026***	0.158***
	F-Statistics	6.154	14.790	8.957	52.237

Note:

$$(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1(PUREFAM)_{i,t} + \beta_2(PUREFAM*CHAEBOL)_{i,t} + \beta_3(FOREIGN)_{i,T} + \beta_4(CHAEBOL)_{i,t} \\ + \zeta_1(SIZE)_{i,t} + \zeta_2(LEV)_{i,t} + \zeta_3(GRW)_{i,t} + \zeta_4(LOSS)_{i,t} + \zeta_5(ROA)_{i,t} + \sum_{t=1}^{2001-2012} \psi_t(YEAR)_t + \varepsilon_{i,t} \end{cases}$$

Subscripts i denotes individual firms, t time period. The dependent variable *Earnings Quality* is for four measures of earnings quality: 1) Persistence, 2) Value-Relevance, 3) Conservatism, and 4) Accruals Quality. *PUREFAM* is the percentage of equity shares owned by the largest personal shareholder and his/her families. *FOREIGN* is the percentage of equity shares held by foreign investors. *CHAEBOL* is a dummy variable which takes the value of one for firms with asset of 5 trillion KRW (US\$4.7 billion) or more; and zero otherwise. Firm size (*SIZE*) is the natural log of the total assets. Leverage (*LEV*) is total debt scaled by total assets. Growth prospects (*GRW*) is market to book ratio of equity. Firm with negative earnings (*LOSS*) is a dummy variable that takes the value of one if firm's previous year's net income was negative, and zero otherwise. Profitability (*ROA*) is return on assets. *YEAR* is a time dummy. Superscripts *, ** and *** indicate statistical significance at 10%, 5% and 1% levels, respectively (*t*-statistics).

that low pure family ownership of *chaebol* firms causes lower earnings quality. Although this study finds the negative effect of pure family ownership of *chaebol* firms on value-relevance and accruals quality, hypothesis H_2 is accepted.

Tables 3 and 4 indicate the results of ownership-control disparity (*WEDGE*) on earnings quality. Inconsistent with prior Korean studies (Joh, 2003), the coefficients of both *WR* and *WM* are statistically insignificant with persistence and conservatism. Thus, the impact of higher ownership-control disparity on firm value is weak and insignificant. Interestingly, ownership-control disparity positively affected value-relevance and accruals quality. The coefficients of *WR* and *WM* on value-relevance are statistically significant and positive at the 0.05 and 0.10 levels, respectively. In the association with accruals quality, the coefficients of *WR* on accruals quality are statistically significant and negative (-0.036) at the 0.10 level. This result is also inconsistent with prior Korean studies (Joh, 2003, Kim & Yi, 2006) which highlight that high affiliated ownership increase firm's earnings management (measured as discretionary accruals). This is because affiliated ownership provides controlling shareholders with more incentives and opportunities to hide adverse consequences of their self-serving behaviours.

The inconsistent results of this study can be interpreted in two ways. First, internal shareholders (controlling family shareholders) have a higher predictability of firm's financial information since information asymmetry exists between internal shareholders, and external shareholders (minority shareholders). For example, if the firm's prospects are bright, internal shareholders would increase their ownership and if otherwise, they would lower their ownership. Accordingly, it can be assumed that the greater the firm has with a larger ownership-control disparity, the higher the earnings quality. This is achieved by reducing the agency costs between the internal and external shareholders since the controlling shareholders also facilitate the monitoring, supervision and containment of the management. Second, ownership-control disparity of non-*chaebol* firms with positive effects of *WEDGE* on earnings quality is more prevalent in *chaebol* firms. In this study, the mean value of *WR* of *chaebol* firms is 24.87 per cent[7] while the mean value of *WR* of non-*chaebol* firms is 14.05 per cent[8]. Accordingly, the *WR* of *chaebol*

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[7] As of 2007, *WR* of *chaebol* firms had increased to 31.28 per cent (KFTC).

[8] In addition, mean value of pure family ownership (cash flow rights) of *chaebol* firms was 7.37 per cent, while that of non-*chaebol* firms was 20.63 per cent.

Table 3: Random Effect Estimation Results of Wedge Ratio

Variables		User Needs		Shareholder/ Investor Protection	
		Persis-tence	Value-Relevance	Conserva-tism	Accruals Quality
Independent Variables	WR	-0.066	0.047**	0.578	-0.036*
		(-1.259)	(2.051)	(1.501)	(-1.908)
	WR* CHAEBOL	0.052	-0.139*	-1.24**	0.179*
		(0.291)	(-1.812)	(-2.368)	(1.760)
Control Variables	FOREIGN	0.217***	0.231***	-0.294	0.059
		(3.217)	(7.673)	(-1.124)	(1.386)
	CHAEBOL	-0.046	-0.024	-1.639***	0.294***
		(-0.821)	(0.991)	(-5.075)	(8.552)
	SIZE	0.004	-0.011***	0.105**	0.037***
		(0.514)	(-2.853)	(2.575)	(6.406)
	LEV	-0.005	-0.024***	0.185***	0.004
		(-0.404)	(-4.287)	(3.068)	(0.755)
	GRW	0.108***	0.032***	-0.252***	-0.027**
		(5.798)	(4.015)	(-2.903)	(-2.026)
	LOSS	0.003	-0.025**	0.347***	0.019*
		(0.119)	(-2.350)	(3.082)	(1.665)
	ROA	-0.073	-0.059***	0.311	-0.027
		(-1.486)	(-2.796)	(1.359)	(-1.089)
Constant		0.012	0.738***	-1.697**	-0.677
		(0.070)	(10.321)	(-2.206)	(-6.229)
Model Fits F-Statistics	Adj R^2	0.018*** 6.197	0.042*** 14.833	0.027*** 9.456	0.142*** 46.967

Note:

$$(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1(WR)_{i,t} + \beta_2(WR*CHAEBOL)_{i,t} + \beta_3(FOREIGN)_{I,T} + \beta_4(CHAEBOL)_{i,t} \\ + \zeta_1(SIZE)_{i,t} + \zeta_2(LEV)_{i,t} + \zeta_3(GRW)_{i,t} + \zeta_4(LOSS)_{i,t} + \zeta_5(ROA)_{i,t} + \sum_{t=1}^{2001-2012}\psi_t(YEAR)_t + \varepsilon_{i,t} \end{cases}$$

Subscripts *i* denotes individual firms, *t* time period. The dependent variable *Earnings Quality* is for four measures of earnings quality: 1) Persistence, 2) Value-Relevance, 3) Conservatism, and 4) Accruals Quality. *WR* is wedge ration, the difference between family ownership and pure family ownership. *FOREIGN* is the percentage of equity shares held by foreign investors. *CHAEBOL* is a dummy variable which takes the value of one for firms with asset of 5 trillion KRW (US$4.7 billion) or more; and zero otherwise. Firm size (*SIZE*) is the natural log of the total assets. Leverage (*LEV*) is total debt scaled by total assets. Growth prospects (*GRW*) is market to book ratio of equity. Firm with negative earnings (*LOSS*) is a dummy variable that takes the value of one if firm's previous year's net income was negative, and zero otherwise. Profitability (*ROA*) is return on assets. *YEAR* is a time dummy. Superscripts *, ** and *** indicate statistical significance at 10%, 5% and 1% levels, respectively (*t*-statistics).

Table 4: Random Effect Estimation Results of Wedge Multiplier

Variables		User Needs		Shareholder/ Investor Protection	
		Persis- tence	Value- Relevance	Conserva- tism	Accruals Quality
Independent Variables	WM	8.91E-05 (1.107)	6.23E-05* (1.796)	-0.005 (-1.367)	-1.72E-05 (-0.346)
	WM* CHAEBOL	-5.30E-05 (-0.528)	-1.81E-07 (-0.004)	6.72E-06 (0.015)	7.99E-05 (1.489)
Control Variables	FOREIGN	0.205** (2.351)	0.274*** (7.301)	-0.174 (-0.123)	0.010 (0.249)
	CHAEBOL	-0.021 (-0.414)	-0.015 (-0.713)	0.039 (0.168)	0.239*** (7.601)
	SIZE	0.029 (0.287)	-0.009* (-1.944)	0.091* (1.935)	0.046*** (6.421)
	LEV	-0.005 (-0.313)	-0.026*** (-3.257)	0.127 (1.517)	-0.001 (-0.193)
	GRW	0.095*** (4.926)	0.027*** (3.274)	-0.222** (-2.498)	-0.026** (-2.221)
	LOSS	0.011 (0.408)	-0.021* (-1.701)	0.380*** (2.933)	0.004 (0.405)
	ROA	-0.034 (-0.468)	-0.035 (-1.113)	0.113 (0.341)	-0.087*** (-3.007)
Constant		0.035 (0.179)	0.701*** (8.431)	-1.479* (-1.667)	-0.836*** (-6.1554)
Model Fits F-Statistics	Adj R²	0.016*** 4.452	0.042*** 11.977	0.027*** 7.564	0.098*** 24.816

Note:

$$
(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1 (WM)_{i,t} + \beta_2 (WM * CHAEBOL)_{i,t} + \beta_3 (FOREIGN)_{I,T} + \beta_4 (CHAEBOL)_{i,t} \\ + \zeta_1 (SIZE)_{i,t} + \zeta_2 (LEV)_{i,t} + \zeta_3 (GRW)_{i,t} + \zeta_4 (LOSS)_{i,t} + \zeta_5 (ROA)_{i,t} + \sum_{t=1}^{2001-2012} \psi_t (YEAR)_t + \varepsilon_{i,t} \end{cases}
$$

Subscripts *i* denotes individual firms, *t* time period. The dependent variable *Earnings Quality* is for four measures of earnings quality: 1) Persistence, 2) Value-Relevance, 3) Conservatism, and 4) Accruals Quality. *WM* is wedge multiplier, calculated by family ownership divided by pure family ownership. *FOREIGN* is the percentage of equity shares held by foreign investors. *CHAEBOL* is a dummy variable which takes the value of one for firms with asset of 5 trillion KRW (US\$4.7 billion) or more; and zero otherwise. Firm size (*SIZE*) is the natural log of the total assets. Leverage (*LEV*) is total debt scaled by total assets. Growth prospects (*GRW*) is market to book ratio of equity. Firm with negative earnings (*LOSS*) is a dummy variable that takes the value of one if firm's previous year's net income was negative, and zero otherwise. Profitability (*ROA*) is return on assets. *YEAR* is a time dummy. Superscripts *, ** and *** indicate statistical significance at 10%, 5% and 1% levels, respectively (*t*-statistics).

groups is much larger, and this indicates that control via affiliated ownership is less significant in non-*chaebol* firms. Thus, hypothesis H_{1b} is not accepted. The same applied for the pure family ownership (*PUREFAM*), where *WR* is also significant with value-relevance and accruals quality. Nevertheless, the rejection of H_{1b} must be interpreted with more caution.

As expected, the coefficients of interaction on ownership-control disparity and *chaebol* firms and *chaebol* dummy are negatively significant with value-relevance and conservatism, but positively significant with accruals quality at the 0.01 level. Thus, it can be said that Korean *chaebol* firms negatively impact earnings quality even after the Asian financial crisis. This confirms the findings of Kim and Yi (2006) and An (2015). Overall, the ownership-control disparity results of *chaebol* firms are quite similar to those of the pure family ownership of *chaebol* firms, as noted in Table 2. This therefore, indicates that controlling family ownership of *chaebol* firms have a dominant influence on firms using affiliated ownership. Although hypothesis H_2 is accepted, it should be interpreted with more caution too because *WR* showed a significantly positive effect on two proxies of earnings quality – value-relevance and accruals quality.

Further, the relation between *FOREIGN* and earnings quality is noted to be significantly positive with persistence and value-relevance, but negative with conservatism. This finding therefore, endorses the observation that foreign shareholders do not efficiently monitor the firm's management. Other control variables are not substantially different from those presented in Table 2. In general, the results can be deduced to be consistent with the expectations.

The disadvantage of *WM* has been discussed in section 3.3 and *WM* can be excessively large when cash flow rights (denominator) are small. Thus, this study conduct an additional test by using the logarithm of *WM* as a complement. Table 5 indicates that the overall result is almost similar to those shown in Table 4. However, the interaction variable (*Log*(*WM*)*CHAEBOL) is noted to be significant with accruals quality at 0.10 level. In addition, the negative impact of *CHAEBOL* on accruals quality is also noted to be significantly strong at 0.01 level. This result therefore, highlights the robustness of the entrenchment effect for *chaebol* firms. It also confirms that large ownership-control disparity reduces earnings quality, especially for shareholder/investor protection. Thus, hypothesis H_2 is accepted.

Table 5: Random Effect Estimation Results of the log Wedge Multiplier

Variables		User Needs		Shareholder/ Investor Protection	
		Persis- tence	Value- Relevance	Conserva- tism	Accruals Quality
Independent Variables	*Log(WM)*	-7.61E-05	0.007*	-0.065	-8.63E-05
		(-0.008)	(1.794)	(-1.501)	(-0.018)
	Log(WM)	0.011	0.002	0.006	0.018*
	CHAEBOL	(0.558)	(0.226)	(0.951)	(1.892)
Control Variables	*FOREIGN*	0.225**	0.038***	-2.027***	0.019
		(2.571)	(7.328)	(-5.050)	(0.450)
	CHAEBOL	-0.035	-0.016	0.014	0.176***
		(-0.580)	(-0.623)	(0.168)	(5.411)
	SIZE	0.006	-0.010**	0.103**	0.033***
		(0.062)	(-2.258)	(2.159)	(5.021)
	LEV	-0.008	-0.026***	0.133	0.003
		(-0.459)	(-3.347)	(1.583)	(0.560)
	GRW	0.095***	0.001	-0.064**	-0.001
		(4.930)	(0.089)	(-0.950)	(-0.233)
	LOSS	0.011	-0.021*	0.377***	0.010
		(0.396)	(-1.701)	(2.899)	(1.105)
	ROA	-0.014	-0.029	0.076	-0.027***
		(-0.186)	(-0.927)	(0.227)	(-0.974)
Constant		0.085	0.728***	-1.678*	-0.582***
		(0.436)	(8.677)	(-1.874)	(-4.6634)
Model Fits	Adj R²	0.015***	0.035***	0.023***	0.080***
	F-Statistics	(4.296)	(10.105)	6.534	19.726

Note:

$$(EarningsQuality)_{i,t} = \begin{cases} \alpha + \beta_1(WM)_{i,t} + \beta_2(WM * CHAEBOL)_{i,t} + \beta_3(FOREIGN)_{I,T} + \beta_4(CHAEBOL)_{i,t} \\ + \zeta_1(SIZE)_{i,t} + \zeta_2(LEV)_{i,t} + \zeta_3(GRW)_{i,t} + \zeta_4(LOSS)_{i,t} + \zeta_5(ROA)_{i,t} + \sum_{t=1}^{2001-2012} \psi_t(YEAR)_t + \varepsilon_{i,t} \end{cases}$$

Subscripts *i* denotes individual firms, *t* time period. The dependent variable *Earnings Quality* is for four measures of earnings quality: 1) Persistence, 2) Value-Relevance, 3) Conservatism, and 4) Accruals Quality. *Log(WM)* is the logarithm of wedge multiplier, calculated by log (family ownership divided by pure family ownership). *FOREIGN* is the percentage of equity shares held by foreign investors. *CHAEBOL* is a dummy variable which takes the value of one for firms with asset of 5 trillion KRW (US$4.7 billion) or more; and zero otherwise. Firm size (*SIZE*) is the natural log of the total assets. Leverage (*LEV*) is total debt scaled by total assets. Growth prospects (*GRW*) is market to book ratio of equity. Firm with negative earnings (*LOSS*) is a dummy variable that takes the value of one if firm's previous year's net income was negative, and zero otherwise. Profitability (*ROA*) is return on assets. *YEAR* is a time dummy. Superscripts *, ** and *** indicate statistical significance at 10%, 5% and 1% levels, respectively (*t*-statistics).

5. Conclusion

This study examines the impact of family ownership on firm value and earnings quality by using panel data listed on the Korean Stock Exchange (KSE) over the 2000 to 2012 period. Specifically, this study employs two different measures of family ownership: pure family and two proxies of ownership-control disparity, the wedge ratio and the wedge multiplier. Unlike prior studies using the wedge ratio as the sole measure of ownership-control disparity, this study incorporates the wedge multiplier element even though it might exaggerates the ownership-control disparity. Lemmon and Lins (2003) mentioned that the wedge multiplier has the advantage to overcome the problem of the wedge ratio by not separating control rights and ownership rights. Thus, the use of the wedge multiplier is expected to verify the entrenchment effects with the control of interest alignment effects. The current study has also provided comprehensive results to show how family ownership influences earnings quality by using three types of family ownership variables and four proxies of earnings quality.

This study has found that family ownership increases earnings quality in non-*chaebol* firms. The effect of ownership-control disparity (Wedge) on earnings quality positively affect value-relevance and accruals quality. The findings confirm that family ownership in Korea support the alignment effects and that Korean *chaebol* firms show low earnings quality because of significantly lower pure family ownership and larger ownership-control disparity. This is also consistent with prior Korean studies (An, 2015). Controlling family shareholders of *chaebol* firms dominate their firms by using affiliated ownership, thus, significant ownership-control disparity of *chaebol* firms aggravate the entrenchment effects. Control via affiliated ownership is significant in *chaebol* firms because the ownership-control disparity of *chaebol* firms is about 10 per cent above that of non-*chaebol* firms. Through the tests conducted for *chaebol* firms, the negative impact of ownership-control disparity on earnings quality is confirmed.

This study has also found that foreign ownership is only significant with user needs' earnings quality (persistence and value-relevance). This indicates that foreign shareholders play a restrictive role in monitoring the firms. This may be attributed to the fact that as large outside blockholders, foreign shareholders act as transient investors without any significant incentive to monitor firm management.

This study has also provided new evidence to show the impact of family ownership on firm value and earnings quality. Many East-

Asian studies (Fan & Wong, 2002; Claessen et al., 2002; Ball et al., 2000, 2003) have suggested that family ownership decreases firm's value and earnings quality because controlling families dominate the firm at all levels of the firm's decision-making processes; they also override the incentives to report higher-quality earnings, thereby expropriating outside shareholders' wealth. However, the current study finds that family ownership is better aligned with the firms, thus higher family ownership increases earnings quality.

This study bears management and academic implications. The managements of *chaebol* firms or large business groups should try to improve the transparency and quality of their financial reporting. Market participants should be recognised for their incentives to do earnings management. Family firms which are very prevalent in emerging markets are significantly associated with earnings quality, and this should prompt analysts and investors to consider further valuations.

Nonetheless, as is relevant in all studies, this study also bears some limitations. First, this study has assumed a linear impact of family own-ership. Prior research (Demsetz, 1983) had suggested that an increase in insider shareholding (family shareholding) could increase management entrenchment. Thus, future research should seek to identify a non-linear relationship between family ownership and earnings quality. Second, four proxies of earnings quality were used, but they do not necessarily reflect all aspects of the earnings quality. This study shows that the results between family ownership and earnings quality are mixed as a result of using the four proxies. Thus, future studies may consider looking at the association between corporate governance and earnings quality. Finally, the outcome drawn of family ownership as provided by this study cannot be equated as saying that most of the hypotheses are contradictory or that the opposite hypotheses have been theoretically and empirically studied. It is important and necessary to consider carefully whether the ownership-control disparity can be an indicator of the negative influence of family ownership.

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Impact of Catering Incentives on Dividend Payment Decisions: Evidence from Indian Firms

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ABSTRACT

Manuscript type: Research paper

Research aims: The present study examines whether the catering incentives of dividends can influence firms' dividend payment decision for 781 sample firms listed on the National Stock Exchange (NSE) of India during the period of 1995-2015.

Design/Methodology/Approach: This study uses dividend premiums to measure the catering incentives of the dividends. The firms' dividend payment decision is measured by the propensity to pay dividends, and the decision to change dividend payments.

Research findings: The empirical results indicate that the catering incentives of dividends have a significant positive impact on the changes in the propensity to pay dividends. The findings suggest that the higher dividend premiums indicating the investors' higher demand for dividends can induce managers to increase the amount of dividends paid. Firm managers are less likely to cut or omit dividends when the investors' demand for dividends is high as reflected by the higher dividend premiums.

Theoretical contribution/Originality: The catering theory of dividend which is based on investor sentiment is new, and the empirical evidence supporting this theory is limited. This study aims to contribute to existing literature by examining whether the catering incentives of dividends can influence firms' dividend payment decision, in the context of India, during the period of liberalisation.

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Practitioner/Policy implication: This study has an implication for the management team. The investors in the Indian capital market show a preference for dividend payment. Firm managers could use these catering incentives for deciding dividend payments to investors.

Research limitation/Implications: As the study has not used the primary survey approach to collect data, it could not examine the corporate managers' and the investors' views about the determinants of the dividend policy. New insights could thus be provided by analysing the behaviour of other forms of dividends like bonus shares, stock splits and the share buybacks.

Keywords: Catering Incentives, Dividends, Dividend Policy, Dividend Premium, Propensity to Pay

JEL Classification: G30, G35

1. Introduction

Black (1976, p. 8) contends, "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just do not fit together". This explains why little is understood about why firms pay dividends and why investors value them. Researchers face many great challenges when trying to unravel some answers which could shed some light into the corporate sector's dividend policy due to its sensitive nature. Miller and Modigliani (1961) proposed the irrelevance proposition which suggests that in perfect capital markets with no taxes, zero transaction and agency costs, full availability of information and dividend policies are equivalent. No policy can increase the shareholders' wealth. Over the years, researchers (Jensen & Meckling, 1976; Bhattacharya, 1979; Litzenberger & Ramaswamy, 1979; Aharony & Swary, 1980; Rozeff, 1982; Easterbrook, 1984; DeAngelo, DeAngelo & Stulz, 2006) have developed alternative theories to explain why firms pay dividends. These theories which opposed the unrealistic assumptions of Miller and Modigliani (1961) in imperfect markets include tax clientele, signalling, agency costs and firm life cycle theories. Thus far, there has been no consensus among researchers on the subject of dividend policy.

Baker and Wurgler (2004a) proposed the catering theory of dividends as a way to explain why firms pay dividends. They explained that firm managers catered rationally to the time-varying investors' demand for dividends by paying dividends to the investors only when these investors put a premium on the dividend-paying stocks, or vice-versa. Several proxies were constructed to reflect the dividend premiums

so as to capture the time-varying investors' demand for dividends. In their study, Baker and Wurgler (2004a) found a positive relationship between the rate of dividend initiation and the dividend premiums. The propensity to pay dividends (Fama & French, 2001) was also found to be positively related to the dividend premiums. Here, "propensity to pay" was defined as the difference between the actual percentage of dividend payers, and the expected percentage of dividend payers, based on prevailing sample characteristics (Fama & French, 2001).

Interest in the catering theory of dividends has been growing since the seminal paper of Baker and Wurgler (2004a). Many researchers (see Baker & Wurgler, 2004b; Denis & Osobov, 2008; Ferris, Sen, & Yui, 2006a, 2006b; Ferris, Jayaraman, & Sabherwal, 2009; Hoberg & Prabhala, 2008; Tangjitprom, 2013) have examined the influence of the catering incentive of dividends on firms' decision to pay dividends. Most of these studies (Baker & Wurgler, 2004a, 2004b; Hoberg & Prabhala, 2008) investigated the impact of catering incentives on dividend payment decisions in developed capital markets like the United States and the United Kingdom (Ferris et al., 2006b). There seems to be scant studies examining the catering effect of dividends in emerging capital markets (Tangjitprom, 2013). Further, the empirical results drawn from previous studies have been mixed, with no definitive conclusion to explain whether the investors' desire for dividends influenced the dividend payment decisions.

Although generally limited, the investigation of firms' dividend payment decisions in an emerging capital market like India have been done before (see Mahapatra & Sahu, 1993; Bhat & Pandey, 1994; Baker & Kapoor, 2015; Labhane & Mahakud, 2016). However, these studies have not explored the impact of catering incentives on dividend payment decisions specifically. Although Labhane (2017) had examined the influence of catering incentives on the propensity to pay dividends in an Indian context, he did not consider the impact of the catering incentives on the decision to change dividend payout levels. Further to this, studies conducted during the period of 1960–2010 within India had mainly focused on theories related to tax-clientele, agency cost, free cash-flow, the asymmetric information and the signalling theory of dividends. The catering theory of dividend, which is based on investor sentiment, is a new research interest, hence the empirical evidence for supporting this theory is still limited.

This study specifically examines whether the catering incentives of dividends can influence the propensity to pay dividends, and the

dividend payout levels of listed firms in India during the period of 1994-95 to 2014-15, hereby considered as India's period of liberalisation. This study contributes to the existing literature by providing more empirical evidence to support the theory of catering incentives of dividends.

The remainder of this paper is organised as follows: Section 2 reviews the empirical literature on the effect of dividend catering on the dividend payment decision, Section 3 describes the data and the period of study, Section 4 specifies the variables used in the study, Section 5 describes the model specification and methodology, Section 6 discusses the empirical results of the study, and the last section concludes the paper.

2. Literature Review

This section reviews the empirical literature which looked at the influence of catering incentives of dividends on firms' dividend payment decisions in developed as well as emerging capital markets.

By taking into account the non-financial and non-utilities of US firms during the period of 1962-2000, Baker and Wurgler (2004a) found that firms' decision to initiate or to omit dividends payment was determined first by the prevailing investors' preference for dividends and second by the firm managers who catered rationally to the investors' demand. These managers paid the dividends to the investors when the investors preferred dividend-paying firms, and vice-versa. Following this, Baker and Wurgler (2004b) also examined the impact of the catering incentives of dividends on the propensity to pay dividends. They observed that there was a strong connection between the propensity to pay dividends, and the corresponding variation in the stock market dividend premiums which proxied for the catering incentives of dividends, during 1963-2000. When investors placed a premium on the dividend payers, managers would cater to the investors' demand for dividends by paying the dividends. Hence, the propensity to pay dividends had arisen. However, the propensity to pay dividends decreased when the stock market dividend premiums were negative, and when investors placed a demand for "growth stocks", that is, non-dividend paying firms.

After controlling for risks, Hoberg and Prabhala (2008) found that the catering incentives of dividends were no longer significant for explaining the decline in the propensity to pay dividends among

US firms. Ferris et al. (2006b) then investigated the trend among a number of dividend payers in the United Kingdom (UK). It was found that firms paying dividends had declined from 75.9 per cent to 54.50 per cent between 1988 to 2002. It was also uncovered that the decline in the propensity to pay dividends during the sub-period of 1998-2002 happened once firms were able to control the firm size and profitability. Hoberg and Prabhala (2008) attributed the shift in the catering incentives of dividends to the recent changes happening in the dividend payout policies of the United Kingdom (UK). In another study, Denis and Osobov (2008) examined the empirical determinants of the propensity to pay dividends in six developed financial markets (the United States, Canada, the United Kingdom, Germany, France, and Japan) between 1989 to 2002. There was little evidence to show that either the propensity to pay dividends or the time-series changes in that propensity could explain the changes in the investors' preference for the dividend-paying stocks.

Using a large sample of firms representing twenty-three different countries, Ferris et al. (2009) analysed the effect of dividend catering on the propensity to pay dividends during 1996 to 2004. They found that dividend catering was more likely to happen in common law countries than in civil law countries, particularly those operating under French or German civil law. Examining the influence of catering incentives of dividends on firms' dividend payment decisions in Thailand, Tangjit-prom (2013) noted that the dividend premium acting as proxy for the catering incentives of dividends was mainly positive during 1992 to 2009. This phenomenon implied that investors in Thailand preferred dividends. The findings further suggested that the catering incentives affected the decision of firms in paying dividends. This acted as a control for the Asian financial crisis during 1997-1999. It appeared that the dividend premiums had reduced the likelihood of firms' decision to cut dividend payments from previous years. Overall, Tangjitprom's (2013) study was able to provide evidence in support of the catering theory of dividends.

Investigating the dividend policy of firms listed in Eurozone member countries, Neves (2017) noticed that the catering incentives of dividends had a positive impact on the dividend payout ratios once there was control for the firm-specific determinants of dividends such as size, earnings, tangible fixed assets, leverage and free cash flow. In their study, Baker, Kilincarslan and Arsal (2018) found that corporate

managers of the Bursa Istanbul (BIST) listed firms perceived that dividend payment decisions influenced firms' value. These managers further expressed a strong support for the bird-in-the-hand idea, which comprised the firms' life-cycle, and the catering theory of dividends. Budiarso, Subroto, Sutrisno and Pontoh (2019) also examined whether firms' life-cycle, and the catering theory of dividends would work in the case of the Indonesian Stock Exchange (ISE) listed firms during 2010-16. They discovered that the dividend premiums were insignificant in all the models. This implied that the catering incentives of dividends did not influence the dividend behaviour, or the policy of the higher or lower dividend-paying firms in Indonesia.

Many studies have investigated the factors which affected the Indian firm's dividend payment decisions. For example, Mahapatra and Sahu (1993) found that cash flows, current earnings and past dividends were the principal factors influencing the dividend policy. However, Bhat and Pandey (1994) used the Lintner (1956) model in their study, and they noted that the firms' current year's profits, expected future profits, past dividends and change in equity, affected the firms' dividend payment decisions. Baker and Kapoor (2015) also examined the factors affecting the dividend policy of India's National Stock Exchange (NSE) listed firms. They noted that the stability of earnings, the level of current and expected future earnings, and the patterns of past dividends, could be some of the most important determinants of dividends. Baker and Kapoor (2015) further used the firms' life cycle, signalling and the catering incentives to explain the paying of dividends by firms.

Analysing the determinants of the dividend policy of Indian listed companies, Labhane and Mahakud (2016) revealed that firms that were larger, more profitable, more mature and highly liquefied have higher dividend payout ratios. In contrast, firms with high investment opportunity, financial leverage, and business risks, have lower dividend payout ratios. This finding supported a number of theories including the pecking order theory, the transaction cost theory, the signalling theory, and the firm's lifecycle theory of the dividend policy. Among some of the studies which can show whether the catering incentives of dividends can influence the firms' dividend payment decisions in the context of India are Labhane (2017), who examined the determinants of dividend payout policy for the Bombay Stock Exchange (BSE) listed firms. He uncovered three distinct trends in the propensity to pay dividends during 1995 to 2013 and he also found that the catering incentives of

dividends had a significant positive influence on the propensity to pay dividends.

The review of available studies on the influence of the catering incentives of dividends on firms' dividend payment decisions uncovered at least three research gaps. First, most of the previous studies (see Baker & Wurgler, 2004a; Baker & Wurgler, 2004b; Hoberg & Prabhala, 2008) have largely focused on developed capital markets, such as the United States and to some extent the United Kingdom (see Ferris et al., 2006b). Few studies (see Labhane, 2017) have examined this issue in emerging capital markets like India. Second, Baker and Wurgler (2004a) gave a discrete model which takes into consideration only two dividend payment decisions, that is, the decision to initiate or to omit dividends. Their discrete model considered the effect of the catering incentives on the decision to pay or not to pay dividends. It did not consider the impact of the catering incentives on the dividend payout levels. Third, the results obtained from previous studies were not consistent as they were mixed, hence not conclusive. Therefore, it is important to investigate the catering effect of dividends in emerging capital markets like India.

3. Data and Period of Study

The data for this empirical study were derived from the PROWESS database, maintained by the Centre for Monitoring Indian Economy (CMIE). It is a leading business and economic database, and research company in India. The period of study used dated from the financial year 1994-95 to 2014-15. The Indian government considers its financial year from 1st April to 31st March midnight. Therefore, the financial year 1994-95 will be referred to as 1995, and accordingly, the financial year 2014-15 will be referred to as 2015. Presently, 1,730 firms are enlisted on the NSE which consists of 179 financial services firms, 28 utilities sector firms, and 35 public sector undertaking firms. This study excludes financial services, and utilities sector companies due to the differences in the accounting practices, and the regulation norms followed. The public sector undertaking companies were also excluded from the sample as their dividend policies are highly influenced by the government's financial considerations and social obligations. Of the remaining 1,488 non-financial services, non-utilities sector and non-public sector companies, the maximum companies required for this study, inclusive of all the explanatory variables without any missing values, amounted to 781 companies.

4. Variables

4.1 Propensity to Pay Dividends

To examine the unexplained decrease, and increase in the proportion of dividend-paying firms, this study estimates the propensity to pay dividends (PTP_t) which is defined as the difference between the actual and expected percentage of dividend-paying firms. The actual percentage is the number of dividends-paying firms divided by the total number of firms in the sample for that year. The expected percentage is the percentage of firms that would be expected to be dividend payers, based on prevailing sample characteristics. When the actual proportion of dividend-paying firms are higher than expected, the study considers that the propensity to pay dividends has increased, and vice-versa.

Following Fama and French (2001), the current study estimates the expected percentage of dividend payers by using a logit model which includes the size, profitability, growth opportunities and investment opportunities as the independent variables during the base period of 1995-2003. The base period was chosen in such a way that the study also acquired a similar time span over both the base, and out-of-sample periods. Additionally, the base period represents the post-liberalisation period, and the out-of-sample period represents the period of second-generation reform in India. The logit model used is specified as follows:

$$\Pr(\text{Payers}_i = 1) = \text{logit } \{\alpha_1 + \beta_1 \text{SIZE}_i + \beta_2 \text{PROF}_i + \beta_3 \text{GRW}_i + \beta_4 \text{INVT}_i + \varepsilon_i\} \tag{1}$$

where SIZE_i is firm's size measured as the natural log of market capitalisation, PROF_i is firm's profitability measured as earnings before interest and taxes, divided by total equity, GRW_i is firm's growth opportunities measured as annual growth in sales, INVT_i is firm's investment opportunities measured as market value of equity divided by the book value of equity, that is, market-to-book ratio, α is a constant, βs are the slope coefficients, and ε_i is the error term.

Fama and French (2001) advocated that the upward drift in the market-to-book ratio was not due to improved investment opportunities. It was the declining discount rates which played a role in the drift in market-to-book ratio during the study period. In this case, the regression that used size, profitability, growth opportunities and investment opportunities to explain the probability that firms pay dividends had overestimated the decline in the percentage of dividend-paying firms due to changing characteristics. Simultaneously, the regression also

understated the decline in the percentage of dividend-paying firms due to the propensity to pay dividends. Therefore, to examine the robustness of the various results of the regression analysis, this study excluded market-to-book ratio (MBR) as proxy for investment opportunities, based on equation (1). This follows Fama and French (2001), and Baker and Wurgler (2004b). After excluding the market-to-book ratio (MBR), equation (1) thus becomes equation 2, as below:

$$\Pr(\text{Payers}_i = 1) = \text{logit} \{\alpha_1 + \beta_1 \text{SIZE}_i + \beta_2 \text{PROF}_i + \beta_3 \text{GRW}_i + \varepsilon_i\} \qquad (2)$$

First, equations (1) and (2) were regressed for each year of the base-period 1995-2003 so as to generate individual results. Next, the average of the coefficients of each year extracted from the regressions, known as the Fama-MacBeth coefficient, were used to achieve the final logit model. This logit model was finally utilised to estimate the expected percentage of the dividend payers. Thus, this study used two models (1) and (2) to obtain the propensity to pay dividends. The results are shown in Table 1.

Panels A and B in Table 1 demonstrate the logistics estimation results of equations (1) and (2). In this study, the Wald test was used to examine the overall significance of the models. The Wald test follows the χ^2 distribution and the statistics were noted to be significant for each year in the base-period 1995-2003, in panels A and B of Table 1. This therefore, rejects the null hypothesis which states that in the regression equation, all the parameters are jointly equal to zero. The expected signs of all the coefficients were found to be consistent with Baker and Wurgler (2004b). The Fama-Macbeth coefficients were also computed from the average of those cross-sectional coefficients, as shown in the bottom lines of Table 1. These coefficients were used to predict the likelihood of each firm paying a dividend for the entire period of the study. The average of all the firms' predicted probability were computed for each year. This would generate the expected proportion of firms paying dividends in that particular year. Table 2 highlights more results.

Table 2 shows that the expected proportion of the dividend-paying firms was higher than the actual proportion of firms paying dividends during 1995-2002. Hereafter, the expected proportion of the dividend-paying firms decreased continuously, and during 2003-2008, the expected proportion was lower than the actual proportion. During 2009-2015, the expected proportion of firms paying dividends was higher than the actual proportion of firms paying dividends. The actual and the expected percentage of dividend-paying firms was utilised to obtain the propensity to pay dividends (PTP_t), which referred to the

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Table 1: Fama-Macbeth Coefficients Used for Calculation of Propensity to
Pay Dividends (Results of Logistic Regressions)

Panel A. Including MBR (market-to-book ratio)

Year	Constant	SIZE	PROF	GRW	INVT	Wald Test
1995	-1.53	0.67	3.65	1.01	-0.19	104.83***
1996	-1.61	0.83	4.54	1.62	-0.34	122.99***
1997	-1.63	0.86	5.72	0.77	-0.34	133.37***
1998	-1.93	0.81	6.57	0.54	-0.30	146.13***
1999	-2.46	0.78	4.25	0.63	-0.16	150.82***
2000	-2.56	0.91	4.12	1.16	-0.28	162.24***
2001	-2.14	0.83	2.67	1.20	-0.36	151.42***
2002	-2.43	0.71	2.61	3.30	-0.17	153.10***
2003	-2.72	0.70	2.44	1.45	-0.11	142.27***
Average	-2.11	0.79	4.06	1.30	-0.25	

Panel B. Excluding MBR (market-to-book ratio)

Year	Constant	SIZE	PROF	GRW	Wald Test
1995	-1.44	0.57	2.99	0.84	94.14***
1996	-1.40	0.63	3.98	1.56	111.48***
1997	-1.34	0.68	4.91	0.52	119.66***
1998	-1.61	0.63	5.67	0.41	134.69***
1999	-2.24	0.67	4.07	0.40	143.48***
2000	-2.26	0.75	3.80	0.73	151.11***
2001	-1.88	0.65	2.46	0.98	136.9***
2002	-2.28	0.62	2.51	3.18	147.74***
2003	-2.56	0.61	2.42	1.27	138.88***
Average	-1.89	0.65	3.65	1.10	

Notes: SIZE is firm's size measured as the natural log of market capitalisation; PROF is a firm's profitability measured as earnings before interest and taxes divided by total equity; GRW is firm's growth opportunities measured as annual growth in sales; INVT is a firm's investment opportunities measured as market value of equity divided by book value of equity, i.e. market-to-book ratio. ***, **, * indicates significance at 1 per cent, 5 per cent and 10 per cent levels respectively. The logit regression equations are regressed based on models (1) and (2) for every year in the base-period 1995-2003 to obtain individual results in each year. The Fama-Macbeth coefficients are obtained in the second step by averaging the value of coefficients in each year in order to get the final logit model. Then the final logit model is used to estimate the expected proportion of firms paying dividends in each year during 1995-2015.

Table 2: Actual and Expected Percentage of Payers and the Propensity to Pay Dividends (MBR Included and Excluded)

Year	MBR Included			MBR Excluded		
	Actual percent	Expected percent	PTP	Actual percent	Expected percent	PTP
1995	0.80	0.85	-0.06	0.80	0.82	-0.03
1996	0.80	0.88	-0.08	0.80	0.88	-0.08
1997	0.77	0.89	-0.12	0.77	0.93	-0.16
1998	0.71	0.87	-0.16	0.71	0.94	-0.24
1999	0.65	0.83	-0.18	0.65	0.92	-0.27
2000	0.66	0.80	-0.14	0.66	0.96	-0.30
2001	0.63	0.75	-0.12	0.63	0.80	-0.16
2002	0.60	0.70	-0.10	0.60	0.87	-0.27
2003	0.62	0.52	0.10	0.62	0.49	0.13
2004	0.67	0.50	0.17	0.67	0.43	0.23
2005	0.72	0.45	0.27	0.72	0.39	0.33
2006	0.76	0.50	0.27	0.76	0.42	0.35
2007	0.77	0.61	0.16	0.77	0.54	0.22
2008	0.77	0.67	0.10	0.77	0.65	0.12
2009	0.71	0.89	-0.18	0.71	0.91	-0.20
2010	0.76	0.95	-0.19	0.76	0.95	-0.19
2011	0.74	0.89	-0.15	0.74	0.97	-0.23
2012	0.67	0.85	-0.18	0.67	0.89	-0.23
2013	0.66	0.82	-0.16	0.66	0.80	-0.14
2014	0.69	0.81	-0.12	0.69	0.78	-0.09
2015	0.72	0.79	-0.07	0.72	0.77	-0.05

Notes: Actual percent is the number of dividend-paying firms divided by the total number of firms in the sample that year, Expected percent is the percentage of firms that would be expected to be dividend payers based on prevailing sample characteristics, PTP is the propensity to pay dividends which are defined as the difference between the actual and expected percentage of dividend-paying firms.

difference between the actual and the expected percentage of dividend-paying firms. This study considers that the propensity to pay dividends (PTP_t) has increased in the year t when the expected proportion of the dividend-paying firms is lower than the actual percentage of the dividend-paying firms. There were actually three distinct trends in the propensity to pay dividends (PTP_t) between 1995 and 2015. First, the propensity to pay dividends had decreased from 1995 through 2002.

Then, it increased from 2003 through 2008 thereafter and finally, it again decreased from 2009 through 2015.

4.2 *Proxies Capturing the Dividend Premium*

Following Baker and Wurgler (2004a), the current study used dividend premiums to measure the catering incentives of dividends, which captured the relative market valuation of the dividend-paying firms versus the non-dividend paying firms. Dividend premiums were computed in the following way: For every year *t*, the weighted average market-to-book ratio (the market-to-book ratio is equal to market value of equity divided by book value of equity) for the dividend-paying firms, and the non-dividend paying firms were calculated. The difference between the natural logarithms of these averages was defined as dividend premium (DP^{P-NPt}). This study considered the equal and the weighted averages of the market to book ratio separately for the dividend-paying firms and the non-dividend paying firms. Thus, the dividend premiums (DP^{P-NPt}) could be defined as the difference between the log of equally, or value weighted, average market-to-book ratio of the dividend-paying firms, and the non-dividend paying firms. This is represented as follows:

$$DP_t^{P-NP} = \ln\left(\sum_i w_{ti}^p \frac{M_{ti}^p}{B_{ti}^p}\right) - \ln\left(\sum_i w_{ti}^{np} \frac{M_{ti}^{np}}{B_{ti}^{np}}\right) \tag{3}$$

where:

DP_t^{P-NP} = Dividend premium in a given year *t*,

w_{ti}^p = Weight of firm *i* in the subset of dividend paying firms in a given year *t*,

M_{ti}^p = Market value of equity of firm *i* in the subset of dividend paying firms in year *t*,

B_{ti}^p = Book value of equity of firm *i* in the subset of dividend paying firms in year *t*,

w_{ti}^{np} = Weight of firm *i* in the subset of non-dividend paying firms in a given year *t*,

M_{ti}^{np} = Market value of equity of firm *i* in the subset of non-dividend paying firms in year *t*,

B_{ti}^{np} = Book value of equity of firm *i* in the subset of non-dividend paying firms in year *t*,

Figure 1 and Figure 2 are provided to illustrate the outcomes further. Figure 1 plots the change in the propensity to pay dividends (*PTP_t*) with the market-to-book ratio (*MBR*) included, and the value-weighted dividend premiums during 1995-2015. Figure 2 plots the change in the propensity to pay dividends (*PTP_t*) with the market-to-book ratio (*MBR*) being excluded, and the value-weighted dividend premium during 1995-2015. In Figures 1 and 2, the dividend premiums predicted the decreasing propensity to pay dividends during 1995-2002. The dividend premiums appeared positive when predicting the rising propensity to pay dividends from 2003 through 2008, but thereafter, the dividend premiums turned negative when predicting the declining propensity to pay dividends during 2009-2015.
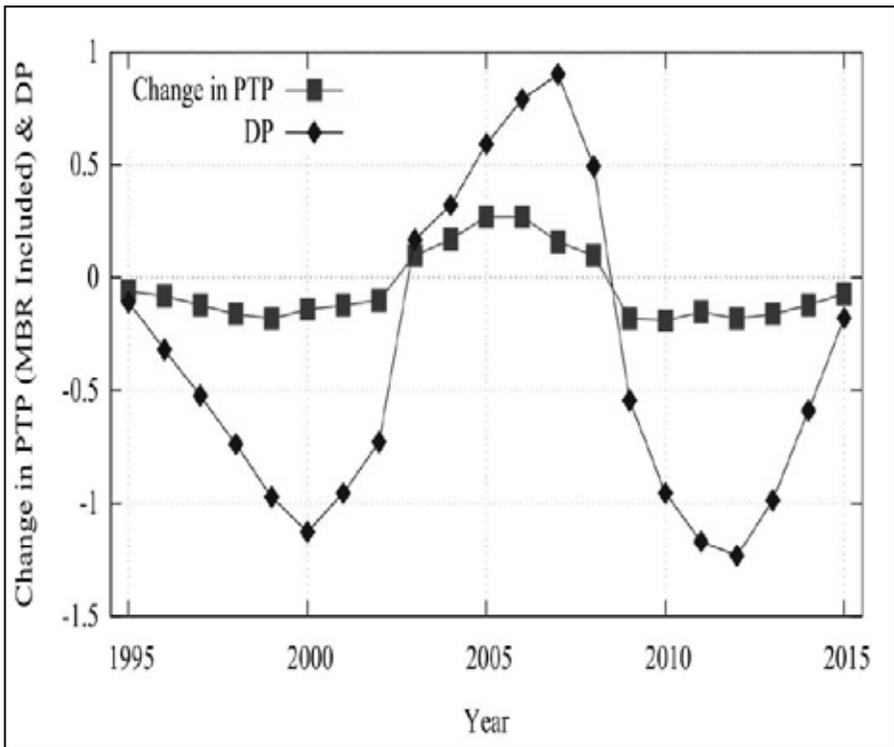
Figure 1: Change in Propensity to Pay Dividends (MBR Included) and Dividend Premium (Value Weighted)
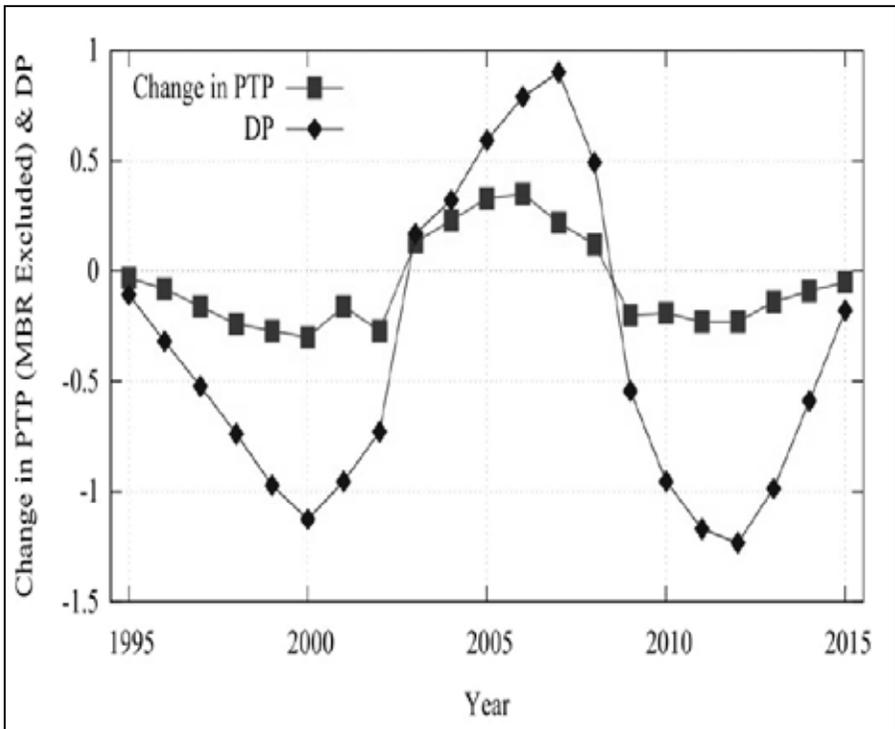
Figure 2: Change in Propensity to Pay Dividends (MBR Excluded) and Dividend Premium (Value Weighted)

5. Model Specification and Methodology

5.1 *Dividend Premiums and Propensity to Pay Dividends*

To empirically test the link between the catering incentives of dividends, and the propensity to pay dividends, the current study regressed the changes in propensity to pay (ΔPTP_t) variable against the lagged dividend premiums (DP^{P-NP}_{t-1}) variable. The regression model takes the following equation:

$$\Delta PTP_t = \alpha + \beta \, DP^{P-NP}_{t-1} + \varepsilon_t \tag{4}$$

where ΔPTP_t indicates the changes in the propensity to pay dividends, DP^{P-NP}_{t-1} is the lagged dividend premiums representing the catering incentives of dividends, α is a constant, β is a slope coefficient, and ε_t is the error term in year t.

Acharya, Gujral, Kulkarni and Shin (2011) mentioned that the global financial crisis had a significant positive impact on the dividend payment decisions of firms which supported the signalling hypothesis. Therefore, to examine the potential influence of the financial crisis – the Asian financial crisis (1997-1999), and the Global financial crisis (2007-2011), on the firms' decision to pay dividends, the study inculcated the financial crisis dummy variable ($F_{crisis,t}$) in the regression model (4) such that the new model is specified as using the following equation.

$$\Delta PTP_t = \alpha + \beta_1\, DP^{P-NP}{}_{t-1} + \beta_2\, F_{crisis,t} + \varepsilon_t \tag{5}$$

where ΔPTP_t indicates the changes in the propensity to pay dividends, $DP^{P-NP}{}_{t-1}$, $DP^{P-NP}{}_{t-1}$ the lagged dividend premiums representing the catering incentives of dividends, $F_{crisis,t}$ is the financial crisis dummy variable which takes the value 1 in a given year when there is a financial crisis in that year and zero for otherwise; α is a constant, β is a slope coefficient, and ε_t is the error term in year t.

To examine the influence of the dividend premiums on the propensity to pay dividends with market-to-book ratio included and excluded, this study estimated equations (4) and (5) by utilising the ordinary least square (OLS) regression analysis. The values of the ordinary least square (OLS) coefficients are reported in Tables 5 and 6.

5.2 *Dividend Premiums and Change in Dividend Payment Decisions*

Baker and Wurgler (2004a) provided a discrete model which considered only two dividend payment decisions, i.e., the decision to initiate or to omit dividends. When the investors' demand for the dividend-paying stocks was high, i.e., the dividend-paying stocks were trading at the dividend premiums which were relative to the non-dividend paying stocks, the managers would rationally cater to the investors' demand for dividends while the non-dividend paying firms would likewise, initiate the dividends payment. Conversely, the dividend-paying firms would omit dividend payments when the stocks of the dividend-paying firms were trading at the dividend discount that is relative to the non-dividend paying stocks. Thus, Baker and Wurgler's (2004a) discrete model considers whether to pay or not to pay the dividends, but it does not consider the dividend payout levels.

In order to examine the influence of the dividend premiums on firms' decision to change dividend payments, the current study estimated the multinomial logit model. Apart from the dividend

premiums variable, this study also utilised other control variables which comprised factors that may affect the firms' dividend payment decisions. These control variables included the investment opportunities (INVT), financial leverage (LEV), business risks (BR), life cycle (LC), firm's size (SIZE), and profitability (PROF) as the determinants for the firms' dividend payment decisions. Following the different theories of dividend policy, such as signalling, pecking order, transaction cost, and firm life cycle, this study predicted that the firm's investment opportunities, financial leverage, and business risks would be negatively associated with the dividend payment decisions (Myers, 1984; Myers & Majluf, 1984; Bhattacharya, 1979; Aharony & Swary, 1980; Asquith & Mullins, 1983). Further to this, the current study also predicted that the firm's life cycle stage, size and profitability would be positively associated with the dividend payment decisions (Grullon, Michaely, & Swaminathan, 2002; DeAngelo et al., 2006; Bulan & Subramanian, 2009; Denis & Osobov, 2008; Higgins, 1972).The multinomial logit model was thus estimated based on the following equation:

$$Y_{i,t} = \text{logit } (\alpha + \beta_1 VW\ DP^{P\text{-}NP}_{t\text{-}1} + \beta_2 INVT_{i,t} + \beta_3 LEV_{i,t} +$$
$$\beta_6 BR_{i,t} + \beta_7 LC_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 PROF_{i,t} + \varepsilon_{i,t}) \qquad (6)$$

where, *VW DP$^{P\text{-}NP}_{t\text{-}1}$* is value-weighted dividend premium; *INVT$_{i,t}$* is investment opportunity measured as market-to-book ratio for firm *i* in period *t*; *LEV$_{i,t}$* is leverage ratio measured as debt-to-capital ratio for firm *i* in period *t*; *BR$_{i,t}$* is standard deviation of the first difference of operating income divided by the total assets for firm *i* in period *t*; *LC$_{i,t}$* is the life cycle variable measured as ratio between retained earnings to total equity for firm *i* in period *t*; *SIZE$_{i,t}$* is the size variable measured as the natural log of market capitalisation for firm *i* in period *t*; *PROF$_{i,t}$* is the profitability variable measured as return on assets, i.e., earnings before interest, and taxes divided by total assets for firm *i* in period *t*; α is a constant; *βs* are the slope coefficients; and *ε$_{i,t}$* is the error term for firm *i* in period *t*.

This study measured the dividends payout levels' decisions, that is, how much dividends to pay, by the changes in the dividends payment. The change in the dividends payment was calculated by subtracting the dividends paid in the previous year from the dividends paid in a current year. These changes in dividends payment were classified into three categories – dividend increase, dividend decrease, and no change in dividends payments. When the firms paid more dividends in the current year than from the previous year, the study referred to this decision as

the 'dividend increase', and where the firms paid less dividends in the current year than what was paid in the previous year, the study referred to this decision as the 'dividend decrease'. When the firms paid the same amount of dividends in the previous as well as current year, the study referred to this decision as 'no change'. $Y_{i,t}$ in equation (6) takes the value of 1 when there is a dividend increase, a value of 2 when there is a dividend decrease, and a value of 3 when there was no change in dividends payments.

This study also divided the 'dividend decrease' decision into two parts – the 'dividend cut' decision, and the 'dividend omit' decision. When the firms reduced the amount of dividends in the current year as compared to previous year, but still paid the dividends, it is referred to as the 'dividend cut' decision. In contrast, when the firms paying a dividend in the previous year do not pay any dividend in the current year, this is referred to as the 'dividend omit' decision. $Y_{i,t}$ in equation (6) takes the value of 1 when there is a dividend increase, the value of 2 when there is a dividend cut, and a value of 3 when there is a dividend omit, and finally, a value of 4 when there is no change in dividends payment.

To investigate the relationship between the dividend premiums which measured the investors' demand for dividends, and the decision to change the dividends payment, this study estimated equation (6) by utilising the multinomial logit model which examined the impact of the dividend premiums on the decision to change dividend payments. The results are reported in Table 7.

This study also examined the relationship between the dividend premiums, and the absolute change in the dividend payments. The impact of the dividend premiums on the absolute dividend change was examined using the same set of control variables. The absolute change in the dividend payments decision was divided into two types – 'dividend increase' and 'dividend decrease'. The model takes the following equation:

$$\Delta DIV_{i,t} = \alpha + \beta_1 VW\ DP^{P\text{-}NP}_{t-1} + \beta_2 INVT_{i,t} + \beta_3 LEV_{i,t} + \beta_6 BR_{i,t} +$$
$$\beta_7 LC_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 PROF_{i,t} + \varepsilon_{i,t} \tag{7}$$

where, $\Delta DIV_{i,t}$ is the absolute change in the dividend payments, and it takes the actual value of change in the dividend payout ratio of firms from the last year to the current year: $VW\ DP^{P\text{-}NP}_{t-1}$, $INVT_{i,t}$, $BR_{i,t}$, $LC_{i,t}$, $SIZE_{i,t}$ and $PROF_{i,t}$, as explained in equation (6).

This study also examined the relationship between the dividend premiums, and the absolute change in dividend level with the same set of control variables by estimating equation (7). For this, the ordinary least square (OLS) regression analysis was used. The coefficients of the ordinary least square (OLS) are reported in Table 8.

6. Results and Discussion

6.1 Summary Statistics and Correlation Matrix

The summary statistics, the correlation matrix, and the variance inflating factor results of all the independent variables used in the regression analysis are presented in Tables 3 and 4. The skewness and kurtosis values of all the variables are observed to be in the acceptable range, that is, skewness is between ±3, and kurtosis is between ±10. This implies that the data are normalised (Kline, 2005). Although the correlation coefficients between some of the independent variables are significant, the values of the correlation coefficients, and the VIF indicate an absence of the multicollinearity problems.

Table 3: Descriptive Statistics

Variable	Min	Max	Mean	Median	Std. Dev.	Skewness	Kurtosis
INVT	-2.90	18.88	2.12	1.18	2.73	2.58	8.11
LEV	0.00	6.79	1.09	0.87	1.07	1.80	4.37
BR	0.01	0.18	0.04	0.03	0.03	2.38	7.26
LC	-0.30	0.25	0.03	0.03	0.06	-0.96	4.90
SIZE	-1.90	12.95	4.78	4.62	2.12	0.37	0.13
PROF	-0.57	1.27	0.15	0.14	0.19	1.21	7.09

Notes: This table presents summary statistics for all the independent variables used in the regression analysis during 1995-2015. INVT is a firm's investment opportunity measured as market value of equity divided by book value of equity, LEV is a firm's financial leverage defined as total debt divided by total capital employed, BR is a firm's business risk defined as the standard deviation of the first difference of operating income divided by total assets, LC is a life cycle variable for a firm defined as the ratio of retained earnings to total equity, SIZE is firm's size measured as the natural log of market capitalisation, PROF is a firm's return on assets measured as earnings before interest and taxes divided by total assets.

Table 4: Correlation Matrix and Variance Inflation Factor (VIF)

Variables	INVT	LEV	BR	LC	SIZE	PROF
INVT	1.000					
LEV	-0.04***	1.00				
BR	-0.02***	-0.10***	1.00			
LC	0.23***	-0.25***	-0.13***	1.00		
SIZE	0.51***	-0.14***	-0.17***	0.30***	1.00	
PROF	0.23***	-0.16***	0.02	0.38***	0.24***	1.00
VIF	1.41	1.14	1.08	1.38	1.51	1.22

Notes: This table reports the correlation matrix and variance inflation factor for all the independent variables used in the regression analysis during 1995-2015. For variable explanation see notes in Table 3. *** indicates significance at 1 per cent level, ** indicates significance at 5 per cent level and * indicates significance at 10 per cent level.

6.2 Catering Incentives and the Propensity to Pay Dividends

In this study, the presence of a link between the catering incentives of dividends and the propensity to pay dividends was empirically tested by regressing the changes in the propensity to pay (ΔPTP_t) variable against the lagged dividend premium (DP_{t-1}^{P-NP}) variable.

Table 5 reports the results of the regression analysis which was estimated based on equation (4) for period 1995-2015. In Table 5, the adjusted-R^2 values for models (1) and (2) are 10.30 per cent, and 6.80 per cent, respectively while the F-statistics for both models (1) and (2) are noted to be statistically significant, at the 10 per cent level. The coefficient on the lagged dividend premium, (DP_{t-1}^{P-NP}) is noted to be positive, and statistically significant for both models (1) and (2). This indicates that there is a direct relationship between the lagged dividend premiums with the change in propensity to pay dividends. Thus, when the dividend premiums are positive, that is, investors place premiums on the dividend payers, firm managers cater to the investors' demand for dividends by paying dividends. In contrast, firm managers do not pay the investors any dividends when the dividend premiums are negative. This outcome is consistent with the findings of Baker and Wurgler (2004a, 2004b), thereby supporting the catering incentives of the dividend payments.

Table 5: Result of the Regression Analysis

Change in Propensity to Pay Dividends as the Dependent Variable		
Variable	Model 1 (MBR included)	Model 2 (MBR excluded)
Constant	0.02 (0.81)	0.03 (0.78)
DP_{t-1}^{P-NP}	0.05 (1.86)*	0.07 (2.03)**
No. of Observations	21	21
Adjusted-R^2	0.103	0.068
F-statistics	F (1, 18) = 3.46 (0.08)*	F (1, 18) = 4.13 (0.06)*
Durbin-Watson	1.45	1.78

Notes: The figures in parentheses are the t-statistics. DP_{t-1}^{P-NP} is the lagged value of dividend premium, *** indicates significance at 1 per cent level, ** indicates significance at 5 per cent level and * indicates significance at 10 per cent level.

Table 6 presents the results of the regression analysis with the financial crisis dummy variable included. This was estimated based on equation (5) for period 1995-2015. In Table 6, the possible effect of the financial crisis was controlled by introducing a financial crisis dummy variable. This was used to indicate the Asian financial crisis during 1997-1999, and the global financial crisis during 2007-2011. The financial crisis dummy variable takes the value of 1 in a given year when there is a financial crisis in that year, and zero for otherwise. The results in Table 6 indicate that the financial crisis dummy variable $F_{crisis,t}$ showed a negative sign for both models (1) and (2). This hints the negative effect of the financial crisis on the propensity to pay dividends. However, the coefficient on the financial crisis variable is not statistically significant at the conventional level. Therefore, the financial crisis has very little, or no impact on the propensity to pay dividends. The coefficient on the lagged dividend premiums is observed to be positive, and statistically significant at the five percent level, for both models (1) and (2). These findings confirm the presence of the catering incentives of dividends payment in India. In Table 6, the adjusted-R^2 values for models (1) and (2) are 34.60 per cent and 26.80 per cent, respectively while the

Table 6: Result of the Regression Analysis with Financial Crisis
Dummy Variable Included

Change in Propensity to Pay Dividends as the Dependent Variable		
Variable	Model 1 (MBR included)	Model 2 (MBR excluded)
Constant	0.03 (1.11)	0.04 (0.90)
DP_{t-1}^{P-NP}	0.12 (2.94)***	0.16 (2.32)**
$F_{crisis,t}$	–0.02 (–0.89)	–0.02 (–0.48)
No. of Observations	21	21
Adjusted-R^2	0.346	0.268
F-statistics	F (2, 17) = 6.17 (0.01)**	F (2, 17) = 4.11 (0.04)**
Durbin-Watson	1.81	2.35

Notes: The figures in parentheses are the t-statistics. DP_{t-1}^{P-NP} is the lagged value of dividend premium $F_{crisis,t}$ is the financial crisis dummy variable. *** indicates significance at 1 per cent level, ** indicates significance at 5 per cent level and * indicates significance at 10 per cent level.

F-statistics for both models (1) and (2) are noted to be statistically significant at the five per cent level of significance.

Baker and Wurgler (2004a) had offered a model which explained how the time-varying investors' demand for dividends can influence firms' decision to initiate and omit the dividends. But more often in practice, firm managers are confronted with the decision to change the dividend levels that is, to increase or decrease the dividends rather than the decision to initiate or omit dividends. Based on this, it is important to interrogate the impact of the catering incentives on the decision to change the dividend levels. Table 7 presents the result of the multinomial logit model, based on equation (6), which highlight the influence of the catering incentives on the decision to change dividend levels. The dividend premiums capturing the investors' demand for dividends are deduced to be positively related to the decision so as to increase the dividend levels. However, they are expected to be negatively associated with the decision so as to decrease the dividend

levels. Firm managers tend to cater to the investors' demand for dividends by increasing the dividend levels when investors show a higher demand for dividends. This shows that investors' higher demand for dividends would discourage the firm managers from cutting or omitting the dividends.

The results in Table 7 also indicate that the value-weighted dividend premiums are significantly and positively associated with the decision to increase the dividend levels. However, they are significantly and negatively related to the decision to decrease the dividend levels. This result can be interpreted as saying that the higher dividend premiums reflecting the investors' higher demand for dividends can induce the firm managers to increase the amount of dividends paid. At the same time, the investors' higher demand for dividends would discourage the firm managers from decreasing the amount of dividend levels. This result support the catering theory of dividends since the firm managers are more likely to increase the dividend levels when there is a higher demand for dividends by investors as indicated by the higher dividend premiums.

This study had classified the firms' decision to decrease the dividend levels as the decision to cut the dividend levels. This is divided into two sub-categories: dividend cut and dividend omit. Model 2 in Table 7 shows the multinomial logit regression analysis for the dividend levels change decisions, such as dividend increase, dividend cut and dividend omit. The results for Model 2 are noted to be similar to those obtained for Model 1. The value-weighted dividend premiums also carry a significant positive association with the dividend increasing decision. In contrast, it has a significant and negative relationship with the dividend cutting, and dividend omitting decisions. The result thereby suggests that the negative association of the dividend premium with the dividend decreasing decision, is more pronounced for the decision to omit dividends than the decision to cut the dividends. This result also supports the catering theory of dividends since the firm managers are less likely to cut or omit the dividends when the investors' demand for dividends are high when the dividend premiums were also high.

Table 8 presents the results for the estimation of a regression model based on equation (7). It reports the impact of the value-weighted dividend premium, and other proxy variables, on the absolute change in the dividend levels. The result obtained in Table 8 differ significantly from those obtained for the multinomial logit regression analysis shown in Table 7. The value-weighted dividend premiums show a significant

Table 7: Result of the Multinomial Logit Regression Analysis for Dividend Changes

	Model 1		Model 2		
Variables	Dividend increasing	Dividend decreasing	Dividend increasing	Dividend cutting	Dividend omitting
Constant	-1.26	-1.30	-1.31	-1.94	-1.85
	(-16.28)***	(-14.97)***	(-16.79)***	(-19.16)***	(-13.30)***
VW DP_{t-1}^{P-NP}	0.10	-0.27	0.10	-0.22	-0.39
	(3.38) ***	(-7.28)***	(3.46)***	(-5.18)***	(-5.71)***
INVT	-0.01	-0.08	-0.01	-0.11	-0.06
	(-0.80)	(-6.15)***	(-1.22)	(-7.14)***	(-2.41)**
LEV	-0.09	-0.01	-0.09	-0.09	0.12
	(-4.08) ***	(-0.35)	(-4.41)***	(-3.06)***	(3.76)***
BR	-15.89	-8.35	-16.13	-9.81	-8.27
	(-17.14) ***	(-8.24)***	(-17.29)***	(-8.13)***	(-4.87)***
LC	12.05	1.71	12.50	4.34	-2.85
	(23.95) ***	(3.49)***	(24.37)***	(7.18)***	(-3.94)***
SIZE	0.28	0.21	0.29	0.28	-0.01
	(22.99) ***	(14.36)***	(23.50)***	(17.29)***	(-0.15)
PROF	1.07	-1.32	1.18	-0.36	-3.08
	(8.27)***	(-8.35)***	(8.86)***	(-1.97)**	(-12.82)***
No. of Observation	16401		16401		
Pseudo R^2	0.129		0.135		
Log Likelihood	-13390.71		-14661.04		
LR Test	χ^2 (14) = 3973.42		χ^2 (21) = 4564.13		
	(0.00)		(0.00)		

Notes: VW DP_{t-1}^{P-NP} is value weighted dividend premium which is defined as the difference between the log-normally distributed value weighted average market-to-book ratio of dividend paying firms and non-dividend paying firms. INVT, LEV, BR, LC, SIZE and PROF are as explained in Table 3. The figures in parentheses are the z-statistics. *** indicates significance at 1 per cent level, ** indicates significance at 5 per cent level and * indicates significance at 10 per cent level.

Table 8: Result of the Regression Analysis for Absolute Change in
Dividend Levels

Variables	Dividend Increasing		Dividend Decreasing	
	Only DP	Full model	Only DP	Full model
Constant	1.66	-0.23	-1.04	-0.16
	(61.62)***	(-2.30)**	(-38.18)***	(-2.12)**
VW DP_{t-1}^{P-NP}	0.13	0.09	0.03	0.02
	(3.66)***	(2.73)***	(0.73)	(0.60)
INVT		-0.05		0.10
		(-4.82)***		(8.40)***
LEV		0.04		-0.08
		(1.21)		(-4.01)***
BR		0.01		-3.05
		(0.00)		(-3.47)***
LC		3.16		1.12
		(5.34)***		(2.03)**
SIZE		0.32		-0.21
		(23.34)***		(-15.18)***
PROF		0.04		0.02
		(0.26)		(0.15)
No. of Observations	6913	6913	1877	1877
Adjusted-R^2	0.081	0.144	0.078	0.121
F-statistics	F(1, 6911) = 13.40 (0.00)	F(7, 6905) = 101.43 (0.00)	F(1,1875) = 10.53 (0.00)	F(7, 1869) = 35.97 (0.00)

Notes: VW DP_{t-1}^{P-NP} is as explained in Table 7. INVT, LEV, BR, LC, SIZE and PROF are as explained in Table 3. The figures in parentheses are the t-statistics. *** indicates significance at 1 per cent level, ** indicates significance at 5 per cent level and * indicates significance at 10 per cent level.

and positive relationship with the decision to increase the dividends level. In contrast, the association between the dividends premium, and the decision to decrease the dividends level is insignificant.

This result indicates that when the dividend premiums are high, it would also suggest a higher investors' demand for dividends, and for firm managers to cater to the investors' demand for dividends. This

is accomplished by increasing the amount of dividend payments to the investors. Therefore, firm managers are more likely to increase the dividends level when there is a higher demand for dividends from the investors. On the other hand, the higher dividend premiums do not have any role, or the least role to play in the firms' decision to decrease the dividends level.

7. Conclusion

This paper examines whether the catering incentives of dividends can influence firms' dividends payment decisions. A total of 781 sample firms listed on the National Stock Exchange (NSE) in India during 1994-95 to 2014-15 were employed. The dividend premiums, as a proxy to measure the time-varying investors' desire for dividends, were captured in each year during the study period. The dividend premiums were mostly negative for most of the years of the study. This is consistent with the previous research studies in the USA which found three distinct trends in the propensity to pay dividends between 1995 and 2015. The propensity to pay dividends had also decreased from 1995 through to 2002, and it then increased from 2003 to until 2008. Thereafter, it decreased again from 2009 to 2015. These trends in the propensity to pay dividends are found to be related to the corresponding variations in the dividend premiums which reflect the investors' demand for dividends. The empirical results of this study also show that there is a link existing between the catering incentives, and the propensity to pay dividends. This is deduced as that the catering incentives have a significant positive impact on the changes in the propensity to pay dividends. Therefore, when dividend premiums are positive, that is, investors place a premium on dividend payers, managers cater to the investors demand for dividends by paying dividends. Likewise, when the dividend premiums are negative, no dividends are paid to the investors.

The empirical result showing the influence of the dividend premiums on the probability to change dividend levels implies that the dividend premiums are significantly and positively associated with the probability of an increase in the dividend level, but it is negatively related to the probability of a decrease in the dividend level. The negative association of the dividend premiums with the dividend decreasing decision is more pronounced for the decision to omit dividends than the decision to cut the dividends. These findings indicate that the higher dividend premiums show a higher investors' demand for

dividends. This can induce the firm managers to increase the amount of dividends paid. Contrary to that, the firm managers are less likely to cut or omit dividends when the investors' demand for dividends are high as reflected by the higher dividend premiums. In the case of the results for the impact of catering incentives of dividends on the absolute change in dividend levels, the dividend premium shows a significant and positive relationship with the absolute increase in the dividends level. However, the association between the dividend premiums, and the absolute decrease in dividend levels is insignificant.

Overall, the results generated support the notion that managers of Indian firms cater rationally to the investors demand for dividends, by paying dividends when investors place a premium on dividend-paying firms, and vice-versa. This study bears one implication for the management. The investors in the Indian capital market show a preference for dividend payments. In this regard, the firm managers could use these catering incentives as a factor for deciding the dividend payments to investors. Based on this, the firm managers should also consider other market-specific variables like the dividend premiums while formulating the appropriate dividend policy for the firm, apart from firm-specific variables.

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Effect of the Trusted Taxpayer Designation on Corporate Tax Avoidance Behaviour: Evidence from Korea

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ABSTRACT

Manuscript type: Research paper

Research aims: This study focuses on the efficacy of the trusted taxpayer system in Korea by examining whether firms designated as trusted taxpayers are more likely to pay taxes faithfully, and consistently when compared to firms that are not designated.

Design/Methodology/Approach: This study uses the ordinary least squares (OLS) method, and specifically, the trusted taxpayer designation as an indicator of tax compliance while the book-tax difference (BTD), and the discretionary BTD are used as a measure of tax avoidance.

Research findings: Results show that firms designated as trusted taxpayers are less likely to avoid taxes than firms not designated. Among firms that are designated as trusted taxpayers, it appears that firms with CEOs who come from founding families, firms that are non-SMEs (other than small and medium sized firms defined by the Small Business Act of Korea), and firms whose majority shareholder ownership is greater than the median, are less likely to avoid taxes.

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Theoretical contribution/Originality: To the best of our knowledge, this study is the first to use a tax avoidance measure to examine the effect of the trusted taxpayer designation on corporate tax avoidance by comparing firms that are designated and firms that are not designated as trusted taxpayers.

Practitioner/Policy implications: This study shows that firms designated as trusted taxpayers are less likely to avoid taxes than firms that are not designated. This implies that the current trusted taxpayer system implemented by the Korean tax authority is effective and should be promoted.

Research limitations: The Korean tax authority announces the designation of trusted taxpayers separately for corporate businesses and self-employed businesses. The results of this study are confined to the data of corporate businesses only.

Keywords: Book-Tax Difference, Discretionary BTD, Tax Authorities, Tax Avoidance, Trusted Taxpayers

JEL Classification: H26

1. Introduction

In their effort to encourage tax compliance among business firms, many countries have relied on the tax policy which emphasises on the punitive approach rather than a rewarding approach, as a measure. However, a recent stream of research (Alm, Jackson & Mckee, 1992; Torgler, 2003; Andreoni, Harbaugh, & Vesterlund, 2003; Pickhardt & Prinz, 2014) have suggested that tax authorities can induce better tax compliance by rewarding the taxpayers rather than by punishing them. Recently, Korea has introduced a new tax policy called the trusted taxpayer's system. It is a system that differentiates itself from other tax policies by focusing more on rewarding faithful tax payments rather than on punishing tax avoidances. Although a reward system inevitably requires extra financial outlay from the tax authority, the National Tax Service (NTS) of Korea has announced that it intends to expand and continue with the system.

To minimise the negative impact of tax avoidance and to promote an environment of fair taxation, the NTS conducts an annual tax investigation among firms. When a firm is caught evading taxes, it faces both the financial and reputational consequences, such as paying additional taxes on top of any unpaid amount and public exposure as a tax-evading firm. By contrast, when the investigation concludes that a

firm is a faithful taxpayer, it earns a designation as a trusted taxpayer, and receives several benefits such as tax points and an exemption from tax investigation for three years, including the year of designation. A firm that is designated as a trusted taxpayer can increase its value, not only through receiving tax benefits, but also by promoting its transparency in the capital market. Naturally, such benefits would induce the designated firms to pay taxes faithfully and consistently, just as the NTS desires.

Unfortunately, recent news noted in the Korean media have indicated that the reality may not conform to the desires of the NTS. On March 5, 2019, Lee (2019), in the daily NTN, a Korean news media, reported that 108 individual trusted taxpayers have been deprived of their status since 2015. There have also been allegations against executives of designated firms for being involved in tax avoidance during the investigation exemption period (Shin, 2019; Ahn, 2019). All these articles suggest a possibility that the designated firms may take advantage of the trusted taxpayer system for the purpose of avoiding taxes.

This study therefore, aims to examine whether firms designated as trusted taxpayers were more likely to pay taxes faithfully and continually when compared to other firms. Herein, we question the effectiveness of the current trusted taxpayer designation system in Korea. Additionally, this study also examines the difference in tax avoidance behaviour between firms designated as trusted taxpayers and other firms in terms of management characteristics and governance structure.

In the context of this study, one would expect to observe a negative relation between the designation and tax avoidance for the following reasons. First, the rewards received by the designated firms would serve as a strong incentive for them to be faithful taxpayers. Studies in psychology (Nagin, 1990; Falkinger & Walther, 1991; Smith & Stalans, 1991; Pickhardt & Prinz, 2014) have suggested that rewarding taxpayers is more effective than punishing them, for the purpose of tax compliance. Second, recent studies have suggested that firms involved in socially responsible activities are less likely to avoid taxes. While the scope of the socially responsible activity is not definite, it is deduced that tax avoidance is a socially irresponsible activity (Landolf, 2006; Williams, 2007; Avi-Yonah, 2008; Hasseldine & Morris, 2013). For example, when receiving the trusted taxpayer citation, the CEO of Medtronic Korea, stated that faithful tax payment helps the nation and represents Medtronic's mission of being socially responsible (Kim, 2016). This

meant that firm executives understood the designation as the successful performance of a socially responsible activity. Accordingly, executives of firms designated as trusted taxpayers would also be less willing to avoid taxes after being bestowed with the designation when compared to those firms not designated as trusted taxpayers.

In contrast, tax avoidance as a business strategy to maximise firm profits has become commonplace, and even an integral part of businesses today (Desai & Dharmapala, 2006). Studies (Graham, Hanlon, Shevlin, & Shroff, 2014) have indicated that tax avoidance strategies are often considered by firms as a way to increase financial earnings, thereby resulting in improved firm reputation and share prices. Some executives even view tax avoidance as their fiduciary duty towards their shareholders, hence they would actively engage in tax strategies so as to reduce the tax burden (Fisher, 2014). Thus, if firms' desire to maximise shareholder interest is greater than the incentives provided by the trusted taxpayer designation, the designation could have negligible relations on tax avoidance.

Using the trusted taxpayer designation as an indicator variable and the measure of tax avoidance as the dependent variable, we find that firms designated as trusted taxpayers are less likely to avoid taxes when compared to other firms. This result is in accordance with the expectations of the Korean tax authority; the current trusted taxpayer system is successful in inducing taxpayers to pay taxes faithfully and continually. The results of our empirical analysis highlighted two issues. First, firms designated as trusted taxpayers are less likely to avoid taxes when compared to other firms. Second, tax avoidance among firms designated as trusted taxpayers is significantly lower for firms that are managed by CEOs from founding families, non-SME firms and firms with majority shareholder ownership that is greater than the median.

This paper contributes to the current literature by providing two practical implications. First, the outcome derived from this study adds to the existing literature which focusses on the legal system and its effect on taxpayer behaviours. This study also extends on previous findings by providing evidence derived from a system of positive and negative incentives and the reward and penalty system in the context of tax laws. The results also provided evidence showing the benefits of a positive incentive system that encourages taxpayers to engage in faithful and ethical behaviours. This evidence can be applied by the regulatory authorities and policy makers to design and monitor their respective tax systems around the world. Further, the outcome derived from this study

is also beneficial to investors and creditors who rely on firms' financial reports for their decision-making. The empirical evidence drawn from this study highlighted that financial reporting by designated taxpayers is more reliable than those reported by non-designated firms, thereby avoiding information asymmetry.

The remainder of this paper is organised as follows: Section 2 looks at Korea's current trusted taxpayer system and the related studies done in the past so as to develop the hypotheses. Section 3 describes the research model and the sample selection process. Section 4 presents the empirical results and Section 5 concludes.

2. Institutional Background, Literature Review, and Hypothesis Development

2.1 Regulations Related to Trusted Taxpayer Designation

In an effort to induce firms to pay taxes faithfully, many countries such as the United States, focus on imposing a strict penalty on tax avoiding firms by conducting rigorous tax investigations from time to time. In the context of Korea, the authority not only focusses on penalising the tax avoiding firms, but also on providing various tax benefits to firms that voluntarily pay taxes faithfully. By examining the effect of the trusted taxpayer system on the faithful taxpayers ability to make tax payments in Korea, this study sheds light on the need for other countries to consider adopting a similar system so as to induce tax compliances.

Currently, the National Tax Service of Korea utilises a system that designates certain firms as trusted taxpayers. The designation is bestowed by the judging committee of the National Tax Service of Korea based on the results of the tax investigations, and the evaluation of the firms that are recommended by local tax authorities or the firms themselves. A public hearing is conducted before the Ministry of Strategy and Finance after which a final designation is then assigned. Once designated, the trusted taxpayers (firms) would receive various benefits. The criteria for firms to be considered as a candidate for the trusted taxpayer designation are: firms must be ongoing entrepreneurs for at least three years, and these firms must pay corporate taxes in an amount that is greater than 50 million Korean won (KRW), in the case of corporate businesses. For individual businesses, the corporate taxes must be greater than 5 million KRW.

Small business firms can also participate. Firms with less than five full-time employees fall into the category of small businesses (10 if the firm is in the following industries: manufacturing, mining, construction, or transportation). In addition, the total assets for corporate businesses must not exceed three billion KRW while the yearly income for individual businesses must not exceed one billion KRW. Once designated, these firms receive several benefits from the government. First, they are exempted from tax investigations for three years. Second, they receive additional points upon being examined and evaluated by the Korean governmental organisations such as the Ministry of Small and Medium-sized Enterprises and Startups, the Public Procurement Service and the Trust Guarantee Funds. Third, they receive special treatments regarding tax issues. Specifically, being a trusted taxpayer offers these firms some extenuating benefits when they are in violation of some tax regulations. The Korean tax authority provides such benefits to trusted taxpayers in the hope of promoting faithful tax payments. This study investigates the efficacy of the trusted taxpayer system in Korea. Specifically, it aims to provide evidence highlighting the influence of the trusted taxpayer designation on the faithful tax payments of firms in Korea. The outcome should interest the Korean regulators.

2.2 Literature Review and Hypothesis Development

While many studies have examined the effects of tax investigations on firms, not much has been written about the relationship between the trusted taxpayer designation and faithful tax payment behaviour. A stream of tax compliance research (Kaplan, Newberry, & Reckers, 1997) has proposed that tax authorities use legal means to prevent tax avoidance. In particular, tax authorities have also identified some tax-avoiding firms through tax investigations and these are later imposed with economic sanctions such as additional taxes. This approach is based on the deterrence theory of educational psychology (Kinsey, 1992). According to the theory, the increased possibility of getting caught for involvement in illegal activities and the resulting sanctions can effectively curb illegal activities.

On the other hand, a stream of research in psychology has also suggested that reward works better than punishment in curtailing un-desirable actions. Alm et al. (1992), for example, found that an increase in the amount of public services on individuals, such as increased tax payments, also increased their compliance rates. In support of this

observation, Torgler (2003) also shared evidence showing that positive rewards in the Costa Rica tax system also influenced tax compliance. This was based on the assumption that traditional factors, such as additional taxes and tax investigation probabilities, were held constantly. Likewise, Feld and Frey (2007) argued that providing taxpayers with non-monetary rewards, such as better and less costly access to public service rather than monetary rewards, was also likely to raise tax morale. Finally, Nagin (1990), Falkinger and Walther (1991), Smith and Stalans (1991), and Pickhardt and Prinz (2014) noted that the rewarding incentive given to taxpayers was more effective than the punishing system imposed on taxpayers for the need to enhance tax compliance.

A stream of research in social responsibility has also provided evidence to show that firms given the designation of trusted taxpayers were less likely to avoid taxes. It was noted by Huang, Sun and Yu (2017) that socially responsible firms were less likely to expatriate and to avoid paying taxes. This is because they were also responsible for their stakeholders, such as the government, customers and suppliers, in accordance with the stakeholder theory. Lanis and Richardson (2015) and Hasan, Hoi, Wu, and Zhang (2017) also reiterated that social responsibility was associated with lower tax avoidance. Therefore, if firms designated as trusted taxpayers considered their designation as a fulfillment of their social responsibility, as suggested by the executive of Medtronic above, then such firms were also less likely to avoid taxes when compared to firms not designated as trusted taxpayers.

This trusted taxpayer designation system is relatively new in Korea and not many studies have explored this issue. Among such studies is Oh (2009) who found that firms designated as faithful taxpayers were more likely to report lower sales in their operating income ratio, lower sales in their net income before tax ratio, and lower net profit margins as compared to their pre-designation. This result suggests that, following the designation, firm's reported net income and income before tax, have decreased while their revenues increased. This may reflect the earnings management in tax avoidance practices. On the other hand, Suh, Lee and Ryu (2017) examined the association between tax avoidance and trusted taxpayer designation. Their results show that firms are less likely to avoid taxes following their designation. Unfortunately, the aforementioned studies do not provide a coherent conclusion as to the effect of the trusted taxpayer designation on tax avoidance. In their study, Suh et al. (2017) examined firms that were designated as trusted taxpayers in terms of their difference in tax avoidance before and

after the designation. In this study, we compare a sample of firms that are designated as trusted taxpayers to a sample of firms that are not designated as trusted taxpayers. We assume that the management of these firms that are designated as trusted taxpayers is more likely to be ethical and faithful, thus, we conjecture that firms designated as trusted taxpayers are less likely to avoid taxes than non-designated firms. Based on the discussion above, our first hypothesis is formulated as:

H_1: There is a negative association between firms designated as trusted taxpayers and tax avoidance.

Until recently, there has been little research done on the relation between tax avoidance and firm's executives. Among the past studies conducted, Dyreng, Hanlon and Maydew (2010) reported that top executives play a more important role on their firms' tax planning or strategies than lower level executives. The study also implies that the level of tax avoidance depends on the incentives or characteristics of the CEOs. In another study, Chen, Chen, Cheng and Shevlin (2010) focussed on the unique governance system of family firms. They examined the firms' association with tax aggressiveness. It was observed family firms owned and managed by family members practised a stronger governance. This implies that there is smaller agency conflict between owners and executives. Family owners may face different incentives on their tax aggressiveness when compared to the executives of non-family firms. This was revealed by Chen et al. (2010) whose evidence showed that family firms were less tax-aggressive than non-family firms. The authors further argued that family owners were willing to forego the benefits gained from avoiding taxes in order to avoid potential non-tax costs (e.g., price discounts from non-family shareholders, penalties from the IRS and reputational damage). Based on the discussion above, the second hypothesis is formulated as:

H_2: The negative association between the trusted taxpayer desig-nation and tax avoidance will be more pronounced for firms managed by CEOs from founding families.

Na, Park and Song (2014) measured the degree of tax avoidance between SMEs (small and medium-sized enterprises) and non-SMEs (large firms). They found that the degree of tax avoidance was lower for SMEs than large firms. Unlike the latter, SMEs can take advantage of support programs provided by the government; they also received additional tax benefits, such as tax exemptions and credits. Na et al.

(2014), therefore argued that SMEs have lower incentives to avoid taxes than non-SME firms. However, when designated as trusted taxpayers, large firms not only received tax benefits, but also enjoyed an improved reputation of corporate transparency, potentially leading to a higher valuation in the stock market. Therefore, it is necessary to examine whether non-SME firms that are designated as trusted taxpayers are more or less likely to avoid taxes than their smaller counterparts. Following the two directional arguments discussed above, the third hypothesis is formulated as:

H$_3$: The association between the trusted taxpayer designation and tax avoidance will be significantly different between SME firms and non-SME firms.

Lee (2010) suggested that firms with majority shareholder ownership increase the value of the firms by preventing the CEOs from misappropriating the firms' assets, thereby avoiding moral hazards. It was further argued that majority shareholder ownership has a negative association with tax avoidance which then reduces the firms' risk of exposure to tax investigations. In this study, we similarly predict that managers of firms holding majority shareholder ownership would increased their firms' value by avoiding the private use of firm assets, thereby moral laxity. Based on this, the fourth hypothesis is formulated as:

H$_4$: The negative association between the trusted taxpayer designation and tax avoidance will be more pronounced for firms with higher majority shareholder ownership.

3. Empirical Models and Sample Selection

3.1 Measuring Tax Avoidance

Prior studies used different methods to measure tax avoidance. This is because the definition (and therefore the range) of tax avoidance is varied, depending on the research purpose (Hanlon & Heitzman, 2010). Three different tax-related behavioural categories were identified: tax savings, tax avoidance and tax evasion. Tax savings is a practice which ensures the optimal minimisation of tax liability within the framework of tax laws. Tax evasion involves efforts to reduce tax liability through illegal activities, potentially subjecting the individual or firm to penalties in accordance with the Punishment of Tax Offenses Act. On the other hand, tax avoidance is practiced as a result of loopholes existing within

the framework of the tax law, thereby making this practice legal. Depending on the purpose of the research, the term "tax avoidance" may encompass all three categories mentioned, or it may specifically refer to the practice of using loopholes within the tax law. This study engages the latter definition for tax avoidance.

One of the most common method used to measure tax avoidance is to use the book-tax differences (BTD). It is an approach which takes the difference between the pretax book income and the taxable income, and then it is divided with the beginning total assets. This approach is commonly used because it can estimate tax avoidance without having to acquire the firm's actual tax documents. Mills and Sansing (2000) implicated that greater book-tax differences were associated with increased occurrences of tax investigations. This is achieved by identifying a positive association between the two. However, the book-tax difference may also capture some elements of the firm's earnings management (Phillips, Pincus, & Rego, 2003; Hanlon & Slemrod, 2009). Desai and Dharmapala (2006, 2009) then attempted to resolve this issue by separating the components of the BTD; they were then subjected to the firm's earnings management by regressing each firm's BTD on the firm's total accruals, which captured the effect of its earnings management. The writers then took the residuals from the regression and used it as the discretionary book-tax differences (DD_BTD). The following equations (a) and (b) served as the equations used to compute the BTD and the DD_BTD. In these equations, we interpreted the increase in these measures as an increase in tax avoidance activities. Following prior studies (Mills, Erickson, & Maydew, 1998; Wilson, 2009), we used both the BTD, and the discretionary BTD as our measures of tax avoidance.

$$BTD_{i,t} = Y_{i,t}^s - Y^T\_hat_{i,t} \tag{1}$$

$$BTD_{i,t} = \beta_1 TA_{i,t} + \varepsilon_{i,t} \tag{2}$$

where

$BTD_{i,t}$ = Difference between book income and tax income

= (Book Income-Estimated Tax Income)/Beginning Total Asset

$Y_{i,t}^s$ = Book Income

$Y^T\_hat_{i,t}$ = Estimated Tax Income

$TA_{i,t}$ = Total Accruals/Beginning Total Asset

$\varepsilon_{i,t}$ = Measure of tax avoidance free of earnings management effect ($DD\_BTD_{i,t}$)

3.2 Sample Selection

In Korea, the NTS announces the list of firms which have been designated as trusted taxpayers on March 3, every year. Therefore, we defined the year in which the firm was designated as the event year. Among the firms which were listed on the Korea Composite Stock Price Index (KOSPI) and the Korean Securities Dealers Automated Quotations (KOSDAQ) during 2009-2015, there were firms that were designated as trusted taxpayers due to the tax authority's tax investigations or based on the firms' self-recommendation. For the purpose of this study, we hereby limit our samples to firms that meet the following conditions:

(1) Firms with data available for extraction;
(2) Firms with financial data available on the KIS-VALUE[1] and TS-2000[2] for the entire sample period of study; and
(3) Firms with no administrative issues in the stock market.

For our analysis, we employed a matched control sample of non-designated firms. Following the protocol provided in Etterdge, Sun, Lee and Anandarajan (2008), each designated firm was matched with three control firms based on firm size, year and industry classification. Our final sample thus consisted of 1,019 firm-years of designated firms and 3,057 firm-years for the control sample. Table 1 illustrates.

H_3 requires the definition on what constitutes non-SME firms. Article II of the Small Business Act of Korea provides specifications for small and medium-sized enterprises (SMEs), such as the required net sales amount, size of total assets and percentage of ownership of the company. In this study, we define non-SME firms according to this classification.[3]

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[1] KIS-VALUE is a database with data on financial statements and stock information of Korean firms.
[2] TS2000 is a database featuring information on listed firms in the Korean stock market.
[3] Following Section 2 of the Small Business Act in Korea, we define non-SME firms as firms that do not satisfy the following conditions: (1) sales revenue is less than 150 billion Korean won (about 150 million USD), (2) total asset is less than 500 billion Korean won, and (3) majority shareholder ownership is less than 30 per cent.

Table 1: Sample Selection Procedure and Sample Composition

Panel A. Firms designated as trusted taxpayers

Year	Firms designated as trusted taxpayers
2009	23
2010	23
2011	21
2012	22
2013	20
2014	22
2015	22
Total Sample	153

Panel B. Sample selection procedure

Sample Composition	Number of observations
Firm-years of firms designated as trusted taxpayers during the sample period (2009-2015)	1,071
Firm-years of firms designated as trusted taxpayers more than once during the sample period (2009-2015)	(35)
Firm-years without enough information to calculate response or control variables	(17)
Total Sample	1,019

3.3 Empirical Models

We examined the effect of the trusted taxpayers' designation on the likelihood of tax avoidance by using regression models. For all the hypotheses, the dependent variable was the measure of tax avoidance. We specifically followed Desai and Dharmapala (2009) by using book-tax differences (BTD), and discretionary BTD (DD_BTD) as stated above for this purpose. Our variable of interest is an indicator variable which takes the value of 1 if a firm has been designated as a trusted taxpayer at least once and 0 for otherwise.

For H_2, H_3 and H_4, we added an additional variable and its inter-action to the model. To test the effect of the presence of a CEO from

the founding family (H_2) on tax avoidance among firms designated as trusted taxpayers, we added a CEO from a founding family as the indicator variable (*FOUNDER CEO*) and its interaction with the *TAXPAYER* variable. To test the effect of the non-SME firms on tax avoidance among firms designated as trusted taxpayers (H_3), we added an indicator variable representing the non-SME firms (*COC*) and its interaction with the *TAXPAYER* variable. Finally, to test the effect of majority shareholder ownership on tax avoidance among firms designated as trusted taxpayers (H_4), we added an indicator variable which takes the value of 1 if the firm's majority ownership was greater than the sample median, and 0 for otherwise (*Dum_MOWN*), and its interaction with the *TAXPAYER* variable.

$$
\begin{aligned}
TAXAVOID_{i,t} = {} & \beta_0 + \beta_1 TAXPAYER_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 INTAN_{i,t} + \\
& \beta_4 INVEN_{i,t} + \beta_5 LEV_{i,t} + \beta_6 FSH_{i,t} + \beta_7 MOWN_{i,t} + \\
& \beta_8 AGE_{i,t} + \sum YEAR + \sum IND + \varepsilon_{i,t}
\end{aligned} \tag{3}
$$

$$
\begin{aligned}
TAXAVOID_{i,t} = {} & \beta_0 + \beta_1 TAXPAYER_{i,t} + \beta_2 FOUNDER\ CEO_{i,t} + \\
& \beta_3 TAXPAYER_{i,t} \times FOUNDER\ CEO_{i,t} + \beta_4 SIZE_{i,t} + \\
& \beta_5 INTAN_{i,t} + \beta_6 INVEN_{i,t} + \beta_7 LEV_{i,t} + \beta_8 FSH_{i,t} + \\
& \beta_9 MOWN_{i,t} + \beta_{10} AGE_{i,t} + \sum YEAR + \sum IND + \varepsilon_{i,t}
\end{aligned} \tag{4}
$$

$$
\begin{aligned}
TAXAVOID_{i,t} = {} & \beta_0 + \beta_1 TAXPAYER_{i,t} + \beta_2 COC_{i,t} + \beta_3 TAXPAYER_{i,t} \times \\
& COC_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INTAN_{i,t} + \beta_6 INVEN_{i,t} + \\
& \beta_7 LEV_{i,t} + \beta_8 FSH_{i,t} + \beta_9 MOWN_{i,t} + \beta_{10} AGE_{i,t} + \\
& \sum YEAR + \sum IND + \varepsilon_{i,t}
\end{aligned} \tag{5}
$$

$$
\begin{aligned}
TAXAVOID_{i,t} = {} & \beta_0 + \beta_1 TAXPAYER_{i,t} + \beta_2 DUM\_MOWN_{i,t} + \\
& \beta_3 TAXPAYER_{i,t} \times DUM\_MOWN_{i,t} + \beta_4 SIZE_{i,t} + \\
& \beta_5 INTAN_{i,t} + \beta_6 INVEN_{i,t} + \beta_7 LEV_{i,t} + \beta_8 FSH_{i,t} + \\
& \beta_9 AGE_{i,t} + \sum YEAR + \sum IND + \varepsilon_{i,t}
\end{aligned} \tag{6}
$$

where
TAXAVOID   = a measure of the level of tax avoidance;
BTD   = (income before tax–taxable income) divided by begin-
                    ning total assets;

DD BTD	= residuals estimated from the regression of BTD and total accruals by year and industry;
TAXPAYER	= 1 if selected as trusted taxpayer at least once, 0 otherwise;
FOUNDER CEO	= 1 if managed CEOs from founding family, 0 otherwise;
COC	= 1 if non-SME firms, 0 otherwise;
Dum_MOWN	= 1 if majority shareholder ownership is greater than median, 0 otherwise;
SIZE	= natural log of total assets;
INTAN	= intangible assets divided by beginning total assets;
INVEN	= total inventory divided by beginning total assets;
LEV	= total liabilities divided by beginning total assets;
MOWN	= majority shareholder ownership;
FSH	= foreign investor ownership;
AGE	= number of days after going public divided by 365;
YEAR	= 1 if year of interest, 0 otherwise; and
IND	= 1 if industry of interest, 0 otherwise.

In this study, we included industry and year fixed effects to address the cross-sectional differences across industry, and time. Following Na et al. (2014), we then added firm age (*AGE*) to the model to associate the firm's tax aggressiveness with firm age. Generally, a firm will slow down its growth as it matures, and the firm's level of relative tax cost is also expected to decrease. Thus, we anticipate that older firms would be less likely to pursue aggressive tax strategies.

Within any industry, larger firms (*SIZE*) tend to have a competitive advantage over smaller firms. Through this advantage, larger firms can use a comparatively more superior tax strategies for its own benefits. This implies that it has a positive association with tax avoidance (Kim & Jeong, 2006). However, based on the political cost hypothesis, larger firms were more likely to refrain from tax avoidance. From the review of past studies discussed earlier, we deduced that the association can be either way. Since firms' intangible assets (*INTAN*) were often considered as a measure of the firms' future growth opportunities, it was also deduced that firms with higher growth opportunities were more likely to receive tax benefits. These firms were thus more likely to avoid taxes, even with the tax benefits received because the incentives they had received place them in future anticipation of a decrease in tax payments or an increase in more tax benefits in the future (Gupta & Newberry,

1997). It appears that firms with larger inventories (*INVEN*) were less likely to avoid taxes when compared to firms with smaller inventories (Gupta & Newberry, 1997). Based on this, we foresee a positive association between intangible assets and tax avoidance, and a negative association between inventory and tax avoidance.

Further to the above, firms with a high leverage ratio (*LEV*) had been observed to have the incentive to reduce taxable income by using interest payments (Kim & Jeong, 2006). Since these firms have less incentives to be involved in tax-avoidance, we thus predicted a negative association between the leverage ratio and tax avoidance. In this study, we take the view that firms with high majority shareholder ownership (*MOWN*), and foreign institutional ownership (*FSH*) were more likely to have a strong corporate governance. This implied that the shareholders have a more effective monitoring hold on the firms. From this discussion, we also anticipated the coefficients of *MOWN* and *FSH* to be negative (Choi, 2013). However, since income after tax is used to pay dividends, the convergence of the interest hypothesis between managers and shareholders may hold. Thus, we expected the sign of *MOWN* to be positive (Ko & Park, 2011).

4. Descriptive Statistics and Empirical Results

4.1 Descriptive Statistics

Table 2 displays the descriptive statistics of the variables used in the analysis. The average of the *BTD* was noted to be 0.029 for firms designated as trusted taxpayers at least once, and 0.047 for other firms. The value for the discretionary *BTD* (*DD_BTD*) was noted as 0.035 for firms designated as trusted taxpayers at least once, and 0.049 for other firms. The table also demonstrates that firms designated as trusted taxpayers at least once were larger (*SIZE*), have higher foreign ownerships (*FSH*), and they also have higher majority shareholder ownership (*MOWN*) than other firms. The t-statistics showed that the difference between the two groups was statistically significant. This implies that firms designated as trusted taxpayers have a stronger corporate governance than other firms.

Table 3 presents the correlations between the variables. The tax avoidance measures, *BTD* and *DD_BTD*, had a correlation of 0.960 at the one per cent significance level. The *TAXPAYER* variable had a correlation of -0.079 and -0.061 with *BTD* and the discretionary *BTD*(*DD_BTD*) respectively, at the one per cent significance level.

Table 2: Descriptive Statistics

Variable	Firms designated as trusted taxpayers at least once					
	Obs.	Mean	SD	Min	P50	Max
BTD	1,019	0.029	0.095	-0.086	0.007	0.580
DD_BTD	1,019	0.035	0.096	-0.089	0.016	0.572
SIZE	1,019	26.112	1.492	23.830	25.709	30.863
INTAN	1,019	0.027	0.044	0	0.011	0.259
INVEN	1,019	0.125	0.103	0.001	0.096	0.463
LEV	1,019	0.382	0.205	0.051	0.360	1.064
FSH	1,019	0.084	0.124	0	0.027	0.542
MOWN	1,019	0.437	0.152	0.116	0.436	0.798
AGE	1,019	8.058	1.125	3.713	8.211	9.641
FOUNDER CEO	1,019	0.262	0.439	0	0	1
COC	1,019	0.552	0.497	0	1	1
Variable	Matching sample					
	Obs.	Mean	SD	Min	P50	Max
BTD	3,057	0.047	0.095	-0.023	0.016	0.580
DD_BTD	3,057	0.049	0.095	-0.089	0.022	0.572
SIZE	3,057	25.962	1.375	23.830	25.681	30.863
INTAN	3,057	0.028	0.044	0	0.011	0.259
INVEN	3,057	0.126	0.096	0.001	0.108	0.463
LEV	3,057	0.428	0.223	0.051	0.417	1.064
FSH	3,057	0.067	0.110	0	0.017	0.542
MOWN	3,057	0.425	0.155	0.112	0.418	0.798
AGE	3,057	8.152	1.096	3.713	8.371	9.641
FOUNDER CEO	3,057	0.216	0.412	0	0	1
COC	3,057	0.605	0.488	0	1	1

Table 3: Correlation Coefficients

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) TAXPAYER	1.000											
(2) BTD	-0.079***	1.000										
(3) DD_BTD	-0.061***	0.960***	1.000									
(4) SIZE	0.045***	-0.042**	-0.035**	1.000								
(5) INTAN	-0.008	0.053**	0.051***	-0.120***	1.000							
(6) INVEN	-0.002	0.067***	0.053***	-0.126***	-0.026**	1.000						
(7) LEV	-0.008***	0.129***	0.130***	0.223***	0.011	0.139***	1.000					
(8) FSH	0.061***	-0.041***	-0.029*	0.520***	-0.022	-0.089***	-0.106***	1.000				
(9) MOWN	0.035**	-0.018	-0.016	0.007	-0.192***	0.030*	-0.063***	-0.078***	1.000			
(10) AGE	-0.036**	-0.073***	-0.072***	0.312***	-0.207***	-0.081***	0.019	0.161***	-0.004	1.000		
(11) FOUNDER CEO	0.045***	-0.044***	-0.050***	0.294***	-0.136***	-0.007	-0.017	0.112***	0.091***	0.306***	1.000	
(12) COC	-0.046***	-0.061***	-0.059***	0.617***	-0.027***	-0.035**	0.199***	0.296***	0.119***	0.304***	0.307***	1.000

Notes: 1) The number of observations in the data set is 4076.
2) ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

4.2 Empirical Results

Table 4 lists the results related to hypothesis H$_1$. Each column shows the results derived from different measures of tax avoidance (BTD, and the discretionary BTD) as the dependent variable. Consistent with our hypothesis, the regression coefficients for our variable of interest are negative, and statistically significant for all measures of the tax avoidance. The outcome suggests that firms are less likely to avoid taxes after being designated as trusted taxpayers. We attribute this finding to the fact that the trusted taxpayer designation has helped the firms to build a reputation of corporate transparency for their external stakeholders as well as the public. This further encourages the firms into believing that they should continue to pay taxes faithfully, thereby promoting transparency, and increasing firm value.

Table 4: Firms Designated as Trusted Taxpayers and Tax Avoidance (H1)

Variables	TAXAVOID			
	BTD		DD_BTD	
Intercept	0.177*	(1.85)	0.171*	(1.77)
TAXPAYER	-0.013***	(-3.97)	-0.010***	(-3.13)
SIZE	-0.000	(-0.19)	-0.000	(-0.28)
INTAN	0.091***	(2.70)	0.085***	(2.49)
INVEN	0.018	(1.10)	0.010	(0.64)
LEV	0.047***	(6.38)	0.048***	(6.56)
FSH	0.008	(0.52)	0.016	(1.05)
MOWN	0.000	(0.01)	0.002	(0.16)
AGE	-0.003*	(-1.79)	-0.003**	(-2.20)
Industry and year dummies	Included			
No. of observations	4,076		4,076	
Adj. R²	0.128		0.112	

Note: This table presents results from the OLS model. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. All t-values are based on two-tailed tests using firm- and year-clustered standard errors.

Table 5 lists the results related to hypothesis H$_2$. Each column showing the results derived from using different measures of tax avoidance (BTD and discretionary BTD) as the dependent variable. Again, the test results are consistent with our hypothesis which states

Table 5: Effect of CEOs from Founding Families on the Association between Firms Designated as Trusted Taxpayers and Tax Avoidance (H_2)

Variables	TAXAVOID			
	BTD		DD_BTD	
Intercept	0.075	(1.45)	0.096*	(1.89)
TAXPAYER	-0.053***	(-10.19)	-0.047***	(-9.02)
FOUNDER CEO	0.009	(1.19)	0.009	(1.22)
TAXPAYER*FOUNDER CEO	-0.020*	(-1.80)	-0.023**	(-2.14)
SIZE	-0.001	(-0.32)	-0.001	(-0.70)
INTAN	0.048	(1.00)	0.031	(0.66)
INVEN	0.039	(1.76)	0.039	(1.78)
LEV	0.073***	(6.90)	0.073***	(6.99)
FSH	-0.006	(-0.26)	0.006	(0.25)
MOWN	0.023	(1.58)	0.021	(1.45)
AGE	-0.002	(-0.86)	-0.002	(-0.91)
Industry and year dummies	Included			
No. of observations	4,076		4,076	
Adj. R^2	0.090		0.081	

Note: This table presents results from the OLS model. ***, **, and* denote significance at the 1%, 5%, and 10% levels, respectively. All t-values are based on two-tailed tests using firm- and year-clustered standard errors.

that firms managed by CEOs from founding families would be less likely to avoid taxes, including those designated as trusted taxpayers. This finding shows that firms managed by CEOs from founding families would be less likely to practice tax avoidance so as to avoid the long term risk of tax investigations.

Table 6 shows the regression results for testing hypothesis H_3. Similar to our results for H_2, the test results here are also negative, and statistically significant. Non-SME firms are less likely to avoid taxes than small and medium-sized firms. This is because such firms wanted higher valuations in the stock market, besides wanting an increased reputation as transparent firms. Consistent with this argument, the results derived from the current study can thus be accepted because even among firms designated as trusted taxpayers, non-SME firms are less likely than small and medium-sized firms in tax avoidance.

Table 6: Effect of Non-SME firms on the Association between Firms Designated as Trusted Taxpayers and Tax Avoidance (H₃)

| Variables | TAXAVOID | | | |
	BTD		DD_BTD	
Intercept	0.020	(0.46)	0.031	(0.71)
TAXPAYER	-0.026***	(-4.54)	-0.020***	(-3.51)
COC	-0.001	(-0.19)	-0.000	(-0.09)
*TAXPAYER*COC*	-0.012**	(-2.24)	-0.015**	(-1.97)
SIZE	0.003*	(1.87)	0.003	(1.40)
INTAN	0.081**	(2.02)	0.073*	(1.82)
INVEN	0.020	(1.06)	0.019	(1.00)
LEV	0.052***	(6.12)	0.055***	(6.49)
FSH	0.001	(0.08)	0.013	(0.70)
MOWN	0.011	(0.08)	0.012	(1.03)
AGE	-0.002	(-1.12)	-0.003	(-1.48)
Industry and year dummies	Included			
No. of observations	4,076		4,076	
Adj. R²	0.147		0.133	

Note: This table presents results from the OLS model. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. All t-values are based on two-tailed tests using firm- and year-clustered standard errors.

Table 7 shows the regression results after testing hypothesis H₄. The test results show that firms with majority shareholder ownership that is greater than the sample median are less likely to avoid taxes when compared with firms having ownership that is less than the sample median. This result thus supports hypothesis H₄. The findings show that higher majority shareholder ownership help to curb the executives' tax avoidance behaviour. This is thus deduced as showing that firms with higher majority shareholder ownership are less likely to avoid taxes when compared with firms with lower majority shareholder ownership. This occurs even among firms designated as trusted taxpayers.

5. Conclusion

This study examined the efficacy of the Korean trusted taxpayer system by investigating whether or not firms that are designated as trusted

Table 7. Effect of Majority Shareholder Ownership on the Association between
Firms Designated as Trusted Taxpayers and Tax Avoidance
(Hypothesis 4)

Variables	TAXAVOID			
	BTD		DD_BTD	
Intercept	0.045	(0.85)	0.079	(1.53)
TAXPAYER	-0.064***	(-8.89)	-0.055***	(-7.80)
Dum_MOWN	0.015**	(2.36)	0.016***	(2.59)
*TAXPAYER*Dum_MOWN*	-0.018*	(-1.82)	-0.023**	(-2.34)
SIZE	0.001	(0.33)	-0.001	(-0.24)
INTAN	0.083*	(1.79)	0.042	(0.92)
INVEN	0.037	(1.59)	0.037	(1.63)
LEV	0.076***	(6.56)	0.076***	(6.76)
FSH	-0.020	(-0.72)	-0.004	(-0.16)
AGE	-0.000	(-0.12)	-0.001	(-0.30)
Industry and year dummies	Included			
No. of observations	4,076		4,076	
Adj. R²	0.119		0.108	

Note: This table presents results from the OLS model. ***, **, and * denote significance at
the 1%, 5%, and 10% levels, respectively. All t-values are based on two-tailed tests
using firm- and year-clustered standard errors.

taxpayers pay taxes faithfully. The tax authorities provided tax benefits
to such firms including exempting these firms from tax investigations
for three years once they had been designated as trusted taxpayers.
The expectation of this study is that these benefits would induce such
firms to pay taxes faithfully and continuously. In particular, this study
examined the difference in tax avoidance between trusted taxpayers and
other firms. This study also examined whether CEOs from founding
families, non-SME firms and majority shareholder ownership would
affect the difference in tax avoidance between the two groups.

Using 4,076 matching firm-years listed in the Korean stock markets
from 2009 to 2015, our results are able to display the following outcomes.
First, we found that firms that are designated as trusted taxpayers are
less likely to avoid taxes. Second, among firms designated as trusted
taxpayers, we found that tax avoidance is significantly lower for firms
managed by CEOs from founding families, for non-SME firms, and for

firms with high majority shareholder ownership. Our results further indicate that firms designated as trusted taxpayers fulfill the tax authority's expectations by paying their taxes faithfully. The results obtained in this study show that current firms that are trusted by the taxpayer system are effectively inducing faithful tax payments. Based on this, we argue that the trusted taxpayer system should be promoted among other countries too, so as to induce faithful corporate tax payments.

In order to induce tax compliance practices among firms, countries such as the United States of America tend to use the punishment system on tax avoiders, upon the conducting of rigorous tax investigations. In contrast, the NTS of Korea induces tax compliance by rewarding taxpayers through the provisions of some economic tax benefits, especially for those who have paid their taxes faithfully. In contrast, the reward system can successfully induce voluntary payment of taxes. This result implies that adopting a system that is similar to the trusted taxpayer's system may help many countries, including the USA, to induce their taxpayers to pay taxes voluntarily.

This study uses a proprietary data which are taken from a list of firms designated as trusted taxpayers as listed by the NTS of Korea. The data are found to be useful for examining the effectiveness of the tax policy that can easily be considered in other regimes so as to promote the faithfulness of taxpayers. To the best of our knowledge, the effect of tax policies on firms with trusted taxpayers' designation has never been examined before. Thus, empirical evidence which can support the outcome of this study is limited. Based on this, it is hereby emphasised that the result of this study provides the empirical evidence which addressed the claim. The positive tax system introduced by the Korean government can be described as an effective means for improving the faithfulness of the taxpayers in paying taxes. The policy makers of other countries should consider introducing this tax system for its taxpayers.

This study shows that family firms and non-SMEs are more concerned with non-tax costs such as the potential stock price discounts by investors, the potential penalty imposed by the taxing authority, and the potential reputational damage. Our findings thus reinforced the notion proposed by Desai and Dharmapala (2006) who stated that firms could utilise aggressive tax strategies to mask their earnings management activities. Because investors would protect themselves against potential earnings management that is embedded in the aggressive tax strategies, family owners are more willing to forego the

tax benefits in order to avoid the price discounts associated with family entrenchment. Furthermore, this study has also provided evidence which shows that firms have considered the reputational cost over tax avoidance. This study thus shows that when weighted against the benefits to tax savings, non-SME firms prefer to enjoy an improved reputation of corporate transparency.

Overall, this study is restrained by the fact that the Korean tax authority applied separate criteria for corporate businesses and self-employed businesses to be given the trusted taxpayer designation. Thus, our results are confined to the data of corporate businesses only. We are also unable to provide a detailed means for tax avoidance as we only used a composite measure of tax avoidance.

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Total Quality Management and the Role of Management Accountants on Organisational Performance: The Service Sector in Malaysia

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ABSTRACT

Manuscript type: Research paper

Research aims: This study examines the relationship between total quality management (TQM), the role of the management accountant and organisational performance among the service sector in Malaysia.

Design/Methodology/Approach: This study collects data from 100 private service organisations in Malaysia via a self-administered printed questionnaire. Data collected are analysed using partial least squares (PLS) 3.0.

Research findings: The results reveal that TQM has a positive significant impact on organisational performance. The TQM's practice of focussing more on customers and the designing of services also show significant effects on organisational performance. This study finds that management accountants do not moderate the relationship between TQM and organisational performance.

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Theoretical contribution/Originality: This study expands the previous literature by examining the role of the management accountant as a moderator between TQM and organisational performance.

Practitioner/Policy implications: The results derived from this study can be used to facilitate the application of TQM in service organisations so as to enhance their organisational performance. The findings can also assist managers in the service organisations to determine the functions of their management accountants because this can impact on the successful adoption of TQM.

Research limitation/Implications: The limitations of this study includes its scope which is confined to only the service industry. Future research should expand further to cover other industries.

1. Introduction

Globalisation, rapid growth of technology, and changes in the socio-political and economic environment have intensified competition and developed more challenges for businesses in the market. To sustain themselves, these businesses need to address those increasing pressures that consumers and competitors alike have placed on them, for instance, to improve their product standards and service quality (Muturi, Ochieng, & Njihia, 2015; Mahmood, Mahmood, Qureshi, & Nisar, 2014). Service quality is becoming a significant issue to organisations because it enables organisations to remain competitive and to excel. These practices are thus applied and implemented by service organisations so as to gain a competitive edge over others (Bon & Mustafa, 2013). To be able to offer quality services, these service organisations need to be proactive at an opportune time with appropriate prices (Mohd Amir, Nik Ahmad, & Har Sani Mohamad, 2010). This has to be the strategy because better service quality coupled by lower prices would improve an organisation's competitiveness, hence increase customer satisfaction (Kumar, Garg & Garg, 2011).

The service sector has a vital role to play in industrialised economies (Hasan & Kerr, 2003; Ismail, Yussof, & Uddin, 2012; Lam, Lee, Ooi, & Phusavat, 2012). It was observed that in 2016, about half or 54 per cent of Malaysia's GDP was contributed by the service sector (Ministry of Finance Malaysia, 2016). By 2020, the service sector is expected to

improve its contribution to the GDP even more, around 58 per cent (Ministry of International Trade and Industry, 2013). Despite the crucial role it plays in the Malaysian economy, the service sector has largely been overlooked by research (Muzamil Naqshbandi & Idris, 2012; Mohd Amir et al., 2010) with only a few studies that had examined total quality management (TQM) among the service industry of Malaysia.

Despite its manufacturing origins (Mohanty & Behera, 1996) which began in the past 15 years, the TQM principles and practices also have been applied by academics and practitioners within the service sector (Silvestro, 1998). Some service organisations from a variety of service industries, such as healthcare, insurance and hospitality have shown an interest in TQM in recent years (Yasin, Alavi, Kunt, & Zimmerer, 2004). The reason is because TQM promotes the effective management of service organisations; it is also one of the causal factors for business excellence (Calabrese & Corbò, 2015).

TQM has been identified to be the most successful approach in managing products and service quality and it has also helped to improve companies' competitiveness globally (Sweis et al., 2016). TQM has also been noted to enable firms to reduce costs and to increase the productivity of the physical and human organisational assets (Sweis et al., 2016). TQM is an organisational-wide philosophy that is constantly applied by firms so as to improve the quality of their products, services and also the processes involved. Firms are encouraged to focus on consumers' requirements in anticipation of greater customer satisfaction and organisational performance (Sadikoglu & Olcay, 2014). In recent years, TQM has also been regarded as one of the more advanced management accounting practices (Tuanmat & Smith, 2011; Nuhu, Baird, & Appuhami, 2016; Ross & Kovachev, 2009; Ayedh & Houssem, 2015).

Most literature (Chong & Rundus, 2004; Chenhall, 1997; Kaynak, 2003; Baird, Jia Hu, & Reeve, 2011; Al-Dhaafri, Al-Swidi, & Yusoff, 2016) have stated that the relationship between TQM and organisational performance is positive and significant. However, other studies found adverse results (e.g. Kober, Subraamanniam, & Watson, 2012). These inconsistent results have caused previous researchers to concentrate on factors that prevent organisations from achieving the benefits of TQM. Tatikonda and Tatikonda (1996) identified the usual charac-teristics of TQM adopters which did not experience a huge increase in their organisations' quality and profitability. These factors were found to include insufficient customer focus, insufficient management commitment and involvement, meaningless trainings, inadequate costs

and benefit analyses, absence of an organisational structure that supports TQM implementations, trivial bureaucracy, inadequate or wrong measurements, unsuitable rewards and recognitions, followed by outdated accounting systems. Other studies such as those by Nicolaou and Kentas (2017) reviewed the healthcare sectors' failure for TQM implementation; Talib and Rahman (2015) prioritised and ranked the barriers for TQM implementations within the service industry by using an analytic hierarchy process (AHP) approach while Mosadeghrad (2013, 2014) related successful TQM implementation needs sufficient education and training, supportive leadership, consistent support of top management, customer focus, employee involvement, process management and continuous improvement of processes; and Talib, Rahman and Qureshi (2013) found that quality culture was perceived as the dominant TQM practice.

Cockrell and Meyer (2012) stated that management accountants can play a crucial role in making tremendous contributions towards organisation performance by manifesting their ability to recognise those factors that contribute to TQM failures. Management accountants are important individuals of an organisation. They have the competence to contribute towards their firms' performance because they have the understanding about the best cost accounting practices, they possess various computer application skills, they are good team players, they have the highest knowledge about their company's operations and other business matters, they play the role and have the assured responsibility to participate in strategic decision-making of the company, and they also have the cognitive abilities to undertake the thinker's role. The worldwide adoption of TQM allows management accountants to continuously enhance their companies' quality improvement activities through contemporary and modern methods (Cockrell & Meyer, 2012). On the same note, Manners (2006) had also posited that management accountants can provide the decision-support environment for the firm's continuous improvement. The function of TQM includes managing the past, the present and the future costs of the firm through systematic managerial accounting, cost accounting and general accounting (Chen, 2016).

Previous studies have examined the transformation of management accountants' role without examining its relationship with other variables including TQM. Furthermore, how the role of management accountants have changed and developed within an organisation have not been thoroughly explored. Previous studies (De Loo, Verstegen, &

Swagerman, 2011; Goretzki, Strauss, & Weber, 2013; Byrne & Pierce, 2007) have suggested that insights into the changes of management accountants is still insufficient while there is still much debate about management accountants and their functions within organisations. This study argues that service organisations' performance may be influenced by TQM and management accountants. Specifically, the objectives of this study are to analyse the effect of TQM on organisational performance, and to examine the moderating effect of the management accountant's role on the association between TQM and organisational performance. The resource-based view (RBV) is utilised as the underlying theory in the framework.

This paper is organised in the following manner. Section 1 presents the background of the investigated concepts. Section 2 reviews the related literature leading to the theoretical framework for the research methodology. Section 3 discusses the methodology employed. Section 4 presents the results, analyses and the findings while Section 5 presents the research implications, constraints and proposals for future studies.

2. Literature Review

2.1 Total Quality Management (TQM)

Although TQM has been discussed in management literature, it is recently viewed as an advanced management accounting practice (Wickramasinghe & Alawattage, 2007; Yazdifar & Tsamenyi, 2005; Yazdifar, Askarany, & Askary, 2008). Advanced management accounting practices are established in order to remove the constraints of conventional management accounting practices, and to fulfil the requests of the evolving business environment (Nuhu et al., 2016).

Research on TQM as noted in the management accounting literature is limited. Ittner and Larcker (2001) postulated that studies looking at the interaction between accounting and operations management, such as TQM (Muhammad Zawawi & Hoque, 2010) have significantly decreased due to the growing interest on "new" areas, such as intangible assets, balanced scorecard (BSC), and economic value added. Muhammad Zawawi and Hoque (2010) reviewed the research done on management accounting innovation and noted that studies in this area were limited with some studies focusing on the relationship between TQM and management accounting (Gurd, Smith, & Swaffer, 2002; Emsley, 2008). These studies focused on either management accounting system in TQM's environment or costs and outcomes related to quality.

TQM practices include corporate planning, top management leadership, customer focus, human resource focus, process focus, quality focus, and information and analysis (Brah, Wong, & Madhu Roa, 2000). Other studies like Flynn, Sakakibara and Schroeder (1995) and Chong and Rundus (2004) mentioned that TQM can be measured through two practices – customer focus, and product/service designs. Customer focus involves producing and delivering products and services that fulfil the demands and anticipation of customers for the present and future (Sadikoglu & Zehir, 2010). Service design is the attempt to fulfil lucidity in terms of services and process design specifications before offering the services to the market (Baird et al., 2011). The main feature of quality management is for firms to have a solid relationship with the customers, hence customers' requirements are recognised and addressed (Sit, Ooi, Lin, & Chong, 2009). For firms to be able to offer services or products that fulfil or even exceed customers' expectations, top managers need to integrate customers' recommendations into their service designs (Mahmood et al., 2014).

To date, only a few empirical studies on TQM have been carried out in the ASEAN region (Lam et al., 2012). For Malaysia, the implementation of TQM is still problematic (Mahmud & Hilmi, 2014), with only a few empirical studies (Idris, 2011; Sohail & Hoong, 2003) that had focused on TQM practices and organisational performance.

2.2 TQM and Organisational Performance

Organisational performance is defined as the result of the operations performed by organisational members (Ramayah, Samat, & Lo, 2011). To date there are mixed results in the relationship between TQM and organisational performance although most studies have revealed positive findings. For instance, Chenhall (1997) found that performance can be enhanced when there were links between TQM programmes and dependence on manufacturing performance measures. The study by Dunk (2002) showed that product quality can positively enhance quality performance. Chong and Rundus (2004) suggested that highly competitive markets had a greater positive association between TQM practices of customer focus, and product designs, with business performance. Hamza and Al-Kassar (2015) indicated that companies that applied the TQM system gained many benefits, such as better market ranking, improved market shares, better production efficiency and reduced costs. However, the research by Kober et al. (2012) found no proof

of the positive relationship between TQM and financial performance (after controlling age, sector, size and threats). Similarly, Corredor and Goñi (2011) observed that the adoption of the TQM system had no huge impact on company performance.

2.3 Role of the Management Accountant

The tasks of the management accountant are varied and many. Traditionally, a management accountant collects, interprets and discloses financial data to the organisation (Ramli, Zainuddin, Sulaiman, & Muda, 2013). The emerging "philosophies" of management, such as TQM and continuous improvements, are becoming a component of the management accounting system that gives financial and non-financial data (Wickramasinghe & Alawattage, 2007). The management accounting system fulfils the requirement for information that upholds culture and which emphasises on quality (Sharma & Suva, 2000). As a result of this, we can see changes occurring in the functions of the management accountants, moving from assessing and disclosing business activities to collaborating with those of management science, sales, finance and other experts in the implementation of contemporary management measures, such as TQM (Albright & Lam, 2006; Fowler, 1999). In this context, management accountants are becoming business analysts as well as internal advisors of the organisation rather than just as a support staff who provides the line managers with supplementary services (Yazdifar & Tsamenyi, 2005; Wickramasinghe & Alawattage, 2007; Rahman & Ahmed, 2012). The function description applied on management accountants today include "business partners" or "internal advisors" because their job is to facilitate the management's openness in the decision-making process (Hiebl, Duller, & Feldbauer-Durstmuller, 2012; Zainuddin & Sulaiman, 2016; Ramli et al., 2013).

Several studies (Ramli et al., 2013; De Loo et al., 2011; Byrne & Pierce, 2007; Sunarni, 2013; Yazdifar & Tsamenyi, 2005; Mistry, Sharma, & Low, 2014; Paulsson, 2012; Collins, Lawrence, Roper, & Haar, 2011) have discussed the role of the management accountants in their organisations from several per-spectives. Despite this, few have discussed or analysed the functions of the management accountant in quality management programmes. As an example, Fowler (1999) reviewed the function of the management accountants in quality control and it was noted that management accountants also include the TQM concepts in their accounting tasks. An accountant interviewed

by Sharma, Lawrence and Lowe (2010) had also stated the heavy adoption of TQM practices as part of their jobs. Most of the management accountants interviewed by Hoque and Alam (1999) believed that management accountants have a vital function in assisting companies to achieve their goals through their provision of various TQM-related measures and reports. Cockrell and Meyer (2012) had discussed the functions of management accountants with regards to TQM. They argued that the TQM's implementation success, and the handling of TQM issues are contributions made by management accountants (see Table 1), as identified by Tatikonda and Tatikonda (1996).

Table 1: Role of Management Accountants in TQM

Potential reasons for failure	Prevention strategies
Lack of customer focus	• Promoting the service mentality internally and externally • Link financial data to customer satisfaction • Assist others in measuring satisfaction
Lack of management commitment and involvement	• Lead by example (attitude and actions) • Serve as a quality mentor for the executive team
Dysfunctional structures, processes and relationships	• Eliminate departmental barriers • Eliminate items which do not add values including unnecessary bureaucracy
Lack of cost and benefit analysis	• Assist with cost analysis • Teach others how to use analysis • Integrate the use of financial and quality tools • Estimates effect of quality initiatives on profitability • Assist in prioritising improvement efforts • Identify differences between process measures and outcomes
Human resources (HR) issues and processes, training, rewards and recognition, performance appraisals, job descriptions	• Identify training needs • Ensure that training reflect actual work practice • Align HR processes to support quality efforts • Take care of employees • Ensure data is reliant and reliable • Share financial data

Source: Cockrell and Meyer (2012).

3. Theoretical Framework

This study uses the RBV theory as the framework to show how an organisation can gain competitive advantages through its resources and capabilities (Kamboj, Goyal, & Rahman, 2015). In their study, Amit and Schoemaker (1993) had defined resources as the readily obtainable factors possessed and managed by a company, which are then transformed into final products or services. Barney (1991) argued that a company's resource will create a greater competitive advantage when it is priceless, scarce, expensive to copy and has no substitute.

Powell (1995) and Dubey (2015) were able to provide some empirical evidence showing that TQM could act as a source for companies to gain a competitive and sustainable advantage. TQM can be considered as an intangible resource which could lead firms or companies to achieve a competitive advantage (Al-Dhaafri et al., 2016). This was also supported by Tena, Llusar and Puig (2001) who asserted that the enhancement of firm performance through TQM is due to its encouragement in asset improvement, namely assets that are distinctive. TQM also creates intricate social relationships, is deeply ingrained in the company's history and culture, and creates implicit knowledge. All these characteristics of TQM allow the company to sustain its competitive advantage. Furthermore, TQM is difficult to be copied by rivals since it allows the creation and isolation of mechanisms. It also appears that TQM practices cause continuous improvements, thus it presents a moving target for competitors (Powell, 1995; Flynn, Schroeder, & Sakakibara, 1994).

Capabilities refer to the company's ability to effectively and efficiently utilise resources to gain desired results (Idris, 2011). The company's capability enables its resources to be used and the possibility of creating outputs (Akio, 2005). Capabilities may consist of skills such as technical or managerial skills; capabilities may also infer knowledge, experience, and know-how that enables the individual to do things well (Wade & Hulland, 2004; Foss, 1997). However, organisational success is dependent on the involvement of all levels, hence facilitating the TQM tools and techniques to sustain the company's competitive advantage. As a result of the company's abilities, TQM may serve as the company's culture to improve the company's performance (Yunis, Jung, & Chen, 2013). In line with previous studies (Annamalai & Ramayah, 2013; Martín-De Castro, Delgado-Verde, Navas-López, & Cruz-González, 2013; Ortega, 2010), our study considers capability as a moderator
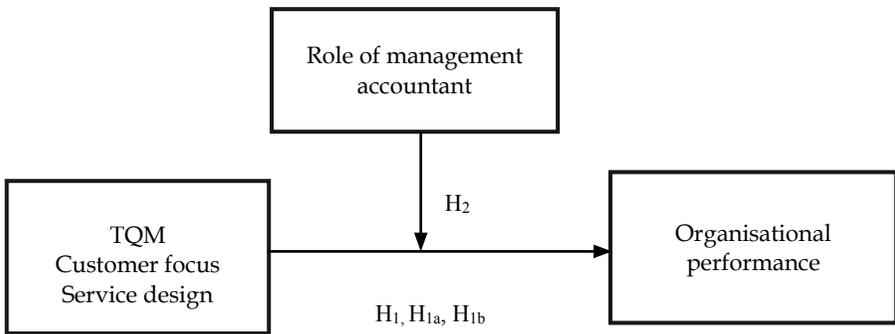
Figure 1: Research Framework

variable based on the RBV. In our study, capability is represented by the management accountant's role. The research framework is thus presented in Figure 1.

In explaining the relationship between the variables, there are two hypotheses formulated. Chenhall (1997) had concluded that TQM provides the possibility for a company to improve its profitability by helping managers to develop quality as a competitive advantage. Kober et al. (2012) also argued that the success of TQM implementation should result in an enhanced service quality. Thus, TQM positively affects both sales and profitability. Amir and Reiche (2013) stated that TQM adoption that is successful could bring in greater performance benefits to the company, including growth and efficiency, improved productivity and innovation, and increased profits and market share. As such, the hypothesis developed for our study is as follows:

H_1: There is a positive relationship between TQM and organisational performance.

In any business, customer focus is a company's vital feature that promotes customer satisfaction (Terziovski, 2006; Meftah Abusa & Gibson, 2013). This was confirmed by Sit et al. (2009) who found that customer focus has a tremendous impact on customer satisfaction. Ittner and Larcker (1996) suggested that through great customer satisfaction, organisations can increase their profits via cost reduction as a result of lesser product returns, and an increase in revenues due to customer loyalty. Seetharaman, Sreenivasan and Lim (2006) stated that in any organisation, customer satisfaction is the key to gain profits while Sadikoglu and Olcay (2014) asserted that customer focus has a

positive effect on firm growth/share, profitability, and it is a means of performance improvement, such as loyalty. Therefore, the hypothesis is proposed as follows:

H_{1a}: There is a positive relationship between customer focus and organisational performance.

Flynn et al. (1994) postulated that intact products or service designs that meet customer requirements can lead to an increase in market shares. Baird et al. (2011) stated that to include customers in the process of product/service designs, one way is to integrate their expectations into the development of a new service. This would enhance the firm's service features, and serviceability which can eventually improve quality performance. Calabrese and Corbò (2015) stated that an effective service design could lead to greater company performance, customer contentment, and employee involvement, and subsequently, some other common results of TQM. Based on these arguments, we hypothesise that:

H_{1b}: There is a positive relationship between service design and organisational performance.

According to the Institute of Management Accountants (IMA), the executive quality council may regard a management accountant as an excellent contributor. This is because a management accountant has the necessary skills of identifying areas that have the best opportunity for quality enhancement, and for establishing a quality measure system to observe progress against quality targets. Hamilton-Smith and Morris (1993) suggested that the management accountant could help the management in implementing the quality strategy through their skills. Margavio, Margavio and Fink (1995) had observed that management accountants are being called to assist in quality management decisions. This is because they are in the quality team, and they participate in the TQM implementation as advisers (Fowler, 1999). Cockrell and Meyer (2012) had noted that management accountants are distinctively qualified to function, and to assist their organisations in achieving performance excellence. They fulfil this part of their responsibility through their contributions towards the successful implementation of TQM. Based on these arguments and on previous literature, the hypothesis is proposed as follows:

H_2: The role of the management accountant moderates the association between TQM and organisational performance.

4. Methodology

4.1 Population and Data Collection

The target population for this study comprises 100 private service companies operating in Malaysia. They include finance companies, higher learning institutions, distribution and logistics companies, legal and accounting companies, and other service related organisations. The sampling frame of this study is the Malaysia Services Directory which showcases Malaysian companies that are registered with the Malaysia External Trade Development Corporation (MATRADE). The database can be accessed from the website, "http://www.matrade.gov. my/en/malaysian-exporters/showcasing-malaysia-export/directory/ malaysian-services-directory". The number of available companies in MATRADE as of 1 December 2016 was 8,119. Samples were randomly selected using stratified random sampling. A random sample from each stratum was taken in a number that is proportional to the stratum's size when compared to the population. The advantage of using stratified random sampling is that it provides the same opportunity to all the population units to be included in the selected samples. This offers a high level of generalisability (Bryman & Bell 2011). The database also provides the websites, email addresses, and the addresses of those companies. The sample size was determined using the table of Krejcie and Morgan (1970). The targeted sample size of 367 companies was based on the minimum number of cases needed for the selected method analysis. Kent (2001) had suggested that to obtain a sensible statistical analysis and significant results, a minimum of 100 cases is needed for any kind of quantitative analysis.

In this study, survey questionnaire was used to collect data based on past studies' approach (Ooi, Lin, Tan, & Chong, 2011; Psomas & Jaca, 2016; Lam et al., 2012). The self-administered printed questionnaire was employed for the purpose of obtaining information from respondents who represent companies which have the intention of obtaining the ISO 9001 certification or they have already obtained the ISO 9001 certification. Similar to the approach used by Sunarni (2013), every organisation in this study was given one questionnaire, and a letter explaining the study's goal, and a promise of confidentiality. Before distributing the questionnaires, the respondents were asked if they apply TQM in their organisations. This screening question helps to ensure that the participating organisations only include those that practise TQM. Questionnaires were directed to the heads of the

accounting department as they are expected to have the vision of their organisational performance. A total of 367 printed questionnaires were distributed by-hand to those companies that had been identified. With a response rate of 27 per cent, this study managed to secure 100 responses. All responses were usable for data analysis.

To improve the questionnaire's design and focus, a pre-test and a pilot test were performed before the actual data collection. For the pre-test, three questionnaires were given to three academics with background in management accounting, from the National University of Malaysia to review the questionnaire for clarity of the items used and their relevance. Feedback about the items and relevance was used to improve the questionnaire. Following this, a pilot test was conducted where five sets of the revised questionnaires were given to representatives from the service organisations within the sampling frame to see if they were able to answer the questionnaire. The representatives completed the questionnaires without any further suggestions for amendments. Therefore, their responses are included as part of the actual data analysis.

4.2 Measurement of Variables

To develop the questionnaire for the measuring the TQM, we adopted the questions established by Flynn et al. (1995) and adopted by Chong and Rundus (2004). They were modified for use by the current study. The five-point scale was used as responses for the respondents to indicate the TQM practices of two features: customer focus which has three items, and service design which has seven items. The scales ranged from "strongly disagree" to "strongly agree". Each respondent was required to rate every item of the two features. Five items were used to measure the functions of the management accountant. A five-point scale bounded by "never" and "very frequently" was used to evaluate the five items which also represented the five roles. Each respondent or the individual who performed the management accountant's functions was asked to indicate the relevance of the management accountant for five typical roles. Three of these roles or items (advisor/internal consulting, business analyst, and business partner) were adapted from Malmi, Seppala and Rantanen (2001) and Yazdifar and Tsamenyi (2005) while the two additional roles or items (value creator and decision enabler) were adapted from other related literature (Zainuddin & Sulaiman, 2016; Sulaiman, Ramli, & Mitchell, 2008; Rahman & Ahmed, 2012; Hiebl et al., 2012; Ramli et al.,

2013; Paulsson, 2012). Seven items were used to measure organisational performance. All of them had been developed by Coo and Verma (2002) and modified by Ramayah et al. (2011). Respondents must indicate the performance of their companies over the last three years using the five-point scale instrument ranging from "greatly decreased" to "greatly increased".

5. Data Analysis

Descriptive analysis was run to analyse the demographic profiles of the respondents and service companies that participated in this study. Table 2 presents the demographic characteristics of the respondents according to their age, level of education, specialisation, current position and

Table 2: Demographic Characteristics of the Respondents and Organisations

Demographic Characteristics	Frequency	Percentage (%)
Age		
Under 30	32	32
30-40	50	50
41-50	14	14
Over 50	4	4
Education & Qualification		
College diploma	23	23
Bachelor's degree	46	46
Post graduate	14	14
Professional qualifications	17	17
Job Title		
General Manager/CEOs	3	3
Managerial Accountant	15	15
Account/finance manager	42	42
Quality Manager	7	7
Others*	33	33
Specialisation		
Accounting/Finance	53	53
Business Administration	17	17
Marketing	10	10
Others	20	20
Experience		
Less than 5 years	34	34
5-10 years	38	38

Table 2: (continued)

Demographic Characteristics	Frequency	Percentage (%)
11-15 years	14	14
16-20 years	9	9
Over 20 years	5	5
Industry		
Business Services	20	20
ICT	18	18
Education Services	10	10
Entertainment	9	9
Architectural Services	7	7
Other Professional & Technical Services	7	7
Construction and Related Services	5	5
Health Services	5	5
Oil and Gas Services	4	4
Support Services	4	4
Distribution and Logistics Services	3	3
Engineering Services	2	2
Environment Protection Services	2	2
Financial Services	1	1
Franchise	1	1
Legal and Accounting Services	1	1
Printing and Publishing Services	1	1
Number of Employees		
5 to 29	53	53
30 to 75	22	22
Over 75	25	25
Annual Sales Turnover		
RM300,000 to RM3 million	56	56
RM3 million to RM20 million	35	35
Over RM20 million	9	9
Status		
ISO 9001 certified	42	42
Planning for ISO 9001 certification	58	58
Company's Age		
Less than 5 years	9	9
5-10 years	30	30
11-20 years	36	36
More than 20 years	25	25

Note: * 55% of this group are managers, directors or administrators.

length of experience in their current position. The results show that a majority of the respondents are in the age range of 30-40 years old (50%); hold a bachelor's degree qualification (46%), specialised in the area of accounting/finance (53%), hold positions as account/finance manager (42%); and have 5 to 10 years work experience.

Table 2 also presents the demographic characteristics of the companies according to industry, number of employees, annual sales turnover, the status of the firm in terms of ISO 9001 certification and company's age. Most of the participating companies are involved with business services (20%), have between 5 to 29 employees (53%); have an annual sales turnover between RM300,00 to less than RM3 million (56%), are planning for ISO 9001 certification (58%), and have been in the service industry for 11-20 years (42%). The descriptive analysis of the companies shows that the sample for the study is well represented in terms of industry type, size, ISO 9001 status and length of period in business.

5.1 Measurement Model Analysis

SmartPLS 3.0 software was used to assess the measurement's validity and reliability. Cronbach's alpha and composite reliability values less than 0.6 would signal a reliability problem (Hair, Ringle, & Sarstedt, 2011). As shown in Table 3, all the variables have values exceeding 0.70 indicating that the items used are reliable.

Convergent validity occurs when every measurement item has a strong correlation with its respective theoretical constructs while discriminant validity exists when every measurement item has a weak correlation with all the other constructs, excluding the one it is theoretically linked to. Certain aspects of the goodness of fit of the measurement model were captured by the two validities (Gefen & Straub, 2005). To examine the convergent validity, the factor loadings of every item and the average variance extracted (AVE) were obtained. Values that exceeded 0.50 are required to ensure practical significance (Psomas & Jaca, 2016). Two items from the service design dimension and two items from organisational performance were omitted due to low loadings (Table 4). A construct's convergent validity is satisfactory when its AVE value exceeds 0.5. This indicates that on average, more than half of the indicators' variance can be explained by the latent variable (Ifinedo, 2011; Hair et al., 2011). As shown in Table 3, the AVE of this study persistently exceeded 0.5.

Table 3: Convergent Validity

Constructs	Initial loadings	Modified	Cronbach's alpha	Composite reliability	AVE
Customer focus			0.867	0.919	0.792
CF1	0.825	0.825			
CF2	0.910	0.910			
CF3	0.932	0.932			
Service design			0.857	0.899	0.642
SD1	0.256	deleted			
SD2	0.801	0.819			
SD3	0.786	0.783			
SD4	0.663	0.639			
SD5	0.360	deleted			
SD6	0.863	0.873			
SD7	0.843	0.870			
Role of management accountant			0.762	0.834	0.505
ROMA1	0.568	0.559			
ROMA2	0.796	0.806			
ROMA3	0.686	0.660			
ROMA4	0.788	0.793			
ROMA5	0.708	0.707			
Organisational performance			0.835	0.883	0.603
OP1	0.226	deleted			
OP2	0.309	deleted			
OP3	0.820	0.804			
OP4	0.759	0.782			
OP5	0.786	0.807			
OP6	0.689	0.705			

Discriminant validity occurs when the constructs are similar to each other (Straub, Bourdreau, & Gefen, 2004).). This was asserted by Fornell and Larcker (1981) who mentioned that there is discriminant validity when the AVE exceeds the threshold value of 0.50, and when all constructs' square root of the AVE is higher when compared to all other cross-correlations. Table 4 confirms that no correlation between the constructs exceeded the square root of the AVE. Therefore, the discriminant validity in this study is adequate for all the constructs.

Table 4: Discriminant Validity (inter correlation) of the Variable Constructs

Constructs	CF	OP	RMA	SD
Customer focus (CF)	**0.890**			
Organisational performance (OP)	0.428	**0.777**		
Role of management accountant (RMA)	0.181	0.221	**0.711**	
Service design (SD)	0.555	0.511	0.085	**0.801**

Overall, this study's measurement items demonstrate good reliability as well as good convergent and discriminant validities.

5.2 The Structural Model

The second step of the PLS is the examination of the structural model. It involves estimating the path coefficients (β), and the squared R (R^2). Path coefficients show the relationship's strength of the independent and dependent variables (Ko, Kirsch, & King, 2005). The R^2 shows the percentages of the variance explained by the explanatory variables (Soltanizadeh, Abdul Rasid, Mottaghi Golshan, & Wan Ismail, 2016). The threshold level for R^2 value is 0.1 (Camisón & López, 2010). The path significance level is examined by obtaining the t-values from the bootstrapping method in the PLS. In general, an acceptable t-value is one that is larger than 1.96 (t-value > 1.96), which means that it is significant (Hair et al., 2011). Additionally, in assessing the hypotheses, the probability value (p-value) is utilised. The p-value quantitatively measures the numerical significance of a hypothesis and a p-value < 0.05 implies that the hypothesis is significant (Ifinedo, 2011). In this study, the R^2 for the main model is recorded as 0.312, exceeding the recommended 0.10 threshold (Hair et al., 2011). Table 5 illustrates that TQM and organisational performance has a positive significant relationship (β = 0.522, t = 5.560, p <0.001). Specifically, customer focus (β = 0.207, t = 2.101, p < 0.05) and service design (β = 0.418, t = 3.786, p < 0.001) have also positively and significantly affected organisational performance. Hence, H_1, H_{1a} and H_{1b} are accepted.

To test the moderating effect of role of management accountant, interaction effects were computed through the product indicator approach for the reflective construct and the two stage procedure for the formative construct. The significance of the interaction effect was assessed using a bootstrapping procedure (5,000 resamples). This method was

Table 5: Path Coefficient After Bootstrapping

Path	Beta Score	Sample Mean (M)	Standard Error	t-Value	p-Value	Results
TQM → OP	0.522	0.512	0.094	5.560	<0.001	Accepted
CF → OP	0.207	0.211	0.098	2.101	<0.050	Accepted
SD → OP	0.418	0.426	0.110	3.786	<0.001	Accepted
TQM * ROMA → OP	0.005	0.014	0.091	0.059	0.953	Rejected

Note: TQM = Total Quality Management, OP = Organisational Performance, CF = Customer Focus, SD = Service Design, ROMA = Role of Management Accountant.

validated by Hair et al. (2011) as an applicable way to evaluate path models with latent variable interactions. The R^2 increases from 0.312 (main effect model) to 0.314 (interaction effects model). Although the R^2 value is increased, the path coefficient ($\beta = 0.005$, t = 0.059, p = 0.953) is not significant, indicating that the role of management accountant as a moderator between TQM and organisational performance is not substantial. Hence, H_2 is rejected.

6. Discussion and Conclusions

This study focuses on the service industry of Malaysia, one of the country's largest economic contributors. It employs RBV theory to conceptualise the relationship between TQM, organisational performance and the role of management accountant.

Previous studies (Joiner, 2007; Al-Dhaafri et al., 2016; Meftah Abusa & Gibson, 2013) which looked at the association between TQM and organisational performance had been inconclusive. In the context of our study, the results reveal that TQM and organisational performance has a significant relationship ($\beta = 0.522$, t = 5.560, p < 0.001). Our finding is observed to be similar to those of Chong and Rundus (2004), Psomas and Jaca (2016) and Idris (2011). Earlier studies (Chenhall, 1997; Abdullah, Uli, & Tari, 2008) have also emphasised that TQM provides the opportunity for organisations to improve their competitiveness. Likewise, Kober et al. (2012) and Amir and Reiche (2013) have also concurred that TQM should improve the quality of services and bring a range of performance benefits to organisations. Following the RBV theory, this study has considered TQM as a resource that has a positive influence on the competitive advantage of service

organisations in Malaysia. Thus, this implies that TQM is an effective management accounting practice which can improve the organisational performance of the service industry. The two features of TQM practice that are examined in this study comprise of customer focus and service design and our results show that customer focus and organisational performance have a significant positive association (β=0.207, t=2.101, p<0.05). Thus, it can be inferred that customer focus is a key determinant contributing to organisational performance. This has been endorsed by prior findings (Meftah Abusa & Gibson, 2013; Sadikoglu & Olcay, 2014; Psomas & Jaca, 2016).

The outcome generated is beneficial to companies because customer focus facilitates the in-depth understanding of the requirements and expectations of customers, hence it would facilitate companies in figuring what needs to be done to address customer satisfaction. The results of our study are consistent with the findings of Tsang and Antony (2001) who revealed that the most vital practice of TQM was customer focus, particularly for service companies. This is because customer service is often an issue that needs to be addressed satis-factorily within service companies so as to increase their market shares.

The findings of this study has also demonstrated that service design affects organisational performance significantly (β = 0.418, t = 3.786, p < 0.001). Service design is also the main factor for explaining organisational performance. The results of our study are consistent with those of Kaynak (2003) and Baird et al. (2011) who noted that effective service design is an important differentiation tool to enhance performance, and to gain a competitive edge. Flynn et al. (1994) also mentioned that service design leads to an increased market share while Calabrese and Corbò (2015) stated that good service design may likely determine business excellence. Nonetheless, our findings are contradictory to those of Brah et al. (2000) and Talib et al. (2013). In the context of Malaysia, service design positively influenced the organisational performance of the service companies in our study.

In looking at the moderating effect of the role of the management accountant, our findings reveal that the management accountant's role did not moderate the association between TQM and organisational performance (β = 0.005, t = 0.059, p = 0.953). It is observed that even without the role of the management accountant, TQM significantly affects organisational performance. This finding is contradictory to those of Cockrell and Meyer (2012), Hoque and Alam (1999), and Sharma et al. (2010) who uncovered that the management accountant is one of the

quality team members who participated greatly in TQM practices of the firms as part of his/her tasks.

Previous studies (Hamilton-Smith & Morris, 1993; Margavio et al., 1995) have also reported that management accountants could assist the management in the implementation of TQM and other quality strategies. This was confirmed by Fowler (1999), Sharma et al. (2010) and Hoque and Alam (1999). Furthermore, Cockrell and Meyer (2012) had also stated that management accountants have the specific qualification to function in TQM practices besides enabling organisations to achieve greater organisational performance. Conversely, our study reveals that the role of the management accountant did not significantly affect the association between TQM and organisational performance. The contradictory findings found in the current study could be due to several reasons. First, the role of the management accountant is measured by five strategic roles – advisor, business analyst, business partner, value creator and decision enabler. The traditional role of the management accountant as an individual who collected, interpreted and disclosed financial data to the organisation is not considered. Secondly, based on the descriptive analysis revealed in this study, it is observed that the mean score for the role of the management accountant is 3.528, which is considered as marginal. The marginal role of the management accountant did not enhance the association between TQM and organisational performance; hence, there is no moderating effect on the association found in this study. Third, the results derived from our study may be attributed to the lack of control imposed on the size of the organisations that participated in this study. Although the effect of the role of management accountant is not significant, the increase in R^2 values of 0.312 (main effect model) to 0.314 (interaction effect model) implies that the role of the management accountant in the service companies of Malaysia can be greatly improved. The strategic roles of the management accountant in the service companies of Malaysia may contribute positively towards the association between the TQM and organisational performance.

7. Implications and Directions for Future Research

From the outcomes generated, a few implications can be derived. First, the results of this study could be used to facilitate the application of TQM in service industries as a measure to enhance organisational performance. It seems apparent that organisations need to focus on

customer needs and demands in order to remain sustainable and successful. One way of achieving this is by integrating customer feedback into the service design (Mahmood et al., 2014). Based on this, it is recommended that managers of service organisations maintain a high level of customer focus, and service design practices within their organisations. Second, the results of this study can help managers of service organisations to determine the roles to be played by management accountants, as these roles may affect the success of TQM. The management accounting profession is evolving, and changing in terms of the role and tasks due to environmental changes such as globalisation, intense competitiveness, and advances in information technology followed by organisational factors, such as product/service quality, new management styles, and customer expectations (Zainuddin & Sulaiman 2016). Third, the revelation of the significant association between TQM practices and organisational performance proved that service companies need to concentrate on these dimensions if they want to improve their performance through adopting TQM. The necessity of service firms to compete, and to sustain themselves in today's global economic environment that is challenged by economic recession highlights the value of the practical contributions of this study.

In addition, this study has also made several theoretical contributions by providing empirical evidence concerning TQM practices in service organisations in Malaysia. Despite being identified as one of the prominent sectors that is likely to contribute towards Malaysia becoming a developed economy in 2020, the service sector in this country, in terms of TQM has not received much attention from research. A review of the literature has shown that by giving the service industry the relevant attention, valuable proof of the benefits of TQM can be derived. This can be utilised by service managers to improve their service quality. The findings of this study may help to overcome the limited studies conducted on the service industry and its adoption of TQM in Malaysia.

This study has several limitations. Firstly, this study is restricted to the investigation of the effect of two features of TQM practices on organisation performance – customer focus and product/service design. We also applied only one theoretical framework of the RBV as our framework. Future studies could focus on other aspects of TQM practices and theoretical framework. Secondly, this study only examined the service industry. As such, the findings cannot be generalised to other industries. Therefore, future research may consider looking at other service and manufacturing industries. Thirdly, this study has

used the questionnaire survey as a method for data collection. The test of causality was not conducted in view of the cross-sectional data utilisation. Hence, analysis on the time sequence of the relationship between the variables could not be performed. Future research could use the longitudinal research design to provide the causation evidence. To have a better understanding of the issues involving TQM practices, an in-depth interview including case studies could be conducted as alternative data collection approaches.

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Impact of Leadership Style and Demographic Profile on Accounting Student Performance – The Case of Academic Administrators and Faculty Members in the Philippines

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ABSTRACT

Manuscript type: Research paper

Research aims: This study aims to investigate how leadership styles and the demographic profiles of academic administrators and faculty members can influence the university students' performance in the Board Licensure Examination for Certified Public Accountants (BLECPA).

Design/Methodology/Approach: The leadership styles of the academic administrators and faculty members are measured through the

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Bass model. Data are collected from 94 academic administrators and faculty members attached to 35 top performing colleges/universities in the 2017's BLECPA.

Research findings: The results suggest that the leadership styles and the demographic profiles of the academic administrators affect the students' performance in the BLECPA.

Theoretical contribution/Originality: This study extends on the existing literature by providing empirical evidence which highlight the relationship between academic leadership styles and universities' performance in the BLECPA. This outcome focusses on universities in and outside of Manila. This study uses a more sophisticated estimation technique to address the limitations of the classical linear regression model (CLRM). Moreover, this study evaluates leadership by incorporating both the administrators and the faculty members' leadership styles. In that regard, this study differs from existing studies which had focused on a single source of leadership.

Practitioner/Policy implications: The findings of this study inform universities on how leadership style and the characteristics of academic administrators, and faculty members may influence universities' performance. Policies can be formulated based on the findings of this paper, particularly those offering accountancy education for both the Philippines and the ASEAN region.

Research limitation: This study does not take into account the differences of the organisational structure and the number of staff and students of the universities.

1. Introduction

Despite the fact that the board licensure examination for certified public accountants (BLECPA) had "not conceptually changed for over 40 years" (Tan-Torres, 2017), the national passing rate over the past few decades seemed to show no improvement. This is amidst an era of more schools offering the Bachelor of Science in Accountancy (BSA) program[1] when compared to its first conceptualisation (Jeffrey, 2015). However, it has been well documented by the Professional Regulatory Commission

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[1] Only 300 schools offered BSA during the first inception of the BLECPA in 1927. Today, the number of schools offering BSA is near 500 (PRC, 2017).

(PRC), that certain schools had remained consistent in terms of having reputable performances in the said board exams. With these top performing schools serving as benchmarks, many initiatives, both at the school and national level, have been made to increase the quality of the accountancy education in the Philippines. The end goal is to increase the number of qualified accounting practitioners in the region. Nevertheless, such initiatives have been slow to take effect in the Philippines. A report by the Philippines Regulation Commission (PRC) stated that the passing rate of the BLECPA had dropped, and had been inconsistent from the year 2011-2017 (Professional Regulatory Commission, 2017) (Appendix 1). When compared with top performing universities globally, the performance of the local universities seemed significantly lower. This phenomenon appears to be an acute problem for the Philippines. The poor performance of the graduates in ten CPA Board examinations for five consecutive years could lead to the gradual phase-out and closure of the accountancy programmes. Given this situation, universities in the Philippines offering the accountancy programmes need to closely monitor the performance of their BSA graduates in the BLECPA.

Various initiatives have been initiated by the universities, professional organisations and national government agencies to improve the quality of the accountancy programmes in the Philippines. One good example is the "modular" programme offered by the De La Salle University. This is reminiscent of a "school-led innovation" which is characterised by two weeks' intensive subject modules. Another example is the restructuring of the BLECPA curriculum by the Board of Accountancy (BOA), moving from seven subjects to six so as to match the board examinations' curriculum requirements as published by the Commission on Higher Education (CHED). Recently, the Supreme Court in *Antiola vs. UST*[2] had held that faculty members at the tertiary level should possess, or be in the process of attaining, at least a master's degree while academic administrators need to be holders of a doctoral degree (Tan-Torres, 2017). This imposition is another initiative of the government to upgrade the quality of the teaching and administrative staff of tertiary institutions.

A study by Oxford Economics (2012) found that tomorrow's demand for global skills would be substantially different from those of today, and this means that countries throughout the world need

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[2] G.R. No. 211273 dated 18 April 2018.

to adapt to the environmental changes quickly in order to sustain the employability of their country's graduates. Without doubt, these global changes will influence the required skills of business professionals, including professional accountants. According to the World Bank, improving the quality of education is the most important for sustaining development in the ASEAN region (World Bank Group, 2014), among which, the Philippines has the highest minimum number of units to obtain in order to be awarded an accounting degree. Despite the stringent requirements, there is still a current shortage of certified accountants in the country. Former Professional Regulation Centre (PRC) chief Leonor Rosero attributed this phenomenon to the declining quality of higher education due to sub-par academic institutions in the Philippines. Nonetheless, she proposed that this be improved through the efforts of school administrators by enhancing the quality of their programmes (Santos, 2008).

Directing, motivating and leading academic institutions to success is a heavy responsibility, thus it relies on the quality of the academic leadership. Leadership is an enigmatic concept to study because it is difficult to understand how one leader is different from another and can take an institution to success while another fails to do so. Literature (Koh, Steers, & Terborg, 1995; Sirisookslip, Ariratana, & Tang, 2015; Okoji, 2015) has, to some extent, provided some directions on this, showing how the inherent qualities (i.e. demographic profile) of academic leaders may be able to bring universities to success. This is accomplished when the leader is able to motivate both the faculty members and the students towards successfully performing their tasks, which are measured against a pre-set of established standards. The decisions made by such academic leaders are relevant to many aspects of their universities' operations. Needless to say, these decisions are vital to the universities' success. Of course, sound decisions are mostly based on logic, experience and information, but what many people do not know is that these decisions are also inherently motivated by the individual's characteristics (Jones & Bekhet, 2015; Bell, Rvanniekerk, & Nel, 2015).

Consequently, it is important to investigate how these individual qualities (i.e. "demographics") can be translated into the different leadership styles, as defined by McGregor (1960). The results obtained from our study were then qualified with those of past studies so as to uncover these inherent leadership characteristics, and to see how these can be translated into academic success, which is measured by the students' performance. Correspondingly, our study also attempts to

make three significant contributions to the body of literature related to academic leadership and school performance.

First, most studies (e.g. Day, Gu, & Sammons, 2016; Huguet, 2017) had focussed on the leadership behaviours of individuals who hold certain posts, such as principals, heads of department, programme coordinators and deans. This tendency was based on the belief that such individuals were the primary source of leadership direction in educational institutions. Yet, scholars such as Kythreotis, Pashiardis and Kyriakides (2010), and Balwant, Birdi, Stephan and Topakas (2018) argued that the academics who served as course instructors could also influence an educational institution's direction, goals and effectiveness. It was highlighted that in the education setting, individuals who could be described as leaders, were not confined to those who held positions such as principals, curriculum developers, school administrators and others. Individual teachers, instructors or lecturers can also influence students by guiding, structuring, and facilitating activities and relationships. They can lead students through mentoring, coaching or supervising them on research projects, classroom activities, assignments and others. Although this has been highlighted, little has been done to examine the effects of faculty members' leadership styles on the classroom. In our study, we investigate the leadership behaviours by incorporating the perception of the administrators (e.g. head of department, programme coordinators and deans) and the faculty members (lecturers). This is based on the assumption that a class of students is a small organisation that may be studied, and managed by following the organisational and manage-ment theories.

Second, this study also incorporates a novelty concept by including a control variable that was not included in previous studies (Abenes, Corpus, & Oblea, 2017). We extend the sample size by surveying schools not only within Metro Manila, but also those outside Manila. The data would thus allow us to incorporate a new control variable, i.e. the differences in location.

Third, this study makes use of the state-of-the-art estimation technique to control for possible errors when using more primitive models. The linear regression model (CLRM) was used in the Abenes et al. (2017) study which clearly presented some problems with inferences. Gujarati and Porter (2009) had mentioned that one of the CLRM assumptions require the dependent variable to be continuous. In our study, a more sophisticated estimation technique was introduced to control for the potential violation of the CLRM assumptions.

The remainder of this paper is organised into five sections. Section 2 presents the literature review, Section 3 discusses the conceptual framework developed, Section 4 describes the methodology employed, Section 5 discusses the empirical findings and Section 6 brings the paper to conclusion.

2. Literature Review and Hypotheses Development

2.1 Leadership

Leadership and its concept of empowerment towards those who are being governed is a strong factor that determines the performance of an individual. Review of evidence (Leithwood, Louis, Anderson, & Wahlstrom, 2004) suggests that successful leadership can play a highly significant role. Yet, its role in improving students' learning and performance is often underestimated. Leadership is not just about the ability to empower an individual to succeed in a certain task, but also the ability to continuously provide guidance and improvement for other individuals. With that, many questions arise with regards to the right leadership which ought to be implemented within institutions.

Universities, as organisations, need to be managed like all other organisations (Van Deventer, 2007) because universities have specific work to perform. These work, henceforth, duties and responsibilities, are allocated to respective individuals so as to fulfil the universities' specific organisational aims. Such organisational aims are the creation of a culture of lifelong learning and teaching where improved learner performance becomes a result (Ndlovu, 2009). Within the educational system or setting, Ndlovu (2009) had investigated the impact of management on learners' performance, using schools in Nongoma, as a case study. The three schools that were selected in the case study represented the best performing school, the average performing school and the worst performing school for Grade 12, for three consecutive years. The study concluded that management behaviours do affect learners' performance. This is because the highest level of performers are managed with appropriate management and leadership style. The findings further revealed that a school cannot operate in isolation; it needs the support of other stakeholders and outside assistance.

Yahya (2015) found that leadership styles played an important factor in improving the academic performance of students. It appears that the principal's leadership style, gender, educational qualification

and experiences had a contributing influence on the school's performance as well as the students' academic achievements. The study posited that an empowering environment is key to creating a more efficient and effective learning environment for students. Karadağ, Bektaş, Çoğaltay and Yalçin (2015) utilised the random effects model to analyse the relationship between academic leadership and student performance among 28,964 subjects. They observed that leadership had an ambiguous effect on the students' performance whereas the distributive and transformational leadership style had the most substantial effect. Robinson, Lloyd and Rowe (2008) noted that academic leadership indeed impacted on student outcome. Specifically, they found that instructional leadership had three to four times larger impact, relative to transformational leadership.

In the Philippines setting, Abenes et al. (2017) designed a study which examined how the various qualities of the academic administrators affected faculty effectiveness in Metro Manila. It was observed that the administrator's age, location, tenure and academic accomplishment had an effect on faculty effectiveness. This was quantified through student satisfaction surveys. A review of the literature further showed that besides Abenes et al. (2017), there has been a lack of studies investigating the effect of leadership style of school administrators on academic performance within the Philippines. Abenes et. al. (2017) had focussed on how academic leadership affected faculty effectiveness by using student satisfaction survey but despite their findings, the outcome was not comprehensive since student satisfaction do not reflect how well the students performed. In supporting this view, some scholars highlighted that it is difficult to attach student satisfaction with educational outcome since satisfaction is a reflection of the students' perception on their educational experiences, further fuelled by feelings, emotions and subjective attitudes (Summers, Waigandt, & Whittaker, 2005; Baron & Corbin, 2012).

2.2 Demographic Profile

Bell et al. (2015) argued that due to the emergence of a younger and highly educated workforce, a leader who can deeply connect with them is a necessity. Three demographic profile variables were proposed: gender, age and education. This is because these have been found to have a significant correlation with the leadership effectiveness of local government managers. Focussing on the impact of gender on leadership

style, Saeed et al. (2013) contested that male leaders were more flexible in solving organisational problems and desires while female leaders tended to follow procedures in accomplishing their tasks. The influence of gender on leadership styles was attributed to the individuals' inborn leader qualities (Amin & Kamal, 2016).

In a much earlier study, Eagly and Carli (2003) provided empirical evidence to support the relationship between gender and leadership styles. They asserted that female leaders tended to use more transformational leadership; they tie employees' performance to rewards. Thus, it was deduced that this was because the female characteristics tended to be more nurturing and sensitive to others' feelings, as compared with male characteristics. In another study, Wong, Cummings and Ducharme (2013) indicated age as a factor contributing to the different leadership stance. They argued that older employees had different leadership styles as they had worked in different workplace environments. Younger leaders, in comparison, had different practices since they tended to be more energetic and likely to explore new things. Similarly, Oshagbemi and Ocholi (2013) reported that younger leaders were more comfortable in a fast-changing environment; they were more willing to take risks and they like to consider new approaches. Younger leaders were also found to have more energy and the capacity to stimulate and inspire others; they often seek out new opportunities and they tended to work vigorously in developing and promoting themselves. These attributes have been found to transform organisations as a result of the different leadership styles when compared to the older leaders. The role of educational background on leadership styles have also been documented in a few studies (Thu, Pillay, & Mergler, 2017; Barbuto & Burbach, 2006; Sawati, Anwar, & Majoka, 2013). It appears that the leaders' educational background affects their ability in dealing, communicating and tolerating their employees. Managers with higher educational degrees are often more competent; they are also more in-clined to practice the transformational leadership styles (Thu et al., 2017).

2.3 Bass Leadership Model

To understand the role of leadership styles on performance, this study employed the Bass leadership model. It has the ability to use the full range of leadership behaviours to separate the effective leaders from the ineffective leaders (Barbuto & Burbach, 2006). Bass' full range of leadership model explores the different types of leadership which are

presented through the use of the Multifactor Leadership Questionnaire (MLQ). It distinctly separates the leadership traits into three styles namely, transformational, transactional and laissez-faire leadership. The different leadership style focusses differently on how functional power grows and is balanced (Bass, 1990).

2.3.1 Transformational, Transactional and Lasseiz-faire Leadership

Transformational leadership theory suggests that leaders inspire not just their members but also the whole organisation, to work their best for the benefit of the organisation and its goals. This type of leader asks the members to go beyond their goals, from self-interest to the interest of the organisation while also challenging them to go beyond what is expected of them, and to exhibit professionalism, creativity and high moral standards (Dyck & Neubert, 2009). Bass (1985) extended on the leader's influence towards its members. He mentioned that trust and honesty are the main traits that members look for in a leader. Members tend to follow a leader who motivates them and vastly improves their performance as well as their relationship.

Transactional leadership, on the other hand, focusses on the basic management process of controlling, organising and short-term planning. Transactional leadership is more concerned about the maintenance of the normal flow of operations. Transactional leadership is based on the idea that employees will perform based on the amount of reward they will receive. If there is non-performance of the task, a punishment will follow. The exchange between leaders and their followers takes place to achieve routine performance goals. Transactional leadership has its underpinnings on the role of supervision, organisation and group performance, and the exchanges between leaders and their subordinates. The leader's primary role is to create structures to portray what is expected from their subordinates and the repercussions of achieving or not achieving such.

The laissez-faire leadership refers to a leadership style that allows people to work on their own. Under this leadership, the leaders usually avoid making decisions, and may give teams the complete freedom to perform their tasks and to set their own deadlines (Asrar-Ul-haq & Kuchinke, 2016). Thus, the laissez-faire leadership is considered as a passive leadership style, recognised as the least effective leadership style, and rarely supported by subordinates or followers in the organisations (Avolio & Bass, 2004).

3. Research Framework and Hypotheses Development

Based on the literature review, this study developed a conceptual framework with the formulated hypotheses indicated in Figure 1.
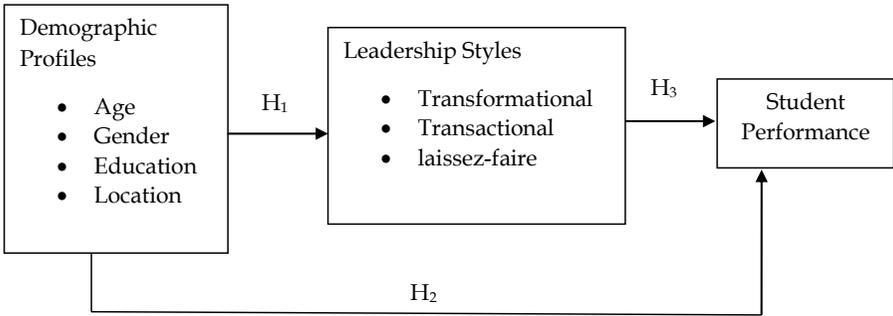
Figure 1: Research Framework

Various studies (Saeed et al., 2013; Wong et al. 2013; Thu et al., 2017) have documented the impact of the demographic profiles of leaders, both in terms of leadership styles and performance outcomes. Women, for example, have noted to demonstrate a passive avoidant leadership or the laissez-faire leadership. In some cases, they have also been recognised and identified as leaders who worked collaboratively with their followers and subordinates. Within the context of the academic environment, it was found that older teachers tended to use conventional methods of teaching; they were ill-prepared to implement new curriculum, and this affected student performance (Ahumada, 2016).

In Vietnam, Thu et al. (2017) found that educational leaders with postgraduate degrees (Master and Doctorate) tend to exhibit transformational leadership. This is possibly because many of these leaders were also trained in developed countries where transformational leadership is commonly practiced. This finding indirectly highlights that the training location may also have an influential impact on leadership style. In a much earlier study, MacNeil, Prater and Busch (2009) indicated that schools in the developed countries tended to have open climates, where students and faculty members or course instructors were comfortable in expressing ideas and suggestions. This may also be interpreted as an open environment which encourages a better leadership style. Based on these arguments, it is hypothesised that:

H$_1$: The leadership styles can be explained by the demographic profiles of the academic leaders, in terms of age, gender, education and location.

H$_2$: The universities' performance of the BLECPA can be explained by the demographic profiles of the academic leaders in terms of age, gender, education and location.

A number of existing literature (Bronkhorst, Steijn, & Vermeeren, 2015; Newland, Newton, Podlog, Legg, & Tanner, 2015; Kim & Yoon, 2015) support that different leadership styles lead to different outcomes. Among these, transformational leaders have been found to positively influence employees' self-efficacy, motivation and creativity, which in turn lead to improved firm performance (Bronkhorst et al., 2015, Newland et al., 2015, Kim & Yoon, 2015). In contrast, transactional leaders helped to instil job satisfaction among the employees through the reward system (Epitropaki & Martin, 2013; LePine, Zhang, Crawford, & Rich, 2016). Although many scholars associate the laissez-faire leadership with negative outcomes (Bass & Avolio, 1994; Judge & Piccolo, 2004), some empirical works (e.g. Ryan & Tipu, 2013) showed otherwise. These studies considered the laissez-faire leadership style as one that promotes self-control, empowerment and innovation. In this regard, it was interpreted as one showing respect and trust to members so as to facilitate employees' development. Within the context of the academic setting, it is expected that different leadership styles would promote different student performance rates. For instance, a faculty member/course instructor who encourages critical thinking strategies may encourage the development of creative thinking. In comparison, a faculty member/course instructor who builds trust provides students with the opportunity to try something new. Based on these arguments, it is hypothesised that:

H$_3$: The universities' performance of the BLECPA can be explained by the leadership styles of the academic leaders.

4. Methodology

A quantitative survey was engaged to collect the primary data (Appendix 2). We used the Multifactor Leadership Questionnaire (MLQ) which was developed by Bass and Avolio (1994), to evaluate the leadership style of the academic leaders and to subsequently categorise them as: (1) Transformational, (2) Transactional, or (3) Laissez-faire. The

questionnaire contains 45 items and responses are based on the 5-point behavioural scale (1 – Not at all, 2 – Once in a while, 3 – Sometimes, 4 – Fairly often, and 5 – Always). This instrument has been widely used and is highly reliable and well validated. The Cronbach's α for the MLQ was reported to be 0.96 (Avolio & Bass, 2004) and the instrument had also been implemented within the area of leadership practices in various contextual settings (e.g. Thu et al., 2017; Asrar Ul-Haq & Kuchinke, 2016). In this regard, the instrument is considered as effective. The MLQ is a self-reported questionnaire. To proxy for the students' performance, we used the performance of the responding schools in the BLECPA for the period 2012-2016. Data were then collected from two different sources. This helped to reduce the problem of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

The target population for this study comprised academic administrators and faculty members from the top 50 higher educational institutions located in Luzon Island. These institutions offer the accountancy programme, as ranked by the PRC. We focused on Luzon Island because it represents the largest and the most populous island in the Philippines; it is also the centre of the country's economic and political interactions, where the capital city of Manila is also located.

Prior to data collection, an invitation letter was sent to the management of the institutions to seek permission to conduct the study. Of the 35 universities approached, only 19 responded positively. Following this, we then identified the academic administrators and the faculty members involved in the accountancy programmes. The academic administrators were represented by the Deans, Deputy Deans, department heads, managers and directors of the schools whereas the faculty members were confined to those teaching the accountancy courses. The estimated sampling size at the time of study was 100, hence a total of 100 questionnaires and cover letters were despatched to the samples through the human resource manager of the participating universities. They were all given one week to complete the questionnaire. The returns only comprised 94 usable questionnaires which comprised 31 academic administrators, and 63 faculty members. Majority were males with a Master's in Business Administration (MBA) qualification and only 27 per cent of them have doctoral degrees. Table 1 illustrates.

The data in this study conforms with the CHED Memorandum Order No. 2 Series of 2011 which states that college professors must at least have a Master's degree, and administrators must be a doctorate

Table 1: Demographic Profiles

Demographics	Frequency	Percentage (%)
Designation		
Academic Administrators	31	33
Faculty Members	63	67
Gender		
Females	38	40
Males	56	60
Academic Background		
Doctoral Degree	25	27
Master in Business Administration	55	58
Undergraduate Degree	14	15
Location		
Outside Metro Manila	50	53
Metro Manila	44	47
Age		
Below 40 years old	69	76
40 years old and above	25	24

degree holder (Commission on Higher Education, 2011) This information is also consistent with the Supreme Court's Ruling (SC) which had implemented that all college professors should have a minimum of a master's degrees *Antiola vs. UST*[3].

The ages of the administrators followed a normal distribution which is concentrated on 40 years as the mean and this seemed to resonate with what Bonetta (2011) had said, the average time for a faculty member to become an academic head would be around 10 years. From the perspective of the faculty, it appears that many of the faculty members are either young (in their twenties) or old (in their sixties). This outcome is also consistent with what had been observed by the former chairman of the Philippines Statistics Authority (PSA). He had said that the average age of a teacher in the primary and secondary level in the Philippines is concentrated on the right tail of the age distribution. This

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[3] G.R. No. 211273 dated 18 April 2018.

means that teachers in grade schools and high schools are, on average, old (PSA, 2013). Our data, has thus highlighted the difference between college professors, and the primary and secondary school teachers.

5. Results and Discussion

5.1 Descriptive Analysis

This study performed the descriptive analysis so as to analyse the mean and standard deviations of the constructs used. Table 2 illustrates.

Table 2: Descriptive Statistics

Constructs	Mean	Std. Dev.	Min	Max
Leadership Styles				
Transformational	4.16	0.42	2.9	4.8
Transactional	3.01	0.37	2.42	3.75
Laissez-fare	1.53	0.53	1	2
University Performance				
BLECPA	49.11	7.39	19.02	90.42

From Table 2, it can be seen that transformational leadership is the most common leadership style observed in the educational setting of the Philippines which offer accountancy programmes. In comparison, the laissez-fare leadership style is the least practised. This finding implies that leaders in the educational settings in the Philippines are more inclined towards adopting transformational leadership practices. Thus, it can be inferred that the academics in this country stimulate or activate their subordinates/students by expressing positive emotions and interactions. Although transformational leadership is considered a fairly new concept in emerging countries, this outcome derived from the current study suggests that majority of these academics had been trained overseas and mainly in western countries like Australia, the US or the UK. It is believed that these academics have more opportunities to interact with other individuals, such as the supervisors, course-instructors or programme coordinators, hence, inspiring them to practise transformational leadership. This exposure offers a new perspective which also influenced the Filipino leaders in ways where they too are able to motivate their subordinates and students. This result is in line with previous empirical

works conducted by Thu et al. (2017), in the Vietnamese educational context. Although the current study found that the transactional leadership is less practised than transformational leadership, there is evidence to suggest that it is also a common practice in the Philippines university setting (Abenes et al., 2017). This phenomenon occurs due to the educational system, the academic leaders and the faculty members who are bounded by the structures and procedures imposed by the country's formal rules and policies. This situation creates the need for the leaders to maintain a consistent standard and to cultivate a constructive relationship with the faculty members and the students. This study shows that even though the academic leaders and the faculty members act as superiors, they still provide support through recommendations instead of directives, unless a violation of norms is evident.

5.2 Regression Analysis

(i) Estimation Procedure

Given the nature of the data we had collected, we also used the cross-sectional data estimation for analysis. The general model structure is as follows:

$$y_i = \beta_0 + \sum_{i=1}^{n} \beta_i x_i + u_i \tag{1}$$

where u_i is the stochastic disturbance term, y_i is the dependent variable, x_i is the set of n independent regressors, β_i's are the slope coefficients of the regressors, and β_0 is the intercept. When all of the assumptions of the CLRM are satisfied, the OLS is the best linear unbiased estimator (BLUE) over all other estimation methods (Gujarati & Porter, 2009). In our study, however, the dependent variable is bounded (i.e. y_i is within the range [38,69] for the McGregor measure) which is clearly a violation of the CLRM assumptions, due to the potential estimate falling outside the identified range.

Making estimations of the discrete choice model with the usual OLS, i.e. linear probability model, is not our best option due to various harmful results, such that the estimated outcome of y_i may not be within the observed range of the gathered data (Gujarati & Porter, 2009; Greene & Hensher, 2010; Greene, 2011). Because of this, variations to the qualitative response models such as the multinomial logit and the ordered probit techniques were used. These techniques require a more

advanced estimation procedure, known as the maximum likelihood estimation (MLE) (STATA 12.0). Thus, it was used to assist all our estimation procedures.

The log likelihood function is in the following form:

$$\ln L = \sum_{i=1}^{n} \ln \int_{-\infty}^{\infty} \left[\prod_{t=1}^{T_i} P(Y_{i,t} = y_{i,t} \,|\, x_{i,t}'\beta + u_i) \right] f(u_i) du_i \tag{2}$$

where $P(.)$ may be in logit or probit form (Greene, 2011). These log-likelihoods are what we maximised in order to produce estimates for the parameters. Note however, that several studies (Pagano, Panetta, & Zingales, 1998; Datta, Iskandar-Datta, & Patel, 2000) had claimed that the more appropriate methodology to be used is the probit model, but the logit model was able to provide the natural logarithm of the estimated odds ratio, which was in the following form:

$$L = \ln \left(\frac{\text{Prob}(y_{i,t} = 1)}{\text{Prob}(y_{i,t} = 0)} \right) \tag{3}$$

The difference between the logit and the probit methodology is determined by how these models define $P(.)$. The logit model uses the cumulative distribution function (CDF) of the logistic distribution while the probit model uses the CDF of the standard normal distribution. Both functions (i.e. $\alpha + \beta x$) would take any number, and rescale it to fall between 0 and 1, through a theoretical model that transforms the function into a probability distribution. Hence, any function can be linked to yield a predicted probability through a "link function". Gujarati and Porter (2009) had however, noted that the choice over the other method is sufficiently arbitrary, so we checked to see if both models produced the same result in terms of the relationship of each regressor to the dependent variables. Gujarati and Porter (2009) further explained that both models yielded similar inferences, so we used both models to check for robustness. It was noted that the resulting coefficients in both the logit and the probit model had to be adjusted in order to produce a sensible analysis. Given the discussion above, we thus arrived at the final estimable models shown below:

$$LeadershipStyle_i = \beta_0 + \beta_1 Age_i + \beta_2 Gender_i + \beta_3 Education_i + \beta_4 Location_i \tag{4}$$

$$Performance_i = \beta_0 + \beta_1 LeadershipStyle_i \tag{5}$$

Equation 4 allows us to determine what demographic factors would affect an academic leader's leadership style. The estimated beta coefficients for the intercept refer to the log odds of an academic administrator having a certain leadership style, given his/her age, gender, educational status, and location. Equation 5 allows us to determine whether the demographic profile of the academic leaders have a significant effect on their leadership style. This intertwined set of equations are reflected in the research framework, wherein the demographic profile affected the academic leadership style while the latter affected the performance.

(ii) Results

The hypothesis stating that the demographic characteristics of the academic administrators have an effect on their leadership style was accepted. There was statistical evidence to show that age was an important determinant of leadership style. This occurs when following Bass' full range of leadership framework both for the logit and probit regression. We observed that the sign was negative and this implied that the younger administrators leaned toward the transformational style of the leadership spectrum. This outcome is consistent with previous works conducted by Wong et al. (2013), and Oshagbemi and Ocholi (2013). Our current result is expected because younger people tend to be more flexible; they also tend to have more energy to stimulate and inspire other people when compared to their older counterparts. The younger leaders also carry more serious life goals which also impact their awareness of the importance of obtaining awards and promotions, which is not noted in the leaders above the age of 60. We further found that the location of the academic leader was another strong factor that influenced their leadership style. This finding may be due to the fact that the Philippines' education system is undergoing changes at every level, hence it seems that more people from within and outside Manila are becoming more aware of the relationship between leadership style and faculty and student performance. The findings of this study are consistent with those of previous studies (Mohammed, Othman, & Silva, 2012; Jones & Bekhet, 2015; Francis, 2017). We found that gender was associated with transactional leadership, and that transactional leadership was practiced more by female leaders. This outcome thus indicates that within the Philippines' educational setting, female leaders tend to reward their followers, whether subordinates or students, when they have performed as expected. Female leaders also tend to point out errors and shortcomings when followers fail to do as expected. In

that regard, the hypothesis stating that academic administrators and faculty members' leadership style has an effect on student performance is supported. In discussing the impact of the three types of leadership styles on students' performance, this study found that academic leaders who displayed characteristics that were reminiscent of the three types of leadership styles also seemed to have a positive relationship with students' performance. This shows that the students' performance is equally affected by the three leadership styles. Thus, it is inferred that students' performance is affected by leaders who not only emphasise on policies, rules, human needs, political and shared vision and values, but also leaders who inspire and direct them. Our findings hence conform to those of Bolman and Deal (2017) who had indicated that the leadership style of administrators had positively affected school performance. Leithwood et al. (2004) also validated the findings of this study as seen by the fact that more obligations rested on the principals to display higher instructional leadership characteristics. This can be accomplished through proper and strategic interventions which are aimed at effective teaching and learning, thereby creating a positive reinforcement towards the academic performance of the students.

While it appears that the students' performance had been influenced by the types of leadership styles, we also found strong evidence which implied school performance had also been enhanced by leaders from the transformational spectrum. This finding is not surprising, since transformational leadership tend to include inspirational motivation, intellectual stimulation and individualised consideration, all of which are aimed at empowering the campus communities towards thinking critically and creatively. This phenomenon also encourages the campus communities to be critical towards self, work and the academic institution, at large. For this to occur, a supportive environment that promotes the articulation of thoughts, feelings and experiences is vital. In the context of the educational setting, followers seemed to prefer that leaders have the characteristics of friendship, collaboration and collegiality, particularly leaders who are humble, honest, credible, respected and able to mentor. This seems to prevail in the current study which involves the Philippines, whose culture is that of the collectivistic norm. Because of this, it is possible that the outcome may be different for the business setting, where leaders are selected based on specific competencies (Guerrero, Teng-Calleja, & Hechanova, 2018).

From the demographic profiles, our regression results reveal that only age is negatively and significantly related to academic performance

Table 3: Regression Results

Hypotheses	Dependent Variables	Independent Variables			
		Age	Gender	Education	Location
Hypothesis 1: Leadership Style and Demographic Profile	Transformational	-0.008**	0.135	0.016	-0.299**
		-0.216**	0.403	0.001	-0.0224
	Transactional	-0.037**	0.927*	0.241	-0.864
		-0.018**	0.492	0.1	-0.474*
	Laissez Fare				

		Age	Gender	Education	Location
Hypothesis 2: Student Performance and Demographic Profile	BLECPA Passing Rate	-0.227***	-3.632	0.8097	3.97

		Transformational	Transactional	Laissez-faire
Hypothesis 3: Student Performance and Leadership Style	BLECPA Passing Rate	12.26**	9.246*	7.538
		5.26*	3.938*	5.657

Note: Numbers in the first line per box are the coefficient estimates for logit model while numbers in the second line are the coefficient estimates for the probit model. *** for significant at the 1 per cent level, ** for significant at the 5 per cent level, and * for significant at the 10 per cent level.

(p < 0.01). This means that the younger the age of the administrator, the higher the probability of passing the BLECPA. Here, it had increased by 22 per cent. This finding conforms to literature (Nasir, 2012) which had confirmed that there was a significant relationship between the demographic profiles of academic leaders and students' academic achievements. Younger professors and faculty members are perceived more positively by students when compared to older academic leaders. The reason is because the former are more relatable, more dynamic and more energetic. We believe that this outcome could be due to the fact that the academic administrators and faculty members of the Philippines, at the time of this study, were younger in age. This finding is thus, another research area to be investigated for future studies since the age factor may change over time.

6. Implications and Conclusions

This study has attempted to examine how the demographic profiles of the academic leaders influence their leadership styles, hence the students' academic performance, in the context of 19 of the Philippines top performing business institutions located in Luzon Island. As mentioned earlier, this study offers three valuable contributions. Undoubtedly, different leadership styles promote different developments, and this is even more distinct between academia and the business world. There is no one-size fits all kind of approach simply because different organisations including country contexts, have different cultural values.

In terms of academic contribution, this study appears to be one of the first attempt to understand the impact of demographic profiles, and academic leadership style on students' academic performance. This study incorporated both the academic administrators, and faculty members' perspectives, hence, it adds to the existing literature on leadership styles. In addition, this study also engages a more robust technique for analysis, the logit and probit models, which are found to control the possible errors better than the linear regression model.

This study provides evidence to suggest that no singular style of leadership is best suited for academic institutions even when the agenda is to enhance the quality of the accounting education. Overall, the findings of this study have shown that students' academic performance are derived from the various dimensions of the leadership style, hence, it is deduced that for organisations such as universities to attain the

goals they have established, the leaders who are also the academic administrators and the faculty members, need to be, first and foremost, exposed to the different leadership styles. The leaders also need to be willing to apply the most appropriate leadership style that is contingent to the situation at hand. While all the three leadership styles are found to be important in harnessing the students' academic performance, it is also safe to assert that there are differences in the strength of the leadership styles which can create different impact on academic performance. Our findings suggest that the students' performance can be enhanced further through the support of the academic administrator and the faculty members who have high levels of energy, strong beliefs in their followers or students, and are ready to stimulate their followers' creativity and intrinsic motivation. Under such types of leadership, a trustworthy relationship between the leaders and the followers can be built. This is expected to encourage a free flow of new ideas. Faculty members who also serve as transformational leaders may help to accelerate the students' engagement with the subject taught. Under transformational leadership, students are given more freedom in their own learning, thus they were more likely to retain their knowledge and immerse themselves in the course contents. This would make them better at assimilating ideas and developing their critical thinking skills. In this regard, it is not surprising that students would be able to perform well. Based on the findings of this study, it is recommended that the faculty members/course instructors promote transformational classroom leadership to enhance learning and creativity.

The students' class participation also needs to be emphasised. Through an open climate of learning, classrooms can be transformed into a learning ground where the students are academically engaged, personally know their course instructors, and they also feel safe and secure in exchanging ideas. Such an environment is supportive and non-threatening.

The proper interpretation of this study can be used to develop a better set of university regulations. Policy makers can formulate rules and regulations based on the findings of this paper where the need is to make the learning ground as conducive as ever for universities in the Philippines offering accountancy education. This is crucial if the graduates' employability is of concern. The accountancy education has been described as one that is very demanding and stringent. Since there has been reports highlighting the poor passing rates in the BLECPA examinations, it is opportune that academics, practitioners, curriculum

designers, policy makers and university administrators take the quality of the accountancy education into consideration. Evidently, one of the ways to resolve this issue is to invest in academic leaders who have the qualities mentioned in the findings above. Doing so can increase the supply of the CPA's in the region. This issue can also alert other ASEAN countries towards addressing the inadequacies affecting the ASEAN region, currently.

The results of this study informed universities that leadership style and their demographic profiles are indeed related and relevant when assessing school performance. Universities should incorporate the outcome derived from this study when formulating regulations and grooming academic leaders. Many measures of today's leadership are concurrent with the ones found in the current study. For the purpose of selecting the right leaders in support of the academic campus, the respective universities can formulate their own set of questionnaires, such as the one used in the current study as a means to evaluate the characteristics and profiles of their targeted subjects.

Our study is possibly an innovative step taken to narrow the research gap between academic leadership and academic performance. In line with the specific interest that we have taken, it is proposed that future research focus on non-academic administrators to see how their performance affect the institutions. Our findings have shown the importance of the differences of the localities of institutions (i.e. urban vs. rural) offering the accountancy programmes, among other demographic characteristics that controlled the leadership style of the administrators. With this in mind, we propose that this study be extended to the Visayas and Mindanao regions as well. In this study, we further deduce that more relevant considerations should be made for identifying the determinants of the university students' performance in the context of the Philippines. Other factors not yet included comprise: student aptitude, curriculum and the ratings of the universities by agencies. In addition, it is common knowledge that in the Philippines, only a handful of review centres and universities have been successful in maintaining consistent and satisfactory BLECPA results. Most of the institutions used in the current study were established ones (Professional Regulation Commission, 2017), hence future studies may consider using the not so well-established universities for comparison. This can add to the current findings so that more can be done to make the accountancy education in the Philippines more competitive globally.

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Appendices

Appendix 1
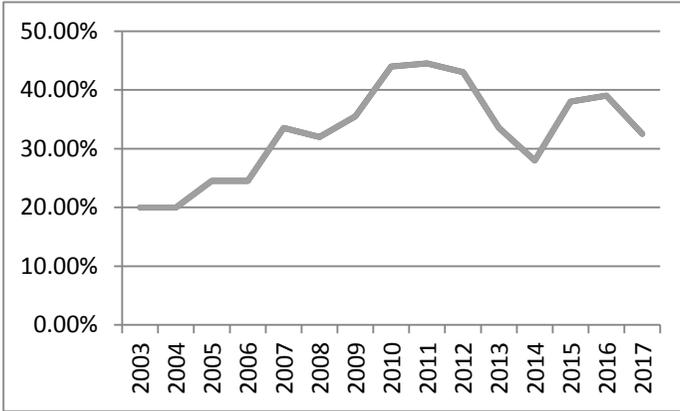
Figure 1: National BLECPA Passing Rates (2003-2017)
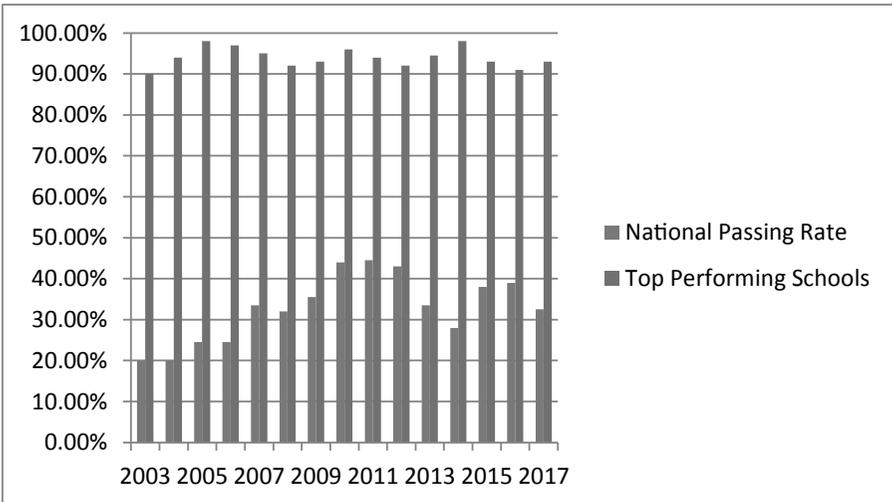
Figure 2: Top Performing Universities and National Passing Rate in BLECPA

Appendix 2

Survey Questionnaire

Information
Gender: _____
Age: _____
Marital Status: _____
Number of Dependents: _____
Primary Place of Residence: _____

Highest Degree of education completed? *If currently enrolled, highest degree received.*
- Associate degree (e.g. AA, AS)
- Bachelor's degree (e.g. BA, BS)
- Master's degree (e.g. MA, MS, MEd)
- Professional degree (e.g. MD, DDS, DVM)
- Doctorate (e.g. PhD, EdD)

Monthly (net) compensation income (*Choose range*):
- Less than P10,000
- P10,000 – P19,999
- P20,000 – P24,999
- P25,000 – P29,999
- P30,000 – P39,999
- P40,000 – P49,999
- P50,000 – P59,999
- P60,000 – P69,999
- P70,000 – P79,999
- P80,000 – P89,999
- P90,000 – P99,999
- More than P100,000

Academic Rank
- Professional Emeritus
- Full time Professor
- Associate Professor
- Instructor Assistant Instructor
- Lecturer
- Guest Lecturer

Please rate the statements from 1=Not at all, 2=Once in a while, 3=Sometimes, 4=Fairly Often, 5=Always

1	I provide others with assistance in exchange for their efforts.	1	2	3	4	5
2	I re-examine critical assumptions to question whether they are appropriate.	1	2	3	4	5
3	I fail to interfere until problems become serious.	1	2	3	4	5
4	I focus attention on irregularities, mistakes, exceptions, and deviations from standards.	1	2	3	4	5
5	I avoid getting involved when important issues arise.	1	2	3	4	5
6	I talk about my most important values and beliefs.	1	2	3	4	5
7	I am absent when needed.	1	2	3	4	5
8	I seek differing perspectives when solving problems.	1	2	3	4	5
9	I talk optimistically about the future.	1	2	3	4	5
10	I instill pride in others for being associated with me.	1	2	3	4	5
11	I discuss in specific terms who is responsible for achieving performance targets.	1	2	3	4	5
12	I wait for things to go wrong before taking action.	1	2	3	4	5
13	I talk enthusiastically about what needs to be accomplished.	1	2	3	4	5
14	I specify the importance of having a strong sense of purpose.	1	2	3	4	5
15	I spend time teaching and coaching.	1	2	3	4	5
16	I make clear what one can expect to receive when performance goals are achieved.	1	2	3	4	5
17	I show that I am a firm believer in "If it ain't broke, don't fix it."	1	2	3	4	5
18	I go beyond self-interest for the good of the group.	1	2	3	4	5
19	I treat others as individuals rather than just as members of the group.	1	2	3	4	5
20	I demonstrate that problems must become chronic before I take action.	1	2	3	4	5

21	I act in ways that build others' respect for me.	1	2	3	4	5
22	I concentrate my full attention on dealing with mistakes, complaints, and failures.	1	2	3	4	5
23	I consider the moral and ethical consequences of decisions.	1	2	3	4	5
24	I keep track of all mistakes.	1	2	3	4	5
25	I display a sense of power and confidence.	1	2	3	4	5
26	I articulate a compelling vision of the future.	1	2	3	4	5
27	I direct my attention toward failures to meet standards.	1	2	3	4	5
28	I avoid making decisions.	1	2	3	4	5
29	I consider each individual as having different needs, abilities, and aspirations from others.	1	2	3	4	5
30	I get others to look at problems from many different angles.	1	2	3	4	5
31	I help others to develop their strengths.	1	2	3	4	5
32	I suggest new ways of looking at how to complete assignments.	1	2	3	4	5
33	I delay responding to urgent questions.	1	2	3	4	5
34	I emphasize the importance of having a collective sense of mission.	1	2	3	4	5
35	I express satisfaction when others meet expectations.	1	2	3	4	5
36	I express confidence that goals will be achieved.	1	2	3	4	5
37	I am effective in meeting others' job-related needs.	1	2	3	4	5
38	I use methods of leadership that are satisfying.	1	2	3	4	5
39	I get others to do more than they expected to do.	1	2	3	4	5
40	I am effective in representing my group to higher authority.	1	2	3	4	5
41	I work with others in a satisfactory way.	1	2	3	4	5
42	I heighten others' desire to succeed.	1	2	3	4	5
43	I am effective in meeting organizational requirements.	1	2	3	4	5
44	I increase others' willingness to try harder.	1	2	3	4	5
45	I lead a group that is effective.	1	2	3	4	5

Organisational Power, Cohesiveness and Culture of Taiwan's Cosmetology Industry

Mingchang Wu, Deni Danial Kesa* and Chen-Ju Ko

ABSTRACT

Manuscript type: Research paper

Research aims: This study aims to examine the influential paths and internal relationships of organisational power, organisational culture and organisational cohesiveness.

Design/Methodology/Approach: The Analysis of Moment Structures (AMOS) is used to analyse the survey data collected from 222 practitioners who are from five cosmetology industries based in Taiwan.

Research findings: This study reveals that: (1) both organisational power and organisational culture individually creates significant impacts on organisational cohesiveness, and (2) organisational culture plays an important role as a mediator between organisational power, and organisational cohesiveness.

Theoretical contribution/Originality: This finding encourages the need for more positive organisational culture to be built to enhance organisational cohesiveness which contributes to the achievement and performance of both the individuals and the organisations at large.

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Practitioner/Policy implications: The interactive factors' effect overwhelms the single-factor effect, where individuals develop their organisational cohesiveness, even if each single factor functions separately. In reality, organisational culture needs to be the first priority factor to be developed in a workplace so as to build cohesiveness.

Research limitations/Implications: This study is conducted based on a fundamental assumption, hence the limitation lies in that the surveyed sample may or may not fully understand the question/items provided in the questionnaire. This could affect the level of honest answers revealed through their perceptions. Future studies may consider taking the qualitative approach.

Keywords: Cosmetology Industry, Organisational Power, Organisational Culture, Organisational Cohesiveness
JEL Classification: L66, L2, D91

1. Introduction

Organisational cohesiveness is referred to as a group's propensity to remain unified towards embracing the group's objectives, or needs. Literature (Banwo, Du, & Onokala, 2015; Loty, 2014) has emphasised on how organisational cohesiveness enhances organisational performance. Team members with high levels of cohesiveness support one another; they work together towards attaining shared goals and visions. They are also more likely to defend the group norms. Because of this, individuals within the group carry a sense of security and belonging, thus they experience lower levels of stress, and greater job satisfactions. This leads to higher productivity. In contrast, poor organisational cohesiveness leads to high turnover rate since members lack the sense of security and belonging. Organisational cohesiveness has become increasingly important in today's environment, considering that employees face numerous challenges in performing work tasks. This inevitably, creates high pressure at the workplace. Under this circumstance, most employees would feel exhausted and drained. To promote positive emotions among employees, and to enhance their relationships with each other, a positive workplace with harmonious cohesiveness is necessary. It helps employees to renew their energy. Today, organisational cohesiveness is one of the attributes of a contemporary workplace (Devaraj & Jiang, 2019) where the focus is more on teamwork. This idea is aimed at developing better organisational achievements and performance quality.

A small body of research (Scott & Davis, 2015; Tannenbaum, 2013) argued that the organisations' leadership behaviour may be a crucial factor affecting the development and maintenance of organisational cohesiveness. In the business world, executive administrators or leaders are habitually empowered, and trained with the legitimate, and coercive power of demonstrating a bureaucratic authority. This is also referred to as referent power or reward power; it is presented to human concerns as a step to enable them to fulfil organisational missions, thereby building organisational hierarchy (Flamholtz, 2001). These organisational powers are exhibited, and exercised for the organisation's effective adminis- tration as well as to reap business profits, an ultimate destination (Lucas & Baxter, 2012). Although the power exercised by the leader is regarded as a factor that may bring benefits to a team, such as the accomplishment of goals, and a more cohesive team environment, this relationship is argued to be non-linear, and that it could also be influenced by other factors such as organisational culture (Flamholtz, 2001).

In the workplace environment, some organisations perceive that power has an important effect on others, hence it is appropriate and motivating. Nonetheless, there are different types of power. Organi- sations that practice bureaucratic culture, for instance, may prefer leaders who have a strong tendency to control situations, dominate interactions, and exercise directive behaviours and close supervision (Hummel, 2014). In this type of organisation, leaders normally put employees in a dependent role, with specifications as to how they should complete their tasks. In contrast, organisations with a supportive culture have leaders who are more inclined in holding the co-workers or subordinates responsible for the end results, yet leaving them the liberty to execute their tasks in the way they chose to. In this regard, organisational culture could be a dominant factor influencing the effect of power as well as organisational cohesiveness.

Motivated by these arguments, the current study aims to contribute to the growing body of knowledge by examining the relationship between organisational power, organisational culture and organisational cohesiveness. More specifically, this study explores the direct effect of organisational power on organisational cohesiveness and organisational culture. It also examines the mediating effect of organisational culture on the relation between organisational power and organisational cohesiveness. To determine the interactions of these three variables, we will focus on the Taiwanese cosmetology industry which has been developing prosperously in the last three decades.

In Asian countries, such as Taiwan, leaders tend to exercise more power and to act with more authority when compared to western leaders (Aycan & Kanugo, 2002). In that regard, Asians are also more prone towards showing "authority" rather than "rules", and the person holding the power is trusted for his/her knowledge, expertise and achievement. In addition, some scholars (Liu, Chen, & Holley, 2017) argued that the management philosophy and organisational culture have been rooted in and guided by Confucianism, more specifically, the concept of *guanxi*, which is a social concept prevailing in the Chinese community. This concept relies on personal relationships, loyalty, and modesty of the in-group community (Silverthorne, 2004). This unique culture is expected to lead to a different appreciation and prevalence of organisational power and cohesiveness.

The remainder of this paper is organised as follows: Section 2 discusses the literature on organisational power, culture and cohesiveness done in the past so as to develop the hypotheses. Section 3 describes the research methodology employed. Section 4 presents the empirical results and Section 5 concludes.

2. Literature Review

2.1 Organisational Power

Organisational power is extensively implemented to ensure cohesive-ness, stability and administrative effectiveness in various organisations (Scott & Davis, 2015; Tannenbaum, 2013), and there are various definitions of organisational power. It could be defined as: (1) the ability the organisation possesses so as to utilise all the mandatory resources, such as financial support, position promotion and others, in favour of organisation development (Pfeffer, 2013); (2) the authority which superiors hold to exercise control over a person or a team for the fulfilment of job missions, and/or their personal intentions (Rong, Yang, & Ma, 2017; Ward, 2016); (3) the ability which team leaders embrace so as to influence the group of human resources to work towards achieving organisational objectives; and (4) the ability of superiors to manipulate other people's behaviours or attitudes (Lucas & Baxter, 2012).

Organisational power is the force, authority or ability stemming from organisations and/or organisational hierarchies which drive their members to accomplish something as requested, or to behave according to organisational core values. It is also interpreted and highly exploited

depending on the personality characteristics of those in authority and in settings where the power is utilised (Norris, 2009; Ward, 2016). Superiors can achieve both their own goals and those of their companies by recognising that organisations are essentially a system and structure of power, and thus knowing how to manage with power is important (Pfeffer, 2013). Scholars (Oc & Bashshur, 2013; Kelley, 2015) have recognised the wide varieties of power which can be exercised and exploited in organisations. These varieties of powers include coercive power, referent power, appreciative power, legitimate power and reward power. The exercise and implementation of these organisational powers are usually determined by their inherent climates, administrative strategies and members' performance. This means that these powers are highly correlated with their culture and the internal relationship among team members (Harper, 2015; Lawrence, Mauws, Dyck, & Kleysen, 2005).

2.2 Organisational Culture

In the business world, organisational culture is defined as a set of shared mental assumptions that guides the interpretation and action within organisations. This is achieved by defining the appropriate behaviours for various situations (Folch & Ion, 2009; Merton, Froyd, Clark, & Richardson, 2009; Slater, Olson, & Finnegan, 2010). Organisational culture provides the implicit, unwritten, or unspoken guidelines for members to follow. It reduces collective uncertainties and may even create social classism for organisational harmony (Cameron & Quinn, 2006; Chang & Lu, 2007).

Organisational culture is of three typical types: (1) innovative culture that supports the creation of new ideas and the implementation of these ideas (Kor & Mesko, 2013), (2) supportive culture that can promote a pleasant organisation advocating its members to work with friendliness and reciprocal affection (Nancarrow et al., 2013), and (3) bureaucratic culture where leadership provides a coherent, direct and certain instructions to the organisation's members so as to achieve its goals (Hummel, 2014). Different culture creates different effects on the organisation members. For instance, innovative culture will foster employees into proactively generating new ideas and innovative inventions; a supportive culture will increase comfort, trust and cohesion among the staff, as if they are family members while a bureaucratic culture will be more effective in an emergency situation, but it will create

resistance among its subordinates if it is run by well-connected but incompetent people (Hellriegel, Jackson, & Slocum, 2002).

2.3 Organisational Cohesiveness

Organisational cohesiveness is recognised as an essential element for team operations and organisational success (Rhee, Zhao, Jun, & Kim, 2017; Stashevsky & Koslowsky, 2006). It can be defined in a variety of ways such as: (1) a dynamic process which keeps team members united for organisational goals and team harmony (Al-Rawi, 2008), (2) a core component of organisational operation (Abid, Gulzar, & Hussain, 2015); and (3) an attractiveness with which an organisation attracts its members to stay in hunger, and to dedicate to the fulfillment of personal goals in the organisation (Chen, Tang, & Wang, 2009). Based on this, it can be concluded that organisational cohesiveness is the solidarity among organisation members and leaders with the subordinates. This fosters higher individual and collective motivation achievements.

Organisational cohesiveness is highly expected to: (1) inspire members' recognition to their organisations with obedience, in accordance to organisational decrees (Al-Rawi, 2008), (2) invigorate organisational members' loyalty in order to decrease employees' turnover rate (Sun, Ayoun, & Calhoun, 2013), and (3) encourage all members to dedicate themselves to the organisation with mutual accreditations, and core values (Liu et al., 2017). Organisational cohesiveness not only plays the imperative role to reciprocally attract team members, but also to enhance the core values for organisational operations (Stashevsky & Koslowsky, 2006) as well as effectively encourage members to fully cooperate for organisational goals. Organisational cohesiveness also contributes to individual missions graced with dignity, and harmony, besides increasing individual performance, and organisational achievements (Banwo et al., 2015). Due to organisational cohesiveness, leaders and team members are devoted to enhancing organisational cohesiveness for a pleasant employment environment, and reciprocal productiveness (Harhara, Singh, & Hussain, 2015).

2.4 Hypotheses Development and Research Framework

The impact of organisational power on organisational cohesiveness has been studied (Banwo et al., 2015; Hatch, 2018). Leaders may use organisational power to lead the whole team in achieving organisational

goals, or they may use their directive behaviour to supervise and control team members closely so as to ensure that they focus strongly on one common target. This type of organisational power is noted to be more effective when the subordinates are less matured in terms of motivation and performance, and so, less productive. In other cases, leaders may practice the appreciative power where they demonstrate their affection towards subordinates' preferences, needs and welfare, thereby providing a psychologically supportive environment to ensure cohesiveness. Under such conditions, we expect that employees would demonstrate cohesive behaviours in task completion. Based on these arguments, it is hypothesised that:

H₁: Organisational power is positively related to organisational cohesiveness.

Organisational cultures are not uniform nor static; it continuously changes and evolves over time (Weick & Quinn, 1999). A changing culture means changing people's minds, behaviours and attitudes. Some scholars (e.g. Schein, 1992) have highlighted the role of organisational power in determining and changing organisational culture. It has been mentioned that change in organisations cannot be made by focusing on its culture directly. Indeed, the way leaders exercise their power on the employees may influence the changes of the organisational culture. For example, leaders who want to create a culture of bureaucracy are found to promote legitimate powers more since this focusses on a chain of commands, detailed structures and definitions, thereby ensuring more control. Similarly, an organisation that values innovative culture would be associated with referent power, and expert power. This is because under the innovative work culture, employees look to the superiors or leaders for knowledge or skills. Attention, respect and admiration of others, as practiced by leaders, would help to stimulate innovations (Dokko, Kane, & Tortoriello, 2014; Wang, Rodan, Fruin, & Xu, 2014). Based on these arguments, it is further hypothesised that:

H₂: Organisational power is positively related to organisational culture.

Organisational culture affects organisational cohesiveness through the establishment of actions, norms and the standard policies and procedures which guide the employees' action and behaviour (Shaner, Beeler, & Noble, 2016). For example, employees under the innovative and supportive organisational culture are found to be more risk tolerant;

they view the occasional failures as part of the learning process. Such an environment may be associated with organisational cohesiveness since employees under this culture feel more liberated in expressing their ideas and sharing information with others, in pursuit of organisational goals. Under this type of organisational culture, employees are expected to demonstrate more cohesive behaviours in completing tasks and in their interpersonal communications (Chen et al., 2009; Wendt, Euwema, & Van Emmerik, 2009). Based on these arguments, it is hypothesised that:

H$_3$: Organisational culture is positively related to organisational cohesiveness.

The current study argues that organisational power is important for organisational cohesiveness, and that organisational power and organisational cohesiveness might be influenced by organisational culture. Some organisational cultures may view and evaluate power and its effect as more important than other organisational cultures. Under the bureaucratic organisational culture, employees may perceive legitimate power to be more appropriate and motivating since it emphasised on giving the chain of commands, a detailed structure and definitions, thereby ensuring more control. When employees are strongly influenced by how leaders exercise their power, they may also develop positive evaluations of the leaders' behaviours. This would make them more cohesive and less likely to resist working as a team. In contrast, employees under the supportive culture may value appreciative powers more, and so be more willing to work cooperatively as a team, on the condition that they perceive the leaders to be sensitive to their needs and welfare. They, however, may resist to work as a team if they perceive the leaders to be dominant, and controlling their interactions and task completions. Based on these arguments, it is hypothesised that:

H$_4$: Organisational culture mediates the relationship between organisational power and organisational cohesiveness.

Based on the literature review and the hypotheses developed, the following research framework was formulated, as shown through Figure 1.

3. Methodology

This study is quantitative in nature. It uses the survey questionnaire to measure the variables which were adapted from previous literature. Organisational power was measured using 29 items which were
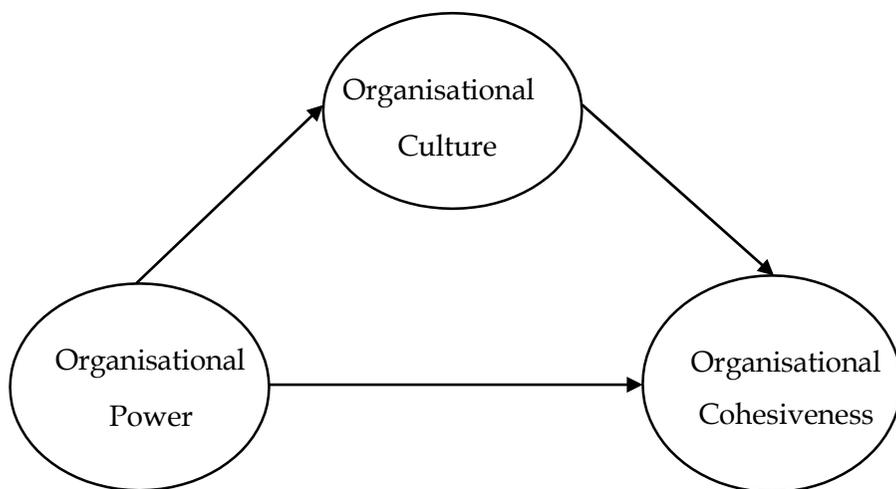
Figure 1: The Conceptual Framework

adapted from Kipnis, Schmidt and Wilkinson (1980). These items evaluate to what extent organisational leaders exercise their powers through coercive power, referent power, appreciative power, legitimate power and reward power. Based on Wallach (1983) and Wu and Lin (2010), this study adapted 12 items to measure organisational culture. These items evaluate the degree of organisational culture practised in terms of innovative, supportive or bureaucratic culture. Organisational cohesiveness was measured using 16 items which were adapted from Carron, Widmeyer and Brawley (1985). These items measure organisational cohesiveness in four domains which include interpersonal affinity, task cooperation, interpersonal attraction and operation adjust-ment. All the items used in this study were then translated by team researchers into Chinese, without changing the contents and meanings of the questions.

Prior to the actual data collection of the main study, a pilot test was conducted to establish the content and face validity of the instrument used. We randomly selected 120 samples from individuals/ employees who were engaged in the Taiwanese cosmetology industry. After two follow-ups and several emails, a total of 108 questionnaires were retrieved (90% returned rate), with six being excluded due to incompleteness. Of the 108 respondents, 33 per cent of them are located in Northern Taiwan, 35 per cent are from Central Taiwan, and 33 per cent are from Southern Taiwan. The pilot data collected are further

analysed for scales reliability using Cronbach's alpha. The results indicate that all the variables – organisational power, organisational culture and organisational cohesiveness carry values of 0.95, 0.79 and 0.79, respectively. Since these values are above the acceptable value of 0.6, it is safe to say that the items used in this study are reliable.

Following the pilot study, we further conducted a larger empirical data collection. The target population of this study are employees in the Taiwan cosmetology industry. In this study, we first drew a list of the cosmetology companies that were registered with the Taiwan trade organisation. Based on this list given by the Taiwan trade organisation, 120 companies were identified. The companies were requested to participate in this study and their selection was based on random numbers. Relevant information regarding the project was forwarded to the Human Resource (HR) managers. Prior to the data collection, permission to conduct the study was requested from the human resource manager and the top management of the company. Three hundred questionnaires were then distributed to the respondents, who were given time (one week) to complete the questionnaires before a follow up (Sekaran & Bougie, 2016). Two weeks following the distribution of the questionnaires, two follow-ups via telephone call were made. Of the 300 questionnaires distributed, 222 usable questionnaires were retrieved, indicating a response rate of 74 per cent. Table 1 depicts the demographic profiles of the respondents. Majority of the respondents are below 35 years old, possess diploma degree, work in the production section, and have less than 10 years of job experience.

4. Results

4.1. Reliability and Validity

This study performed the descriptive analysis so as to analyse the mean and standard deviations of the variables. The descriptive analyses reveal that the three variables are all highly valued components in the workplace (Organisational Power M = 3.81, Organisational Culture M = 3.85, and Organisational Cohesiveness M = 3.85). This study performed the measurement analysis by using an adequate model, with the coefficient of determination to another criterion for checking the adequacy to examine the convergent validity and the discriminant validity, shown in Table 2.

As depicted in Table 2, all the items that were tested fulfilled the threshold values (factor loadings > 0.4, average variance extracted

Table 1: Demographic Profile of Respondents

Demographic Characteristics	Frequency	Percentage (%)
Age		
Under 35	102	45.9
35-45	77	34.7
46-54	31	14.0
Over 55	12	5.4
Education		
College Diploma	112	50.4
Bachelor Degree	62	28.0
Post Graduate	5	2.3
Professional Qualification	43	19.3
Job Specialisation		
R&D	28	12.6
Business Administration	31	14.0
Marketing	28	12.6
Finance	18	8.1
Production Section	117	52.7
Job Experience		
Under 2 years	70	31.5
3-6 years	59	26.6
5-9 years	72	32.4
More than 10 years	21	9.5

Table 2: Convergent Validity Test

Variable	Factor loading	CR	AVE
A. *Organisational power*		0.94	0.75
A1: Coercive power	.65–.82	0.89	0.53
A2: Referent power	.74–.83	0.90	0.62
A3: Appreciative power	.70–.83	0.90	0.59
A4: Legitimate power	.63–.70	0.82	0.44
A5: Reward power	.65–.77	0.83	0.50
B. *Organisational culture*		0.76	0.52
B1: Innovative culture	.50–.69	0.73	0.40
B2: Supportive culture	.47–.84	0.76	0.47
B3: Bureaucratic culture	.38–.75	0.67	0.36
C. *Organisational cohesiveness*		0.81	0.52
C1: Interpersonal affinity	.54–.86	0.77	0.53
C2: Task cooperation	.50–.89	0.82	0.55
C3: Interpersonal attraction	.42–.80	0.71	0.39
C4: Operation adjustment	.34–.61	0.54	0.23

(AVE) > 0.5; composite reliability (CR) > 0.5). These results provide the evidence supporting convergent validity. Although there is an item under the interpersonal attraction, and bureaucratic culture that loaded below 0.4, this did not create an issue on convergent validity because it is a sub-construct which also have the AVE and CR values of more than 0.5 and 0.7, respectively. Therefore, the results demonstrate that the construct is able to describe greater than half of the variance of its variables. In this regard, we may conclude that the constructs are reliable and unidimensional (Bagozzi & Yi, 1988; Anderson & Gerbing, 1988).

The discriminant validity was then assessed using Fornell-Lacker's (1981) criterion. It appears that the square root of the average variance extracted (AVE) for a specific variable is higher than the correlation with other constructs, hence supporting the discriminant validity (Table 3). Based on the convergent and discriminant validity results, it could be deduced that all the items used are reliable and valid.

Table 3: Discriminant Validity Test

	Organisational Power (CR = .94, AVE = .75)					Organisational Culture (CR = .76, AVE = .52)			Organisational Cohesiveness (CR = .81, AVE = .52)			
	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4
A1	**.73**											
A2	.75*	**.79**										
A3	.66*	.75*	**.77**									
A4	.56*	.53*	.71*	**.66**								
A5	.46*	.56*	.66*	.51*	**.71**							
B1	.30*	.30*	.27*	.21*	.42*	**.63**						
B2	.42*	.41*	.46*	.34*	.58*	.36*	**.69**					
B3	.23*	.21*	.18*	.16*	.37*	.46*	.33*	**.60**				
C1	.46*	.46*	.44*	.36*	.49*	.27*	.64*	.28*	**.73**			
C2	.22*	.23*	.27*	.27*	.33*	.24*	.51*	.29*	.59*	**.74**		
C3	.32*	.21*	.32*	.28*	.32*	.26*	.36*	.23*	.42*	.54*	**.62**	
C4	.23*	.18*	.24*	.14*	.23*	.23*	.38*	.03	.33*	.29*	.40*	**.48**

Notes: *p < .05. A1: Coercive power, A2: Referent power, A3: Appreciate power, A4: Legitimate power, A5: Reward power, B1: Innovative culture, B2: Supportive culture, B3: Bureaucratic culture, C1: Interpersonal affinity, C2: Task cooperation, C3: Interpersonal attraction, C4: Operation adjustment. Values in bold represent the square root of AVE.

4.2 Structural Model and Hypotheses Testing

In the next step, the path model analysis was conducted using the structural equation modelling (SEM) to test the hypotheses. Figure 2 shows the path analysis between organisational power and organisational culture. The results indicate a positive significant path ($\beta = 0.67$, $p < .05$), thereby suggesting that organisational culture is influenced by organisational power. Hence, H_1 is supported. Among all the components noted in organisational power, it appears that appreciative power is the most important factor for organisational culture ($\beta = 0.90$, $p<.05$) while reward power is comparatively, the least concerned for organisational culture building ($\beta = 0.71$, $p < .05$).
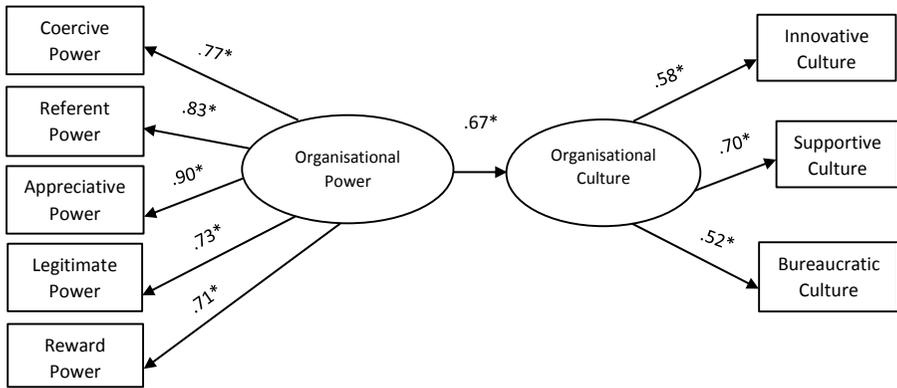
Figure 2: Path Analysis of Organisational Power on Organisational Culture

Figure 3 depicts the path analysis between organisational power and organisational cohesiveness. The statistics show that the relationship between the two variables is positively significant ($\beta = .92$, $p < .05$), showing that organisational power has an effect on organisational cohesiveness. Likewise, organisational cohesiveness is also highly influenced by appreciative power ($\beta = .92$, $p < .05$), but least affected by reward power ($\beta = .72$, $p < .05$).

In this study, organisational culture is also found to have a positive impact on organisational cohesiveness ($\beta = .88$, $p < .05$) (Figure 4). Supportive organisational culture is the most imposing factor for building positive cohesiveness among team members ($\beta = .82$, $p < .05$) whilst bureaucratic culture is the least ($\beta = .44$, $p < .05$). Among the components of organisational cohesiveness, interpersonal affinity seemed to be
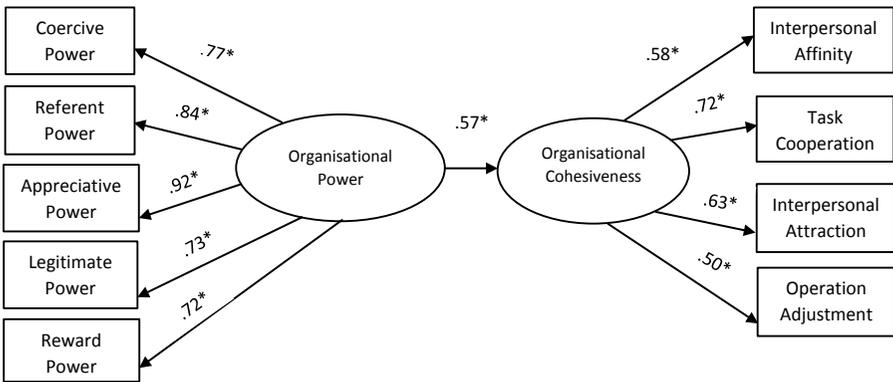
Figure 3: Path Analysis of Organisational Power on Organisational
Cohesiveness
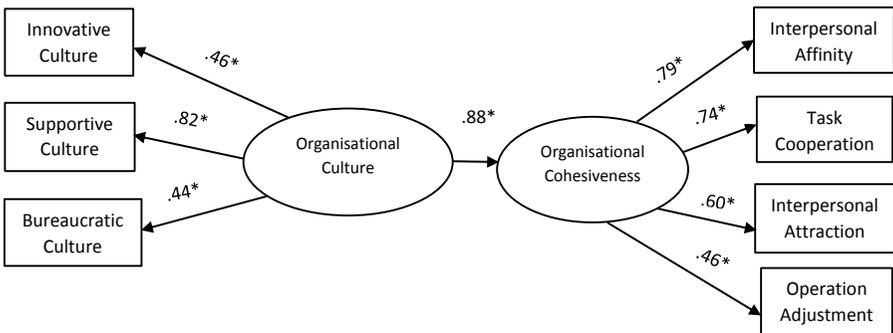
Figure 4: Path Analysis of Organisational Culture on Organisational
Cohesiveness

the most sensitive to cultural influences (β = .79, p < .05) whereas operational adjustment reacts the least, comparatively (β = .46, p < .05). Figure 4 illustrates.

This study has attempted to investigate the impact of organisational culture as a mediating factor between organisational power and organisational cohesiveness. As expected, the results reveal that organisational power does not directly impact on organisational cohesiveness in the realistic enterprise world (β = .00) (Figure 5). The analysis had shown that the significant main effect of organisational power and organisational cohesiveness (β = .92, p < .05) (Figure 3),
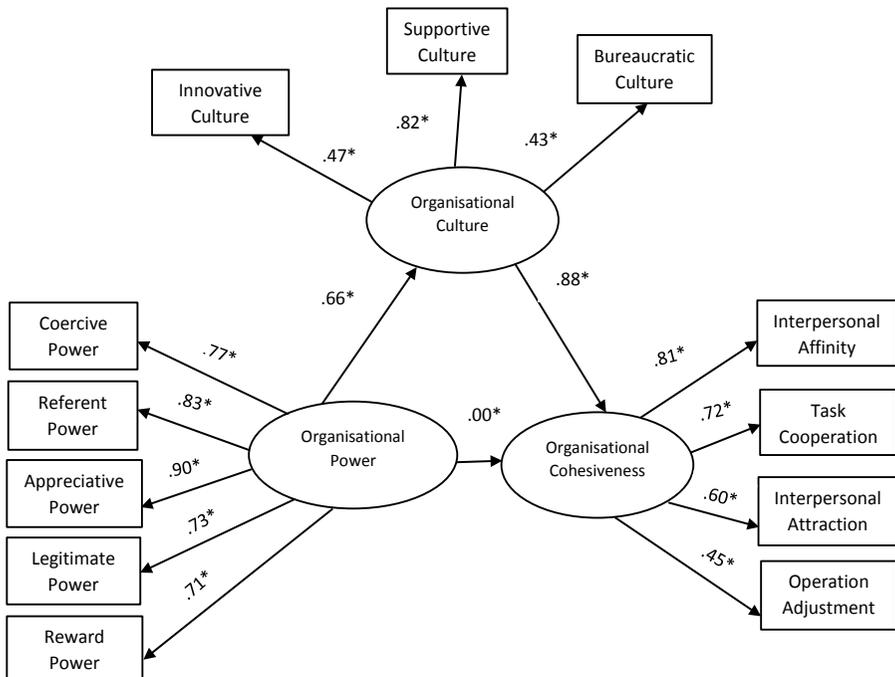
Figure 5: Examination of Mediating Role

became insignificant with the introduction of the indirect path through organisational culture. It appears that organisational power creates more impressive impact indirectly (through organisational culture) than directly on cohesiveness. Thus, organisational culture synthetically plays the mediator role in facilitating organisational power so as to influence its cohesiveness (Chen, et al., 2009).

5. Discussion

This study has explored the relations between organisational power and organisational cohesiveness in the context of the cosmetology industry in Taiwan. The observation of 222 employees working at the managerial level shows that the leaders exercise appreciative power considerably more than other types of organisational power. The observations also show that appreciative power is a pertinent factor influencing both the organisational culture and organisational cohesiveness. Conversely, the reward power component is the least important factor to influence

both the organisational culture and organisational cohesiveness. This finding is consistent with Jayasingam, Ansari and Jantan (2010) who had found that reliance on referent power was less effective for improving the individual's performance in this knowledge-based era. The present findings offer interesting insights which also support the idea that the *guanxi* culture prevalent in Taiwan, make the leaders behave more supportively as they learn to appreciate their subordinates. Under this type of organisational power, an individual is not treated like a machine. In fact, the individual is perceived as someone who is able to develop his/her own knowledge and competencies due to his/her curiosity, and social experience sharing (Loty, 2014). While reward power is expected to provide the best outcome with new communication technologies and more social networking-have produced calls for new organisation theories for these new realities since it helps to manifest needs' fulfillment (Pfeffer, 2013), it is observed that the Taiwanese employees' value for intangible inputs such as sharing ideas and information are more important. This is not a surprising finding because these values are perceived to be more effective in encouraging people to continuously learn, and to produce favourable outcomes, including innovative behaviours, teamwork, and overall performance (Fauth, Bevan, & Mills, 2009). Appreciation from the manager inspires the subordinate to feel free and empowered in making certain decisions. This result also shows that even though people in Asian countries are more inclined towards showing respect to leaders who act authoritatively (Aycan & Kanungo, 2002), this situation may have changed today, or it may no longer exist in Asian countries which used to be rooted in the *guanxi* culture (one where the personal relationship dominates any decision). The leaders tend to be more participative rather than directive, currently.

In this study, organisational power, culture and cohesiveness have been proven to be highly correlated with each other on the individual basis. This creates an impact on another variable pair-wisely and simultaneously also show a higher institutional collectivism, future orientation, a humane orientation and a lower level of assertiveness. This could cause an interactive impact on the other variables. Previous studies (Bortolotti, Boscari, & Danese, 2015; Rothaermel & Hess, 2007) had shown that organisational culture played an influential role on organisational cohesiveness. This study, hereby confirms that organisational culture fully mediate the relationship between organisational power, and cohesiveness, in the context of the cosmetology industry in Taiwan. Organisational culture is a set of shared mental assumptions which

guides the interpretation and action of members in the organisation by defining appropriate behaviours for various situations (Ravasi & Schultz, 2006). It also provides the implicit, unwritten or unspoken, guidelines for its members to follow in the organisation. This helps to reduce collective uncertainties, and may even create social classism for organisational harmony (Chang & Lu, 2007; Kim & Lee, 2006). In the realistic employment world, organisational power cannot directly influence its cohesiveness unless it inspires the organisational culture which activates its crucial role in the mediation effect. Organisational culture plays an important role in the Taiwanese context, where much of the culture revolves around relationships and friendships developed over time. This has led to a strong sense of members' loyalty towards their organisations. Therefore, it is not surprising that the organisational culture affected the relationship between organisational power, and organisational cohesiveness.

6. Conclusions and Implications

This study contributes to the existing literature on organisational behaviour and leadership by providing evidence to show the role of organisational culture as a mediator; it influences the interactions between organisational power, and organisational cohesiveness. This finding thus confirms that a constructive organisational culture is important for cohesive teams. This dominates the sustainability, and synchronisation of the organisation. Focusing on the cosmetology industry in Taiwan, this study has highlighted the transformation of organisational power in Asia. Where previously power was more authoritative or directive, today, it is a more supportive or appreciative power and culture. These types of organisational power and culture are important because they can develop positive attitudes towards team-work or cohesiveness.

The findings of this study suggest that leaders in the Taiwanese organisations need to exercise more open discussions and to offer more constructive criticisms in supporting their employees. Supportive managers are also perceived to be better leaders, hence they are more valued and respected by the Taiwanese employees, instead of those who are authoritative or give directives. Nonetheless, the directive or authoritative power may also be necessary for managers in order to perform his/her duties and tasks. Managers need to be aware of the effect such powers may have on organisational cohesiveness. Managers who limit their behavioural powers to a certain type or style only, may

cause negative organisational cohesiveness. This implies that Taiwanese managers need to change the way they exercise their power. In practice, appreciative power comes from providing a conducive environment to the employees to identify their success story within themselves, to create what their lives might be in the future, to design the effective ways of achieving their dreams, and to ensure that they would implement these so as to accomplish the organisation's objectives (Shuayb, 2014). Based on this, it can be said that a leader in a profit-oriented organisation should be able to provide a space for the employees to mutually and reciprocally discuss the strategies which can improve their performance, through self-development inquiry. A leader in an organisation should utilise his/her powers properly, with circumspection, and with humanity and care for developing a positive work environment and cohesive teamwork in organisations. Thus, organisational cohesiveness is reconfirmed to be vulnerable, and susceptible to its environmental factors, suggesting that the individual in power needs to maintain positive organisational operations and core values, based on social and humanitarian principles.

The findings of this study verify that Taiwanese organisations, particularly the cosmetology industry, should be more aware of the employees' freedom and happiness, as this will link to the team development. For foreign or international firms that wish to invest in Taiwan, they should also take into consideration the significant influence of the types of organisational power and culture. An employee who is unhappy with the way power is exercised in the organisation may affect the productivity outcome. Thus, managers need to give more focus to these issues so as to avoid any misunderstanding.

This study offers an insight into the interactions between organisational power, organisational cohesiveness, and organisational power in the context of the cosmetology industry in Taiwan. Despite the substantial contributions this study provided, this study is also constrained by some limitations. First, the samples of this paper are confined to the employees from the cosmetology industry. Future research may extend on the population by including those from different industries. Second is that this study is exclusive, it only focuses on the cosmetology industry and only one Asian country, Taiwan. Future research may conduct a comparative analysis of the different ASEAN nations since different Asian countries have different dominant cultures and values, which may have some impact on the values and perceptions of the people.

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Intellectual Structure and Scientific Evolution of Strategic Decision in the Field of Business and Management (1971 to 2018)

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ABSTRACT

Manuscript type: Review paper

Research aims: This study aims to analyse the published works of strategic decision in business and management which have had the greatest impact and evolutionary scientific trend within the intellectual sphere. Drawing from the integrative perspective, this study attempts to: (i) investigate the intellectual structure of earlier works so as to analyse the evolution of strategic decisions; (ii) examine the evolutionary scientific trends, and (iii) identify some implications for future research in this area.

Design/Methodology/Approach: This study generates its analysis based on the following bibliometric tools: (i) multidimensional data analysis using the Sankey Diagram, (ii) visual network and heat map analysis using the VOSviewer, and (3) strategic diagrams and evolution maps using the SciMAT. The methodology is based on the bibliometric technique of citation and co-citation analyses which are scientifically applied to a sample of 1,218 articles published in leading management and business journals over a period of 48 years, from 1971 to 2018.

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Research findings: The findings of this study plots the intellectual structure of the strategic decision as well as the evolutionary themes of the strategic decisions, for instance, decision-making and intuition (2000-2004), bounded rationality and uncertainty (2005-2009), decision support system and artificial intelligence (2010-2014), and decision-making and intuition (2015-2019). Overall, the results demonstrate the top scientific themes that were prevalent over a period of 48 years. The themes include: decision-making, intuition, rationality, behavioural economics, bounded rationality and investment decision.

Theoretical contribution/Originality: These findings provide valuable insights which demarcate the evolution of strategic decision as viewed through the synoptic-incremental continuum of rationality, intuition and political decision process. This study also contributes to the emerging role of behavioural economics on the strategic decision-making process in business and management. The results also highlight the role of the incremental decision process as an intuitive and political decision that can be interactively enhanced by decision-makers while under increased risk and uncertainty.

Practitioner/Policy implications: The results of this study suggest that decision-makers need to pay attention towards building and developing the incremental process such as intuitive and political decision along with rationality so as to optimise the decision outcomes.

Keywords: Strategic Decision, Decision-Making, Bibliometric Review, Business, Management, Intuition, Rationality
JEL Classification: M10, Y3

1. Introduction

The past few decades have seen the proliferation of research on strategic decisions (SD) in the field of business and management (Eisenhardt & Zbaracki, 1992; Elbanna, 2006; Ireland & Miller, 2004; Papadakis, Lioukas, & Chambers, 1998; Rajagopalan, Rasheed, & Datta, 1993). The concept of SD has proven to be an interdisciplinary field of research even from the beginning, whether from psychology, organisation or strategic management (Eisenhardt & Zbaracki, 1992; Papadakis et al., 1998). Given its relevance, research on SD seems to have flourished as the field of study evolved (Dean & Sharfman, 1996; Eisenhardt & Zbaracki, 1992; Fahey, 1981; Mintzberg, Raisinghani, & Theoret, 1976).

One of the most important agenda for advancing a particular state of the art in business and management is to synthesise the inter-disciplinary research findings (Zupic & Čater, 2015). In general,

researchers have commonly applied two traditional techniques to make sense of the earlier findings – the qualitative approach of a structured literature review (Schmidt, 2008; Zupic & Čater, 2015), and the quantitative method of meta-analysis (Eisenhardt & Zbaracki, 1992; Elbanna, 2006; Rajagopalan et al., 1993; Steptoe-Warren, Howat, & Hume, 2011). Typically, these studies are considered as having adopted the impressionist approach while their findings tended to reflect the subjective views of the authors (Ramos-Rodríguez & Ruíz-Navarro, 2004). Such findings, and their strategic implications were also instinctively determined by the authors, hence they often lack rigour and scientific legitimacy (Tranfield, Denyer, & Smart, 2003). In addition, those types of narrative literature review also carry some degrees of limitation especially those involving longitudinal cases conducted over a long period of time. Consequently, caution should be applied when interpreting the results, except for a few exceptions (Blanco-Mesa, Merigo, & Gil-Lafuente, 2017; Bragge, Korhonen, Wallenius, & Wallenius, 2010; Qaiser, Ahmed, Sykora, Choudary, & Simpson, 2017; Yu, Wang, Zhang, & Zhang, 2018). Thus far, existing studies have not been able to indicate with details, how research on SD had evolved over the years, which this study aims to address.

Reviews of literature had, to some extent applied the bibliometric technique as a quantitative approach to unravel the systematic and rigorous process of refining the quality of the review (Zupic & Čater, 2015). Over time, the bibliometric databases encompassing Scopus or Web of Science, and the various bibliometric tools such as the VOS viewer, and the SciMAT, had attracted much attention. These biblio-metric methods have been consistently employed to explore the intellectual structure of strategic management (Ferreira, Fernandes, & Ratten, 2016; Nerur, Rasheed, & Natarajan, 2008; Ramos-Rodríguez & Ruíz-Navarro, 2004; Ronda-Pupo & Guerras-Martin, 2012). Earlier bibliometric literature had mainly focussed on fuzzy decision making (Blanco-Mesa et al., 2017), multiple criteria decision making (Bragge et al., 2010; Yu et al., 2018), and the decision support system (Qaiser et al., 2017). Seminal bibliometric analyses have been used by scholars (Yu et al., 2018; Blanco-Mesa et al., 2017; Ferreira et al., 2016; Steptoe-Warren et al., 2011; Elbanna & Younies, 2008; Rajagopalan et al., 1993) to review literature on SD. However, digressing slightly from this, the current review aims to provide a perspective of the continuity, and a more updated and integrative point of view on the research on SD, as compiled from past studies.

In this regard, the objectives of this study are to: (i) investigate the intellectual structure noted in earlier studies so as to analyse the evolution of the research on SD; (ii) examine the evolutionary scientific trends; and (iii) identify some implications for future research in this area. The contributions derived from this study will help to address the literature gap left by earlier conventional literature on SD research, given the development that had flourished in this area. The questions this study aims to address are: What are the main scientific themes previously noted in SD literature? Who among the authors were the most persuasive? Which was the most dominant paper? and What was the most influential paper? The answers derived for these questions will contribute to a deeper understanding of the SD evolution. Such research profiling analyses have been extensively applied to enrich traditional literature reviews (Bragge et al., 2010; Zupic & Čater, 2015).

This study contributes to the field of business and management in a number of ways. First, it highlights the main clusters of SD. Second, it identifies the most highly cited scientific themes and their interdependencies in the given period within 48 years. These themes include: decision-making and intuition (2000-2004), bounded rationality and uncertainty (2005-2009), decision support system and artificial intelligence (2010-2014), followed by decision-making and intuition (2015-2019). Earlier bibliometric works had focussed on a short time period (Ferreira et al., 2016). Therefore, by analysing previous studies over a long-time frame, the gaps left unattended by previous bibliometric works would be able to shed light on the areas that need to be attended. Further, the findings would also be able to emphasise on how the SD research field may further evolve in the future (Ferreira et al., 2016).

The remainder of this paper is organised as follows. Section 2 examines the conceptual background of SD in the field of business and management. Section 3 discusses the bibliometric methods. Section 4 presents the findings of the analysis. Section 5 draws on the conclusion and Section 6 provides the recommendation for future research.

2. Strategic Decision: Conceptual Background

Prior to performing the bibliometric analyses, we need to identify the underlying concept of strategic decision in this study. In accordance with the works of prolific scholars (Bourgeois & Eisenhardt, 1988; Dean & Sharfman, 1993; Eisenhardt & Zbaracki, 1992; Elbanna, 2006; Kahneman & Tversky, 1979; Mintzberg et al., 1976; Papadakis et al.,

1998; Rajagopalan et al., 1993; Sadler-smith, Hodgkinson, & Sinclair, 2008; Simon, 1987), the ontological and epistemological differences in the selected publications were discussed using a synoptic-incremental continuum. Elbanna (2006) had reviewed seminal works on the SD process which include the rational, intuitive and political process.

The rational process focuses on how decisions can be divided into structured decision problems which can be solved by collecting and analysing specific information (Dean & Sharfman, 1993, 1996), applying certain analytic tools (Dean & Sharfman, 1996), generating alternatives and new aspects (Eisenhardt, 1989), defining goals and priorities as the decision criteria, and thinking about the alternatives and consequences (Dean & Sharfman, 1996). The intuitive process, in comparison, concentrates on the unconscious or subconscious processes and spontaneous manners by applying personal judgments (Khatri & Ng, 2000), gut feelings or hunches (Dane & Pratt, 2007; Hodgkinson, Langan-fox, & Sadler-smith, 2008; Hodgkinson, Sadler-Smith, Burke, Claxton, & Sparrow, 2009; Khatri & Ng, 2000), past experiences (Dane & Pratt, 2007), and heuristics (Bingham & Eisenhardt, 2011; Keats, 1991; Miller & Shapira, 2004). The political process looks at the social aspects when decision makers interact with one another in the social context by exercising their respective power and status so as to enforce decisions, to negotiate, or to bargain with others, to form alliances to effectuate certain interests, and to prioritise personal and group goals over organisational goals (Bourgeois & Eisenhardt, 1988; Dean & Sharfman, 1993, 1996; Elbanna & Child, 2007; Papadakis et al., 1998).

The rational perspective, also termed as the synoptic perspective, relies on the first stage of the rational process, whereas the incremental-political perspective focusses on the other two decision processes mentioned (Elbanna & Child, 2007). Most literature and practices tend to emphasise on the rational rather than the incremental-political perspective. Khatri and Ng (2000) help to explain. They had noted that many scholars and practitioners held the belief that intuitive processes were beyond rationality, hence out of the scope of scientific studies. In fact, "gut-feeling" is actually a sub-conscious derivative of the accumulation of years of management, experience and knowledge while the intuitive process is derived from personal experiences, tacit knowledge and learning (Baldacchino, Ucbasaran, & Cabantous, 2014; Brockmann & Simmonds, 1997; Isenberg, 1986; Khatri & Ng, 2000; Simon, 1987).

Based on this interdisciplinary study, it appears that much of the work in SD showed that there was no single discipline covering

all aspects of the strategic decision process. The decision process had moved from rationality to incrementalism such as intuition and political processes. Of the many authors who were involved with SD in business and management, the most influential were listed as Akinci and Sadler-smith (2012). They had dedicated their works to the "conscious and non-conscious process". In another study, Kahneman and Tversky (1979) dedicated their work to the "heuristics and biases", while Mintzberg et al. (1976), Eisenhardt and Zbaracki (1992), and Dean and Sharfman (1996) were the pioneers of the research on strategic decision. Following this, Epstein (1985) proposed the cognitive-experiential self-theory and Simon (1987) established the concept of bounded rationality. Klein (1998) focussed on "naturalistic decision-making", Sadler-smith and Shefy (2004) stressed on gut feelings and Dean and Sharfman (1993) followed by Elbanna (2006, 2018) emphasised on political decisions.

To deepen the diverse perspectives, there has been recourse to combining diverse fields such as the rational, intuitive and political decision process as an option to generate the integrative approach for the various domains of SD. Following previous seminal literature (Dean & Sharfman, 1996; Elbanna, 2006, 2018; Elbanna, Kapoutsis, & Mellahi, 2017), this study also applies the integrative perspective for addressing the coexistence of the synoptic and incremental perspective on the SD making process. To determine the scope and validity of the bibliometric analysis conducted, this study also applies the inclusion and exclusion criteria. They are systematically defined and then applied. The eligibility criteria was then utilised to identify the appropriate literature. In line with the conceptual background and objective of this study, the inclusion criteria was based on past articles found and indexed by Scopus. The detailed technique depicting this inclusion criteria was explained using key terms, and the Boolean logic. In contrast, the exclusion criteria were derived from the contexts of particular fields of business and management research looking at SD. Further to the criteria, the period of publication dating from 1971 to 2018 was also added so as to exclude other publications that go beyond the selected period.

3. Methods

3.1 Data Collection

Taking into consideration the objectives of this study, a descriptive analysis of the articles selected were also undertaken. These were compiled from the online database performed by Scopus, dating back

1971 to 2018. The multiple datasets comprised thousands of academic publications, and bibliographic datasets which included authors, citations and affiliations. These were gathered based on key terms, and the Boolean logic – "decision", "strategic decision", "decision-making", "rationality", "political decision", "intuition" or "political behaviour". These may appear either in the title, keywords or abstracts. As a matter of illustration, the current study was undertaken during the middle week of September 2018.

In this review, a total of 8,911 publications were generated. They were filtered by the field, "business and management" which served as the major area of this study. This led to a final total of 1,218 articles published in the period of 1971 to 2018. Data were collected using Scopus journals which were accessed through the University of Indonesia (http://remote-lib.ui.ac.id). Our search shows that the field of SD have attracted an increasing interest among researchers and practitioners. Figure 1 depicts the scientific evolution of SD which also highlights the total number of articles published. The figure also demonstrates that from the 1970s until the 1990s, publications were infrequent. An exponential growth was noted between 2005-2009 and 2010-2014 where publications peaked (314 and 348, respectively). The rate however, diminished in the subsequent period between 2015-2018 (only 281).

Table 1 summarises the most influential publication of SD in the field of business and management. In this section, the prolific articles
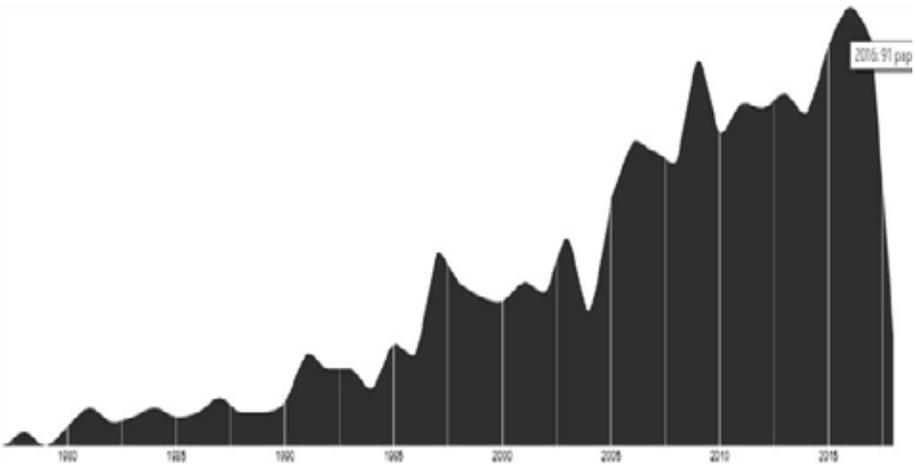
Figure 1: Number of Published Articles Each Year

Table 1: Most Influential SD Publications in Business and Journals Reviewed

Authors, Year	Title	Source title	C
Eisenhardt & Martin, 2000	Dynamic capabilities: What are they?	Strategic Management Journal	4981
Amason, 1996	Distinguishing the effects … conflict on strategic decision …	Academy of Management Journal	1124
Lumpkin & Dess, 2001	Linking two dimensions of entrepreneurial …	Journal of Business Venturing	829
Finkelstein, 1992	Power in top management teams …	Academy of Management Journal	741
Forbes & Milliken, 1999	Cognition and corporate governance: … strategic decision-making groups …	Academy of Management Review	736
Sarkis, 2003	A strategic decision framework …	Journal of Cleaner Production	687
Eisenhardt & Zbaracki, 1992	Strategic decision making	Strategic Management Journal	628
Swamidass & Newell, 1987	Manufacturing strategy, environmental uncertainty …	Management Science	615
Dean & Sharfman, 1996	Does decision process matter? …	Academy of Management Journal	449
Lant, Milliken, & Batra, 1992	The role of managerial learning and interpretation in strategic persistence …	Strategic Management Journal	449

Note: C = number of citations.

with the largest number of citations are presented and the distribution of the paper sources in the given selected periods are analysed.

Table 2 highlights the distribution periods. In the first period (1970-1989), it seems obvious that Long Range Planning (9.3%) had pioneered the SD field. This is trailed by Strategic Management Journal (9.3%), and the Journal of Management (6.7%), corresponding to 34.7 per cent of the total number of references encountered. In the second period (1990-1999), the Strategic Management Journal (7.4%) dominated, followed by Decision Support Systems (4.6%), Management Decisions (3.7%), and

Long Range Planning (3.7%), corresponding to 50.7 per cent of the total number of references encountered. In the third period (2000-2004), a dramatic change had occurred when Management Science (7%) emerged to be the top followed by Strategic Management Journal (4.2%), and International Journal of Production Economics (2.3%), corresponding to 62.4 per cent of the total number of references encountered. In the fourth period (2005-2009), Management Science (4.8%) remained at the top while the International Journal of Production Economics (3.6%) came second, trailed by the Journal of Business Research (2.5%), and then the Strategic Management Journal (2.2%), corresponding to 61.8 per cent of the total number of references encountered. In the fourth period (2010-2014), there was a substantial change. The International Journal of Production Research (3.2%) moved to the top, trailed by earlier prominent journals, such as Management Decision (2.6%), and the Journal of Cleaner Production (2.3%), corresponding to 69.5 per cent of the total number of references encountered. In the final stage of the years (2015-2018), the Strategic Management Journal (5%) had rebounded to be the top together with the Journal of Cleaner Production (5%), trailed by Technology Forecasting and Social Changes (3.6%), corresponding to 64.1 per cent of the total number of references encountered.

This dynamic change in the increased publications revealed the importance of the SD research, and its evolution over a long-time frame. In accordance with the previous literature on strategic management research (Ferreira et al., 2016; Ramos-Rodríguez & Ruíz-Navarro, 2004), our findings found that the Strategic Management Journal was the most powerful reference for disseminating knowledge in the field of SD research.

Table 3 illustrates the number of publications. It appears that the Strategic Management Journal dominated the race, with a total of 59 references (4,981 cited references), trailed by Management Decision (54 references and 1,124 cited references), Long Range Planning (39 references and 829 cited references), Decision Support Systems (29 references and 1,119 cited references), International Journal of Production Economics (29 references and 1,039 cited references), Journal of Business Research (29 references and 538 cited references), Technological Forecasting and Social Change (27 references and 538 cited references), Journal of Cleaner Production (25 references and 1,701 cited references), Journal of Management (21 references and 1,586 cited references), Decision Sciences (21 references and 1,034 cited references), Journal of Management Studies (17 references and 1,203 cited references),

Table 2: Top 30 Journals and Number of Published Articles in Each Year

Cited Journal	1970-1989 n = 75		1990-1999 n = 217		2000-2004 n = 213		2005-2009 n = 314		2010-2014 n = 348		2015-2018 n = 281	
Strategic Management Journal	7	9.3%	16	7.4%	9	4.2%	7	2.2%	6	1.7%	14	5.0%
Management Decision	–	–	8	3.7%	15	7.0%	15	4.8%	9	2.6%	7	2.5%
Long Range Planning	18	24.0%	8	3.7%	2	0.9%	4	1.3%	4	1.1%	3	1.1%
Decision Support Systems	1	1.3%	10	4.6%	3	1.4%	4	1.3%	6	1.7%	5	1.8%
International Journal of Production Economics	–	–	1	0.5%	5	2.3%	12	3.8%	3	0.9%	8	2.8%
Journal of Business Research	–	–	4	1.8%	3	1.4%	8	2.5%	10	2.9%	4	1.4%
Technological Forecasting and Social Change	–	–	5	2.3%	2	0.9%	4	1.3%	6	1.7%	10	3.6%
Journal of Cleaner Production	–	–	–	–	1	0.5%	2	0.6%	8	2.3%	14	5.0%
Journal of Management	5	6.7%	4	1.8%	2	0.9%	3	1.0%	2	0.6%	5	1.8%
Decision Sciences	1	1.3%	6	2.8%	6	2.8%	4	1.3%	3	0.9%	1	0.4%
International Journal of Production Research	–	–	–	–	–	–	3	1.0%	11	3.2%	4	1.4%
Journal of Management Studies	2	2.7%	3	1.4%	2	0.9%	5	1.6%	3	0.9%	2	0.7%
Journal of the Operational Research Society	1	1.3%	3	1.4%	4	0.9%	5	1.6%	2	0.6%		0.7%
Management Science	3	4.0%	2	0.9%	1	0.5%	5	1.6%	–	–	1	0.4%
Omega	3	4.0%	4	1.8%	2	0.9%	2	0.6%	1	0.3%	–	–
Journal of Business Ethics	1	1.3%	1	0.5%	1	0.5%	4	1.3%	3	0.9%	2	0.7%
Futures	–	–	2	0.9%	2	0.9%	3	1.0%	4	1.1%	1	0.4%
European Management Journal	1	1.3%	1	0.5%	3	1.4%	3	1.0%	2	0.6%	2	0.7%

Table 2: (continued)

Cited Journal	1970-1989 n = 75		1990-1999 n = 217		2000-2004 n = 213		2005-2009 n = 314		2010-2014 n = 348		2015-2018 n = 281	
Industrial Marketing Management	3	4.0%	–	–	1	0.5%	4	1.3%	3	0.9%	1	0.4%
International Journal of Technology Management	1	1.3%	6	2.8%	1	0.5%	4	1.3%	–	–	–	–
Organizational Behaviour and Human Decision Processes	1	1.3%	5	2.3%	1	0.5%	1	0.3%	2	0.6%	–	–
British Journal of Management	–	–	4	1.8%	2	0.9%	2	0.6%	1	0.3%	1	0.4%
IEEE Transactions on Engineering Management	–	–	3	1.4%	1	0.5%	4	1.3%	2	0.6%	–	–
Organization Studies	–	–	3	1.4%	1	0.5%	1	0.3%	2	0.6%	3	1.1%
Industrial Management and Data Systems	–	–	–	–	–	–	2	0.6%	3	0.9%	5	1.8%
Problems and Perspectives in Management	–	–	–	–	3	1.4%	4	1.3%	2	0.6%	1	0.4%
Organization Science	–	–	4	1.8%	1	0.5%	1	0.3%	3	0.9%	–	–
Information and Management	1	1.3%	4	1.8%	3	1.4%	–	–	–	–	1	0.4%
Benchmarking	–	–	–	–	3	1.4%	2	0.6%	1	0.3%	3	1.1%
Production Planning and Control	–	–	–	–	2	0.9%	2	0.6%	4	1.1%	1	0.4%
Other journals cited	26	34.7%	10	50.7%	133	62.4%	194	61.8%	242	69.5%	180	64.1%

Note: n = number of articles published in every period.

Table 3: Cited Journals, Index and Citations from 1971 to 2018

Cited Journal	n	SJR'17	H Index	C	C/n
Strategic Management Journal	59	8.01	232	10,569	179
Management Decision	54	5.36	209	915	17
Long Range Planning	39	1.71	81	649	17
Decision Support Systems	29	1.66	115	1,119	39
International Journal of Production Economics	29	2.40	141	1,039	36
Journal of Business Research	29	1.26	144	538	19
Technological Forecasting and Social Change	27	1.38	86	538	20
Journal of Cleaner Production	25	1.47	132	1,701	68
Journal of Management	21	6.46	176	1,586	76
Decision Sciences	21	1.38	93	1,034	49
International Journal of Production Research	18	1.43	107	266	15
Journal of Management Studies	17	3.80	145	1,203	71
Journal of the Operational Research Society	15	1.00	87	158	11
Management Science	12	5.36	209	1,210	101
Omega	12	3.52	108	352	29
Journal of Business Ethics	12	0.28	132	219	18
Futures	12	1.23	66	170	14
European Management Journal	12	1.26	84	157	13
Industrial Marketing Management	12	1.66	106	150	13
International Journal of Technology Management	12	0.41	48	55	5
Organizational Behaviour and Human Decision Processes	10	1.99	122	430	43
British Journal of Management	10	1.31	86	255	43
IEEE Transactions on Engineering Management	10	0.73	80	247	25
Organization Studies	10	0.02	120	239	24
Industrial Management and Data Systems	10	0.90	81	61	6
Problems and Perspectives in Management	10	0.14	14	11	1
Organization Science	9	5.50	196	810	90
Information and Management	9	1.63	135	208	23
Benchmarking	9	0.56	49	190	21
Production Planning and Control	9	1.26	61	138	15

Note: n = number of articles published, C = number of citations, C/n = number of citations per articles published, SJR = SCImago Journal Rank, H index = an author-level metric in terms of productivity and citation impact.

Journal of the Operational Research Society (15 references and 158 cited references), Management Science (12 references and 1,210 cited references), Omega (12 references and 352 cited references), Journal of Business Ethics (12 references and 219 cited references), Futures (12 references and 170 cited references), European Management Journal (12 references and 157 cited references), Industrial Marketing Management (12 references and 150 cited references), and the International Journal of Technology Management (12 references and 55 cited references). The 20 journals listed in the table provided a total of 467 articles, corresponding to 32.2 per cent of the total number of references encountered.

In accordance with previous literature which had performed bibliometric studies exceeding 40 years (Merigó, Pedrycz, Weber, & de la Sotta, 2018), general indicators such as productivity and influence were measured. From a general point of view, productivity was commonly measured with the number of published articles while influence was assessed by the number of citations (Merigó et al., 2018). According to the productivity and influence analysis shown in Table 3, the Strategic Management Journal (59 references), Management Decision (54 references) and Long Range Planning (39 references) were considered the most productive journals over the given periods.

3.2 Preliminary Analysis

To assess the impact factor noted in previous studies (Ronda-Pupo & Guerras-Martin, 2012), we also took into account these additional indicators. A preliminary study of the publications found that by far, the most frequently cited publication per paper (179) was the Strategic Management Journal. Despite having a relatively low number of published articles, the journal of Management Science (101) and Organization Science (90) earned second and third places, respectively.

Based on the keywords illustrated in Table 4, the key scientific words used were: 'strategic decision making' (163 occurrences), 'decision making' (150 occurrences), 'strategy' (44 occurrences), 'strategic management' (36 occurrences), 'strategic planning' (29 occurrences), 'corporate governance' (23 occurrences), 'strategic decisions' (17 occurrences), 'performance (16 occurrences), and 'competitive advantage' (12 occurrences). The common keywords used throughout the years were 'decision-making' and 'strategic decision making'. This finding also supports our selection for articles related to strategic decision making. Apart from the keywords generally related to decision-making, other

Table 4: Top Scientific Keywords per Year

Keywords	1995-1999	2000-2004	2005-2009	2010-2014	2015-2018	Total
Activity-based costing	2	–	–	–	–	2
Australia	1	–	–	–	–	1
Benchmarking	–	4	–	–	–	4
Case study	1	–	–	–	2	3
China	–	–	–	4	–	4
Cognition	1	–	–	2	–	3
Evaluation	–	–	–	3	–	3
Forecasting	–	2	–	–	–	2
Framing	–	2	–	–	–	2
Competitive advantage	1	1	3	3	4	12
Consensus	1	–	–	–	–	1
Corporate governance	–	5	7	7	4	23
Corporate strategy	–	3	–	3	–	6
Culture	1	–	–	–	–	1
Customer satisfaction	–	–	2	–	–	2
Data envelopment analysis	–	–	–	–	3	3
Decision making	15	24	48	48	15	150
Decision support systems	–	4	5	–	–	9
Entrepreneurs	–	–	2	–	–	2
Entrepreneurship	1	–	–	–	–	1
Environmental scanning	–	2	–	–	–	2
Executive information systems	1	–	–	–	–	1
Firm performance	–	–	–	–	2	2
Framing	2	–	–	–	–	2
Governance	–	–	–	–	3	3
Group support systems	2	–	–	–	–	2
Human resource management	1	–	2	–	–	3
India	–	–	–	3	2	5
Information technology	2	3	–	–	–	5
Innovation	–	–	6	–	4	10
Intuition	–	1	–	3	4	8
Knowledge management	1	–	3	5	–	9
Leadership	1	–	–	3	–	4
Learning	3	–	–	4	–	7
Management	1	2	–	–	–	3
Management accounting	–	–	–	–	3	3

Table 4: (continued)

Keywords	1995-1999	2000-2004	2005-2009	2010-2014	2015-2018	Total
Managerial cognition	1	–	–	–	2	3
Managerial discretion	2	–	–	–	–	2
Management strategy	–	–	3	–	–	3
Manufacturing strategy	–	–	2	–	–	2
Modelling	1	–	2	–	–	3
Organizational change	1	–	–	–	–	1
Organizational culture	2	–	–	–	–	2
Organizational performance	–	–	5	–	–	5
Product management	2	–	–	–	–	2
Quality functional deployment	–	–	2	–	–	2
Real options	–	–	2	–	–	2
Performance	–	–	6	4	6	16
Personality	–	–	–	3	–	3
Rationality	–	1	–	–	3	4
Scenario planning	–	3	–	–	–	3
Simulation	2	–	–	–	–	2
Small to medium–sized	–	–	–	3	–	3
Social networks	–	–	3	–	–	3
Stakeholders	2	–	–	–	–	2
Strategic change	–	2	–	–	–	2
Strategic decision–making	18	24	33	47	41	163
Strategic decisions	–	2	2	7	6	17
Strategic management	5	7	13	8	3	36
Strategic planning	5	9	10	–	5	29
Strategy	11	7	6	16	4	44
Subsidiaries	–	–	3	2	–	5
Supply chain management	–	2	2	2	2	8
Sustainability	–	–	–	3	3	6
System dynamics	–	–	–	–	2	2
Teams	1	–	–	3	–	4
Teamwork	2	–	–	–	–	2
Top management team	–	–	–	3	3	6
Uncertainty	–	2	–	–	–	2
United States of America	–	–	3	–	–	3
Upper echelons	–	–	–	–	4	4
Total	55	59	100	101	88	403

additional key words were: 'innovation', (10 occurrences), 'decision support systems' (9 occurrences), 'knowledge management' (9 occurrences), 'supply chain management' (8 occurrences), 'learning' (7 occurrences), 'corporate strategy' (6 occurrences), 'sustainability' (6 occurrences), and 'top management team' (6 occurrences). The less commonly used keywords were: 'consensus' (1 occurrence), 'culture' (1 occurrence), 'entrepreneurship' (1 occurrence), and 'executive information' (1 occurrence). It appears that the decision process involved in strategic decision making was given less attention. Further to the above, keywords such as intuition (8 occurrences), rationality (4 occurrences), and cognition (3 occurrences) were also paid less attention in the context of decision-making. A few more keywords which reflected geographical information were also noted: India (5 occurrences), China (4 occurrences), and Australia (1 occurrence).

3.3 Bibliometric Methods

The bibliometric method is an important science mapping technique used in the field of bibliometrics (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011, 2012; van Eck & Waltman, 2009). It is commonly used to measure the influence and the similarity of citation analysis, co-citation analysis, author analysis, co-author analysis, and bibliographical coupling (Zupic & Čater, 2015). Our study also utilised complementary bibliometric tools for constructing the intellectual structure and the evolution of strategic decision. They include: (1) multidimensional data analysis using the Sankey Diagram; (2) visual network and heat map analysis using VOSviewer; (3) strategic diagram and evolution map using SciMAT.

In the past few years, Sankey Diagrams have been applied in various ways to perform the multi-dimensional analysis that illustrates the flow of energy. It was first used on steam engines, but in recent years, Sankey Diagrams have also been used on modern energy generating systems including power plants and global energy (Lupton & Allwood, 2017; Soundararajan, Ho, & Su, 2014; Subramanyam, Paramshivan, Kumar, & Mondal, 2015). Our study also applied the Sankey Diagram (https://medialab.sciencespo.fr/) to analyse the given datasets, and to visualise the flow of authorship, scientific themes, and journals based on a yearly basis. The Sankey Diagram is becoming particularly relevant for longitudinal analysis, especially when datasets are more detailed

(Lupton & Allwood, 2017). While the analysis highlights the statistics, the visualisation analyses the inter-linkages and the inter-dependencies of the various studies with regards to SD research (Soundararajan et al., 2014). From the datasets gathered, a scientific mapping based on key trends was then conducted for each year from 1971 to 2018. These processes were visualised and interactively explored. To the best of our knowledge, our study appears to be the first attempt to perform a multi-dimensional analysis and the visualisation of SD research in the field of business and management.

Since the VOSviewer is considered a free access programme which was developed for the purpose of constructing a bibliometric map that is based on network data (van Eck & Waltman, 2009), it was also applied in this study. This powerful bibliometric tool collects the data and builds maps for constructing and visualising the citation analysis, co-citation analysis, authorship analysis, co-authorship analysis, co-occurrences of author keywords, and bibliographic coupling (Merigó et al., 2018; van Eck & Waltman, 2009). The citation analysis was then used to assess how the documents cited each other. This was performed by counting the number of times that A cites B, and vice versa (Merigó et al., 2018). The main advantage of this bibliometric tool over other bibliometric programmes is its emphasis on the graphical representations of the maps (Castillo-Vergara, Alvarez-Marin, & Placencio-Hidalgo, 2018).

At the same time, the co-citation analysis estimates the citation of each document from a similar third source; the co-authorship counts the documents which were co-authored by more than one author, and the co-occurrence analysis then identifies the most frequent keywords used. On these maps, terms that coexist are often placed close to each other. Besides identifying the scientific terms used, our results are further classified into four clusters (Figure 2). Additionally, we also used modularity-based clustering and normalising options to smooth the visualisation of these results.

The next method, the SciMAT, is an open source bibliometric tool. It helps studies to visualise the intellectual structure and the evolution of the scientific research. It thus quantifies and visualises the thematic subfields (Heradio, Perez-Morago, Fernandez-Amoros, Cabrerizo, & Herrera-Viedma, 2016; Cobo et al., 2011, 2012). In general, the process of science mapping consists of: (1) the preliminary data processing (data reduction, de-duplication), (2) the network extraction (co-occurrence, coupling, direct linkage), (3) normalisation (association

strength, equivalence index, Jaccard and Salton's method), and (4) scientific mapping (clustering), analysis (network, spatial, temporal) and visualisation (Cobo et al., 2011, 2012).

The processing of the preliminary data helps to detect any duplications or misspelled items. It also performs time slicing. The duplication process then performs the data and network reductions so as to refine the data, cluster the similar words (by plurals), and to look for synonyms or duplicates in words according to the highest number of documents and repetitions. Some keywords with low informational values were, however, excluded. Prior to performing the network extraction, we grouped our datasets into four periods so as to perform a longitudinal analysis: 2000-2004, 2005-2009, 2010-2014, and 2015-2018. The period settings were based on the significant number of articles distributed in each of those years, which were found to be almost comparable. Finally, we analysed the datasets based on the following:
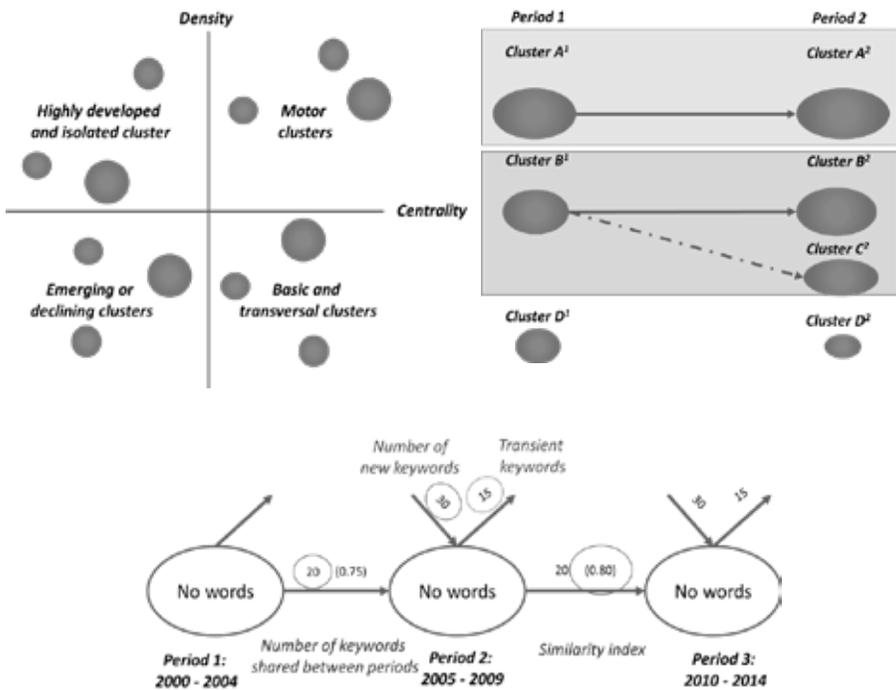
Figure 2: A Strategic Diagram of SciMAT, Evolution Map and Overlapping Graph

the four periods and the author's words, followed by a minimum frequency for data reduction of 1. The performance measures used for the period themes include the number of documents, the citations achieved by those documents, and h-index.

To reduce the network, we further selected the similarity measures for normalisation. Prior to the analysis, we used the equivalence index and visual mapping to identify the research themes. We projected this via the thematic networks and the strategic diagrams. We then used the longitudinal analysis to develop the evolution maps and the overlapping graphs. The configurations used include a network reduction of 1, association strength, normalisation measures, simple centre algorithms, core mapper for the document mappers, h-index and sum citations. The scientific evolution analysis we projected shows the association strength and the overlapping graph mapping thematic clusters for the particular period of time.

In the last stage of our study, we visualised the results by placing them into strategic diagrams, cluster networks, and evolutionary paths of scientific themes. The strategic diagrams highlight the identified clusters and the scientific themes for each of those four periods. This is depicted in a two-dimensional space: density and centrality (Cobo et al., 2011, 2012). The centrality measures the degree of the network interaction which represents the importance of a theme in the development of the research, but the density counts the degree of internal strength of the network. Figure 2 illustrates.

The evolution map is commonly used to identify the scientific clusters. As noted in Figure 2, the multi-sided clusters (D1 and D2) describe the evolution between the periods. The solid lines indicate that the linked clusters share the main items (commonly, the most significant one) and the dotted line describes the elements which are relatively far from the main ones. The thickness of the edges relies on the Inclusion Index which reflects the proportion of the number of published documents in each cluster (Alcaide–Muñoz, Rodríguez–Bolívar, Cobo, & Herrera–Viedma, 2017). The evolution analysis is explained by an overlapping graph as shown in Figure 2 where the horizontal arrow explains the number of items shared by both periods. The emerging trend is depicted by an upper incoming arrow which accounts for the number of new items for period 2 and the upper outgoing arrow represents the transient items that are presented in the previous period, but not in the recent one (Alcaide–Muñoz et al., 2017).

4. Results and Discussion

4.1 Sankey Diagram

The Sankey Diagram portrays multidimensional elements of the authors (left side), key scientific themes (middle side), and cited journals (right side). The results visualise the inter-linkages and the inter-dependencies of SD in the field of business and management from 1995 to 2018. The primary keywords often used in the first element are: 'decision-making', 'strategic decision-making', and 'strategy'. This is consistent with the keywords we applied at the initial stage of searching for the published articles in the field of SD research. The findings also highlight the major evolving trends given in the second element: learning (1995 and 2012), information technology (2001), strategic planning (2002), corporate strategy (2004), performance (2007), upper echelon (2016), and intuition (2017).

Table 3 describes a number of interdependencies among the given scientific terms. The most prolific authorship found in the third element include: Elbanna, Parayitam, Cray, Dooley and Amason. The top five co-wording terms are relatively dominated by several contexts: decision making, strategic decision making, strategy, strategic decision-making, and strategic management. The most influential publishers are Management Decision, Strategic Management Journal, Long Range Planning, Journal of Business Research and Decision Support System.

The findings derived are consistent with our objective which aims to examine the evolution of decision-making in business and management settings. The Sankey Diagram used illustrate some kind of interdependency among authorships, contexts, and the publishing journals. The most intensive interdependency among these three elements was Elbanna and Parayitam, as noted in the co-wording analysis of decision making published in the Management Decision journal. Our results further show that more authors contributed to the Strategic Management Journal and the Decision Science journal. Our results are in line with our preliminary analysis, thereby demonstrating the domination of the Strategic Management Journal in SD research.

Figure 3 highlights the results derived from examining co-wordings. As mentioned earlier, the network analysis was classified into four clusters between 1971 and 2018. The results visualised in VOSviewer (Figure 4) reveal that the first cluster comprised: 'decision making', 'strategic planning', and 'strategic decisions'. The second cluster comprised strategic decision-making processes which depicted
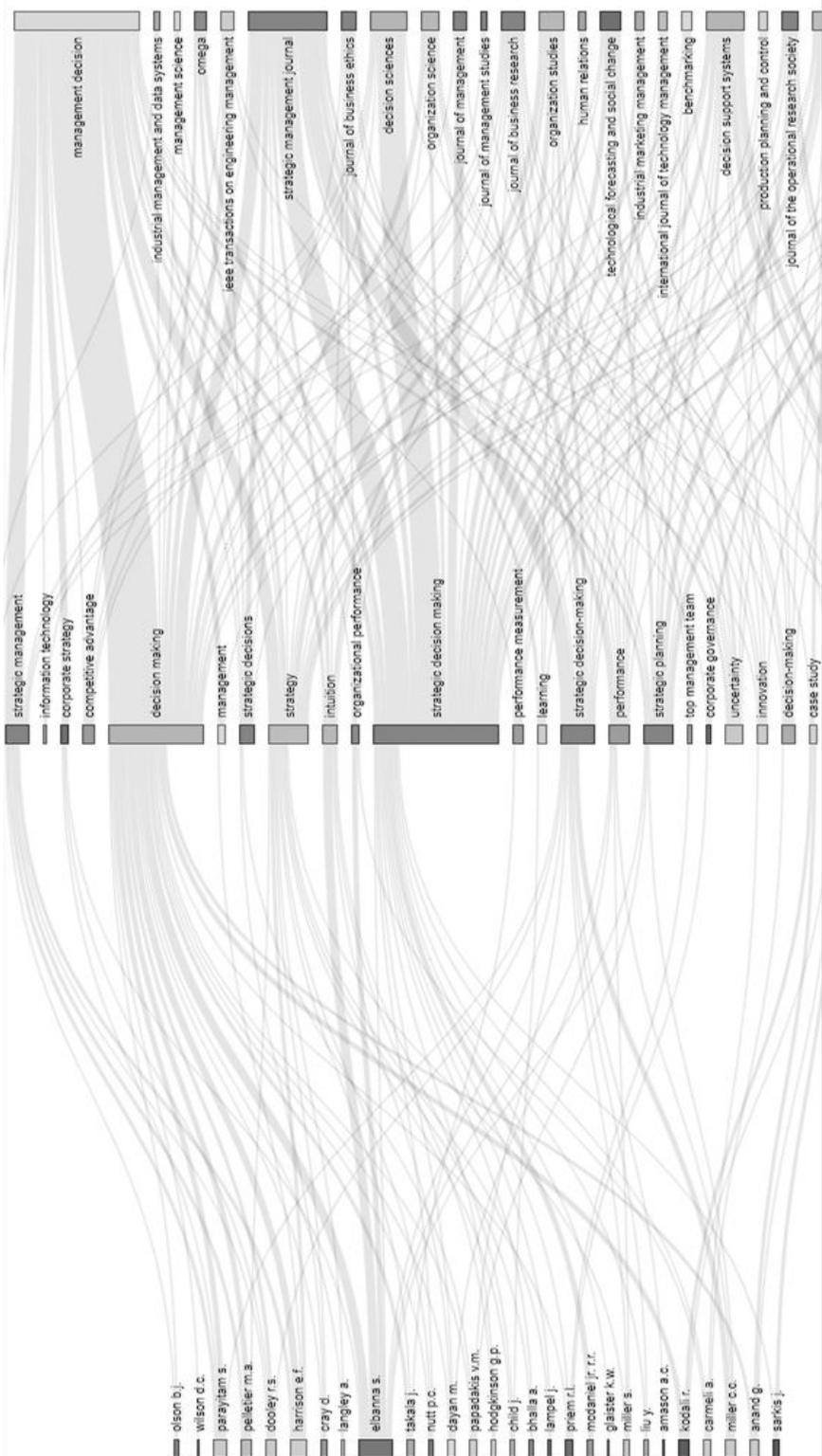
Figure 3: Sankey Diagram of Published Article

Figure 4: Mapping of the Journals' Bibliographic Coupling during 1971 and 2018

'rationality', and 'intuition'. The third cluster describing the decision tools comprised 'a decision support system', and 'fuzzy logic' while the last cluster comprised SD research involving 'strategic decision making', and 'strategy'.

The Sankey diagram in Figure 3 highlights the published articles according to authors and keywords used while Table 5 highlights the hard evidence indicating the various authors who had contributed to the respective journals, the number of publications derived, the keywords used, and the name of the main journals. The table also highlights the trends that persisted during the same period.

4.2 The Cluster Analysis of Decision-Making

4.2.1 The Evolutionary Trends of Decision-Making (1971-2018)

The trends for decision-making for the four periods of analysis in our study had generated several outcomes which are further depicted in Figure 4.

Table 5: Authors, Trends and Journals of Published Articles

Main authors	Main keywords	Main journals
Elbanna S. (12 papers)	Decision making (138 papers)	Strategic Management Journal (59 papers)
Parayitam S. (9 papers)	Strategic decision making (124 papers)	Management Decision (51 papers)
Cray D. (7 papers)	Strategy (57 papers)	Long Range Planning (39 papers)
Dooley R.S. (6 papers)	Strategic decision-making (54 papers)	Journal of Business Research (30 papers)
Amason A.C. (5 papers)	Strategic management (44 papers)	Decision Support Systems (28 papers)
Harrison E.F. (5 papers)	Strategic planning (41 papers)	International Journal of Production Economics (26 papers)
Kodali R. (5 papers)	Corporate governance (28 papers)	Journal of Cleaner Production (26 papers)
Liu Y. (5 papers)	Decision-making (27 papers)	Technological Forecasting and Social Change (26 papers)
Mallory G.R. (5 papers)	Strategic decisions (26 papers)	Decision Sciences (22 papers)
Nutt P.C. (5 papers)	Performance (24 papers)	Journal of Management (22 papers)
Pelletier M.A. (5 papers)	Innovation (22 papers)	International Journal of Production Research (18 papers)
Priem R.L. (5 papers)	Decision support systems (20 papers)	Journal of Management Studies (18 papers)
Takala J. (5 papers)	Supply chain management (20 papers)	Journal of the Operational Research Society (13 papers)
Wilson D.C. (5 papers)	Learning (16 papers)	Management Science (13 papers)
Anand G. (4 papers)	Intuition (15 papers)	Industrial Marketing Management (12 papers)
Bhalla A. (4 papers)	Management (15 papers)	European Management Journal (11 papers)
Carmeli A. (4 papers)	Top management team (15 papers)	Futures (11 papers)
Child J. (4 papers)	Case study (14 papers)	International Journal of Technology Management (11 papers)

Table 5: (continued)

Main authors	Main keywords	Main journals
Dayan M. (4 papers)	Corporate strategy (14 papers)	Journal of Business Ethics (11 papers)
Dimitratos P. (4 papers)	Leadership (14 papers)	Omega (11 papers)
Glaister K.W. (4 papers)	Uncertainty (14 papers)	IEEE Transactions on Engineering Management (10 papers)
Hodgkinson G.P. (4 papers)	Competitive advantage (13 papers)	Industrial Management and Data Systems (10 papers)
Lampel J. (4 papers)	Decision support (13 papers)	Organization Science (10 papers)
Langley A. (4 papers)	Knowledge management (13 papers)	Organization Studies (10 papers)
Mcdaniel Jr. R.R. (4 papers)	Organizational performance (13 papers)	Organizational Behavior and Human Decision Processes (10 papers)
Miller C.C. (4 papers)	Performance measurement (13 papers)	British Journal of Management (9 papers)
Miller S. (4 papers)	Simulation (13 papers)	Information and Management (9 papers)
Olson B.J. (4 papers)	Sustainability (13 papers)	Benchmarking (8 papers)
Papadakis V.M. (4 papers)	Competitive strategy (12 papers)	Human Relations (8 papers)
Sarkis J. (4 papers)	Information technology (12 papers)	Production Planning and Control (8 papers)

Based on Figure 4, it can be seen that the SD processes had evolved in diverse ways over 48 years, from 1971 to 2018. As time progressively advanced, the key words of 'analytical hierarchy process', 'fuzzy logic', 'decision support system', 'rationality', 'intuition' and 'political decision' also became a part of behavioural research, data analytics, and artificial intelligence. The clusters revealed that SD research had been conducted in diverse fields of business and management such as: 'strategic planning', 'supply chain management', 'manufacturing', 'product development', 'investment', 'marketing', and 'industrial management'. Our findings of the four periods are subsequently discussed below.

4.2.2 *The Emergence of Decision-Making during Periods of 1971-1989 and 1990-1999*

Figure 5 below illustrates the results derived from the four clusters. The first cluster contained terms including 'strategic decision', 'decision support system', and 'decision theory'. The second cluster is comprised of terms including 'decision making', and 'information'. The third and fourth clusters, which are described as the minor trends of decision

Figure 5: Mapping of Journals Bibliographic Coupling during 1971 and 1989

making contains terms such as 'decision-making tools' and 'managers' decision'. Although only a few published articles were available during this period, the trends, nonetheless, indicated the emergence of strategic decision-making. As can be noticed, decision-making had evolved in diverse contexts such as 'industrial management', 'international invest-ment', 'economy', 'inventory control', 'business', and 'hospital manage-ment'.

Figure 6 illustrates the analysis derived from our examination of the articles for the time period of 1990 to 1999. Here, it was noted that SD literature had advanced into diverse emerging trends such as: (i) 'product management' and 'artificial intelligence'; (ii) 'knowledge' and 'expert system', and (iii) 'group support system' and 'politics'. This period of time also visualised four clusters and their interdependencies. The first cluster comprises of 'decision-making', 'strategic planning', and 'product management' while the second cluster contains 'strategy', 'management', and 'leadership'. The third cluster visualised other co-wordings such as 'strategic decision-making', 'group support system', 'managerial cognition', and 'politics'. The subsequent cluster depicted other emerging trends of decision making such as 'expert systems' and 'knowledge representation'.
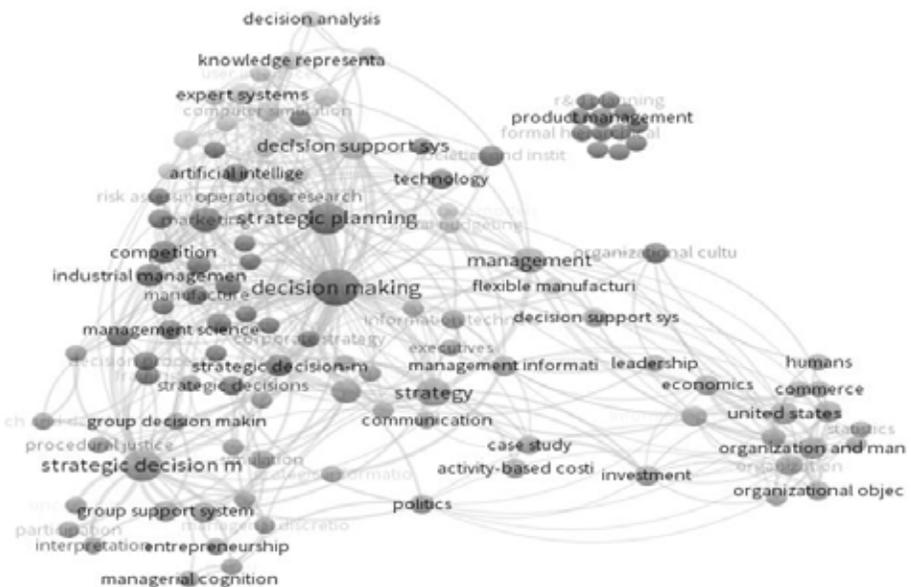

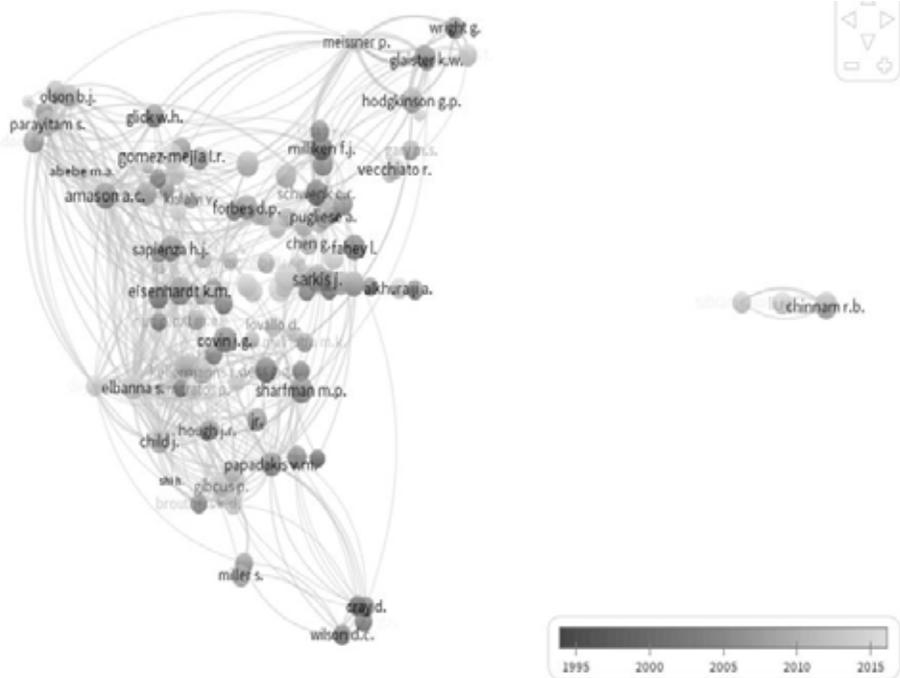Figure 6: Mapping of Journals Bibliographic Coupling during 1990 and 1999

4.2.3 *The Emergence of Strategic Decisions (2000-2004 and 2005-2009)*

Since a substantial number of articles were located during this period of time, we balanced the number of articles by shortening the time period to 5 years, i.e., 2000-2004, and 2005-2009. They represent the third and fourth time period. Figure 7 illustrates results drawn for 2000 to 2004 while Figure 8 illustrates results obtained for 2005 to 2009.

4.2.4 *The Latest Development and Evolution of Decision-Making (2010-2018)*

This section illustrates the sub-major themes and their interdependencies in the final and latest stage of the time period from 2010 to 2018. Figure 9 illustrates results drawn for 2010 to 2014 while Figure 10 illustrates results obtained for 2015 to 2018. In the figures provided, the first cluster comprised of keywords which include: 'strategic decision', 'decision support system', and 'decision theory' while the second cluster portrayed keywords such as: 'decision making' and 'information'. The rest of the clusters portrayed other minor trends of decision making such as 'decision-making tools' and 'managers' decision'.

Figure 7: Mapping of Journals Bibliographic Coupling during 2000 and 2004

Figure 8: Mapping of Journals Bibliographic Coupling during 2005 and 2009

Figure 9: Mapping of Journals Bibliographic Coupling during 2010 and 2014

Figure 10: Mapping of Journals Bibliographic Coupling during 2015 and 2018

4.2.5 *The Bibliometric Analysis and Mapping by Authors and Country (1971-2018)*

This literature review also performed a bibliometric analysis of the authors who had published within the 48 years as noted in our study. Besides this, we also conducted a bibliometric analysis of the country of their origin so as to better understand the region that was most prolific. Figure 11 outlines the overall outcome generated from the scientific mapping while Figure 12 displays the more detailed results of the authors and their countries of origin.

To further understand the trend of the published articles, we proceeded to analysing authorships and those networks that had contributed to the decision-making field throughout the time period we had selected. Focusing on the individual researchers, based on performance analysis, the findings visualised the prolific scholars from the early period as: Eisenhardt, Papadakis, Sharfman, and Schwenk while the latest period comprised of emerging authors such as: Hodgkinson, Parayitam, and Elbanna. By far, these individuals were considered to be the most influential scholars in this field of research

Figure 11: Longitudinal Mapping of Journals Bibliographic Coupling during 1971 and 2018

with the strongest networking found to be between Eisenhardt, Elbanna, Parayitam, Child and Papadakis.

Further to the bibliometric analysis, we also performed the biblio-metric coupling by selecting the countries which were related to the scientific articles. The findings reveal that the SD literature is exclusively concentrated on developed countries such as the United States and the United Kingdom. With regards to academic institutions, it is found that both countries have the largest number of universities, hence their huge influence in the field of strategic decision-making.

Without doubt, these two developed nations are the absolute leader in this research field with the best indicator for influence and productivity in all the dimension we had analysed so far. It appears that the strongest networking for joint scientific productions is also between these two developed countries. Results further indicate that the transitioning and emerging countries have acquired second place as noted in the clusters while other countries such as Australia, Canada,

Figure 12: Mapping of Journals Bibliographic Coupling by Country during 1971 and 2018

China, Spain, Greece and the United Arab Emirates are also fairly influential, but with lesser productivity. The results explain that the geographical gaps need to be addressed in future research.

4.3 Scientific Mapping and Evolution

According to the evolution analysis illustrated by the SciMAT, the scientific mapping of the evolutionary trends were classified into four strategic diagrams, following the time period of 2000 to 2018. In this regard, we used a proportional number of published articles which were associated with each research theme instead of the datasets from 1971 to 1999. Co-occurrences analysis was then applied so as to map the decision-making literature with the subfields identified. This was
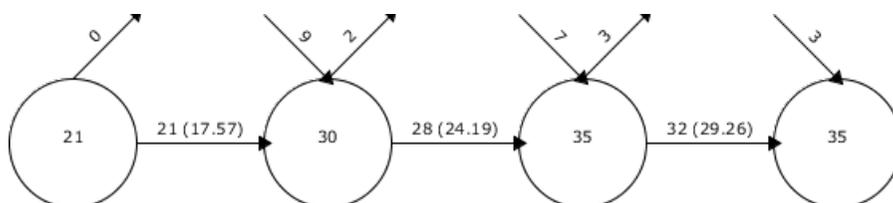
Figure 13: Overlapping Graph and Longitudinal Results of Evolution during Periods

accomplished by measuring the association strength of the publication keywords (Cobo et al., 2011, 2012; Heradio et al., 2016). Results were then automatically plotted by document count of articles based on density and centrality. This is illustrated in Figure 13.

Figure 13 highlights the overlapping graph which represents the number of items shared within the periods of: (i) 2000-2004, (ii) 2005-2009, (iii) 2010-2014, and (iv) 2015-2018. It is observed that the number of items shared by periods had increased from 21 items in the first period to 35 items in the last period. This outcome reveals that the number of new and transient keywords was relatively high while the number of shared keywords between successive sub-periods had increased, thereby leading to the higher similarity indices (17.57, 24.19 and 29.26). These signs suggest that the research field had not reached a stage of maturity yet.

The upper incoming line in Figure 13 demonstrates the number of new items in a period while the upper outgoing arrow displays the items that were presented in the prior period. The results show that the number of new items is relatively higher during the second period (9 items) and third period (7 items). The number declined to three (3) items during the last period. This shows that the items presented in the prior period had increased from two items in the second period to three items in the last period.

With reference to the strategic diagram shown in Figure 14, the analysis shows that the research seemed to have fragmented in the major scientific themes. This is consistent with our study which focusses on the themes of: decision-making, rationality, behavioural economics, bounded rationality and intuition (high centrality-high density). The results also show some research areas using other scientific themes such as: political-decisions, leadership, entrepreneurship (low centrality-high density), strategic planning, game theory and real options (high
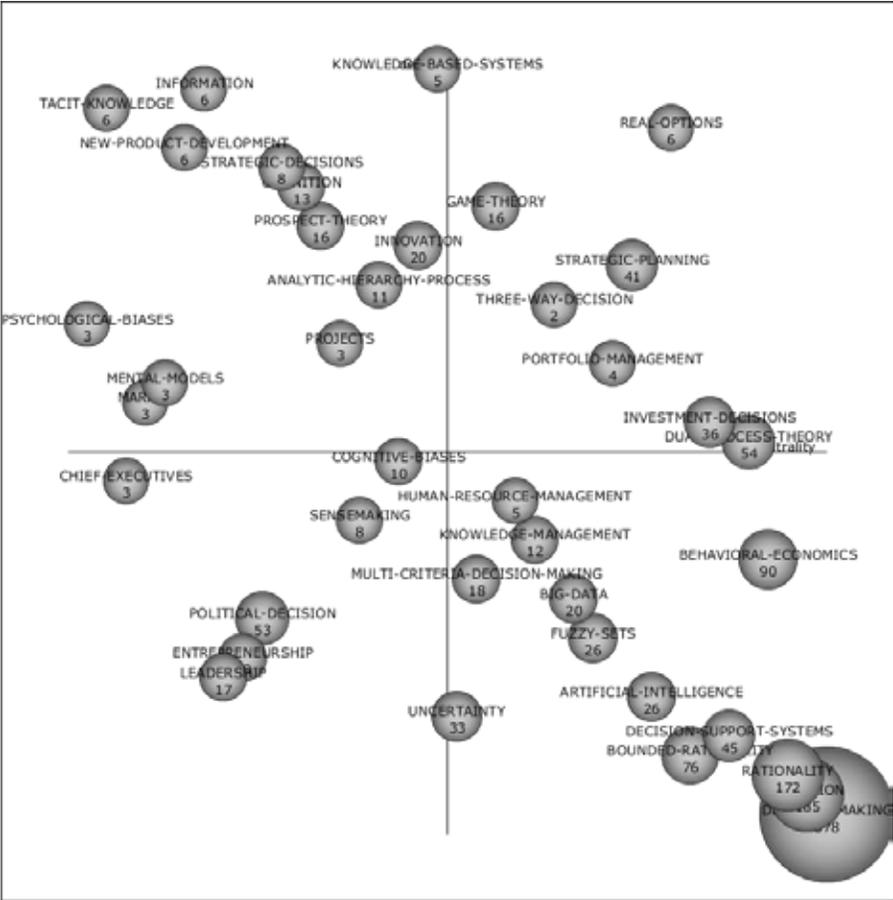
Figure 14: Strategic Map Diagram Using SciMAT 1971-2018 (document counts)

centrality-low density), and innovation and prospect theory (low centrality-low density). According to the strategic map diagram, the decision-making field had concentrated on several major themes throughout the whole time period. The first cluster discloses the motor themes (quadrant 1) such as: real option, strategic planning, game theory, investment decision, dual process theory, three-way-decision and portfolio management. These scientific themes were well developed and crucial for the structuring of decision-making. These research topics that are associated with decision-making are central to the contextual cases of strategic planning, portfolio management, and investment

decisions. It appears that the new approach paved by the dual process theory, three-way-decision, and game theory have transformed the way decisions were made during those time periods.

In the same figure, the second cluster highlights the highly developed but isolated topics (quadrant 2) of: innovation, prospect theory, cognition, analytic hierarchy process, strategic decisions, new product development, information, tacit knowledge, projects, psychological bias, mental models and market. These research topics are associated with how strategic decision making served as a central element for issues related to innovation, prospect theory, cognition and analytic hierarchy process. The third cluster in the same figure projects topics that are marginal and inadequately developed such as emerging or disappearing topics. They include: political decision, entrepreneurship, leadership, cognitive bias, sense-making and chief of executives.

The last quadrant projects the imperative topics which are weakly structured. They encompass: decision-making, intuition, rationality, behavioural economics, bounded rationality, decision support system, uncertainty, artificial intelligence, fuzzy sets, big data, multi-criteria decision making, knowledge and human resource management. Our findings reveal that strategic decision-making has a wide perspective – from classical scientific themes of synoptic and incremental perspectives (rationality, intuition, bounded rationality and decision support system) to neo-classical scientific themes (behavioural economics, artificial intelligence and big data).

According to the performance measures we applied, several major themes were detected. These include: decision-making, intuition, rationality, bounded rationality, decision support system, dual process theory, and political decision. These research themes are able to gather a significant impact rate, achieving more than 50 citations, and getting higher h-indexes when compared to the remaining themes. Our results also establish several very important themes for the decision-making research. They include: decision-making, and intuition (2000-2004), bounded rationality, and uncertainty (2005-2009), decision support system, and artificial intelligence (2010-2014), and decision-making and intuition (2015-2019).

According to the centrality and density of our results, it is observed that the most important themes for the decision-making research were: decision-making, intuition, rationality, bounded rationality, and the decision support system. It should be noted too that both themes had accomplished great impact measures (citation and h-index). Overall, our

results also summarise the top co-wordings based on centrality from 1971-2018. They encompassed: decision-making, intuition, rationality, behavioural economics, bounded rationality and investment decision. Our results also locate the topmost themes based on centrality range. They include: decision-making, intuition, rationality, behavioural economics and decision support system. The five topmost themes that are based on density range were: knowledge-based systems, information, tacit knowledge, new product development and strategic decisions.

In this study, the impact of the co-wording terms was analysed using the average citation among the co-wording maps within each cluster by using the relational database extracted from the decision-making articles. The results are able to exhibit the strategic diagram of the evolution and also a set of thematic networks. Our results also reveal that the major themes are related to the decision-making field such as: analytical hierarchy process, cognitive biases, bounded rationality, real options, multi-criteria decision, cognition, knowledge-based systems, behavioural economics, strategic planning, artificial intelligence, decision support system and intuition.

Towards the end of our analysis, it is found that the most developed theme, and the one that is most important for the construction of the scientific field, is decision-making, given that it represents a strong centrality and a high density. Research on the topic of strategic decision is related to aspects involving dynamic capability where strategic decision-making is a relevant factor. This has been studied by Eisenhardt, Miller and Papadakis. In comparison, research on the topic of behavioural decision is related to aspects involving intuition. This has been conducted by Elbanna, Child and Hodgkinson. The findings from these studies are in line with our focus on decision-making, rationality, behavioural economics and intuition. Consequently, the trend in research themes development was identifiable, thereby making it more conducive for future research to explore further.

4.3.1 *The Scientific Mapping of Strategic Decision (2000-2004)*

In order to visualise the most prominent scientific themes of strategic decision-making in the field of business and management in the two sub-consecutive periods of 2000 to 2004 and 2005 to 2009, we used SciMAT to develop the strategic diagram. Figure 15 is provided.

It was observed that from 2000 to 2004 there has been a rapid rise in the study of decision-making. According to the centrality and density
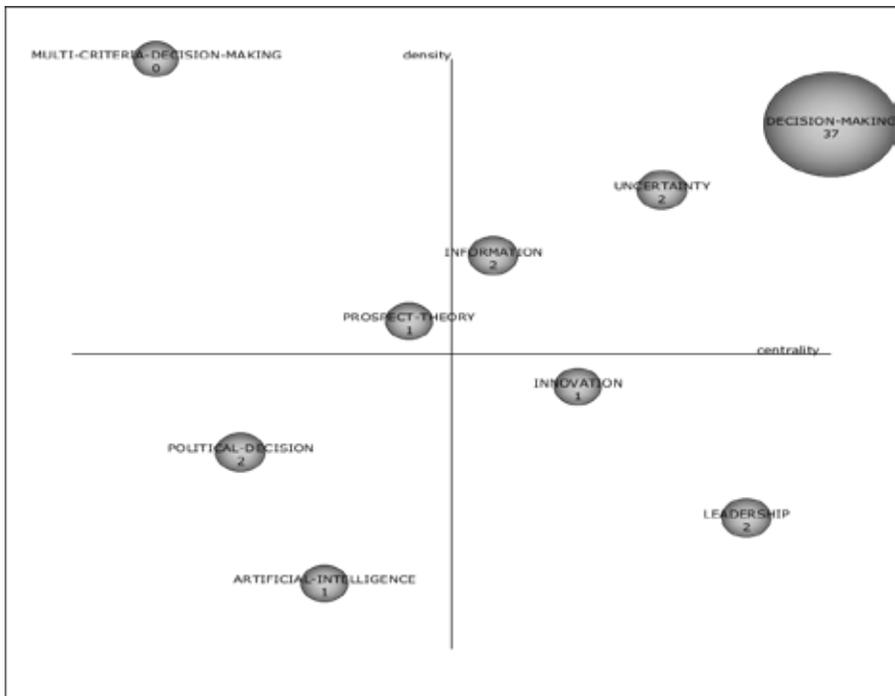
Figure 15: Strategic Map Diagram Using SciMAT 2000-2004 (secondary document counts)

of the results, the most significant of these themes were: decision-making, uncertainty, and information. The impact created by themes include citation and h-index which were relatively well developed, and important for a given scientific field in a given period of time. This is referred to as the motor themes, in quadrant 1. The underdeveloped themes are shown in quadrant 2. They are relatively important, weakly structured but possibly of considerable significance (Cobo et al., 2011, 2012; Heradio et al., 2016). These themes comprise leadership and innovation. The declining themes in quadrant 3 are inadequately developed and marginal, encompassing artificial intelligence and political decision. They are either emerging or disappearing topics. Finally, the basic themes presented in quadrant 4 are prospect theory and multi-criteria decision-making. They are well-developed internal links but they have marginal external ties.

According to the cluster network (Figure 16), the decision-making has a central role that is mainly associated with major scientific themes
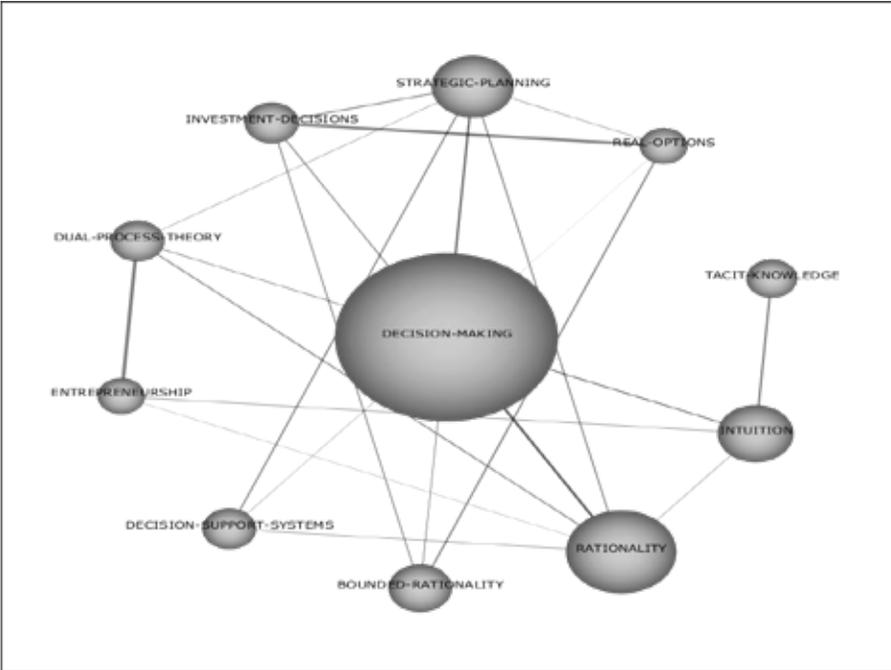
Figure 16: Cluster Network Using SciMAT 2000-2004 (decision making)

such as rationality, strategic planning, intuition, bounded rationality decision support systems. While the rest of the cluster presented the minor scientific themes such as: dual process theory, investment decision, real options, entrepreneurship and tacit knowledge, it seems obvious that decision-making plays a vital role among the scientific themes. It seems to have a powerful influence on other scientific themes as shown in the cluster network for the period of 2000 to 2004.

4.3.2 *The Scientific Mapping of Strategic Decision (2005-2009)*

Based on the strategic diagram provided by SciMAT as shown in Figure 17, it can be noticed that during the period between 2005 to 2009, the most important themes of decision-making research were: decision-making, bounded rationality, information and tacit knowledge. These motor themes as given in quadrant 1 of Figure 17 are relatively well developed and imperative for a given scientific field in a given period of time. The underdeveloped theme shown in quadrant 2 is strategic
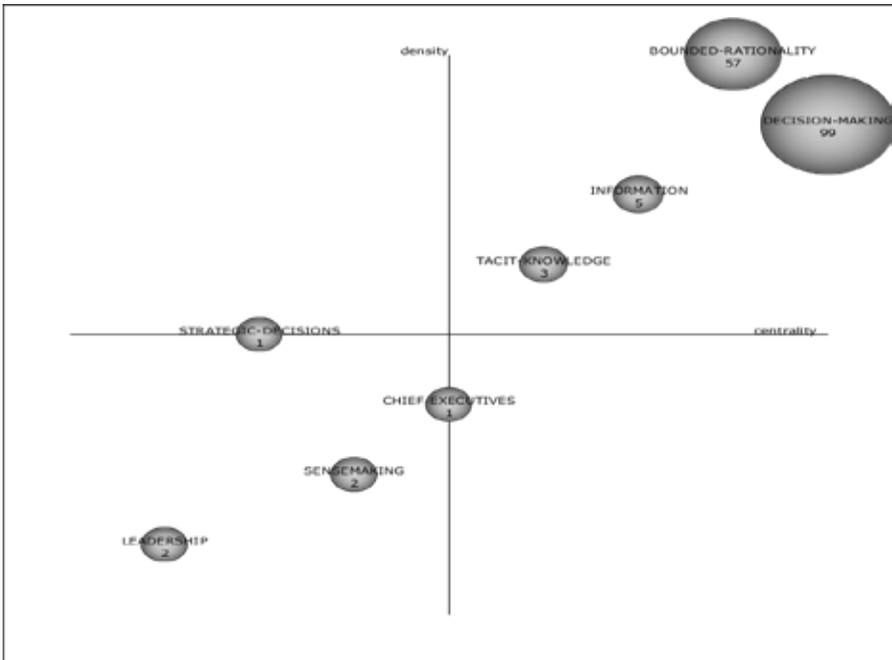
Figure 17: Strategic Map Diagram Using SciMAT 2005-2009 (secondary document counts)

decisions which is relatively important but weakly structured. This suggests that the topic of strategic decision is underdeveloped but of considerable significance for the entire research field. The declining themes presented in quadrant 3 are: leadership, and chief executives. They were inadequately developed and marginal, representing either emerging or disappearing topics. The strategic diagram has no basic and transversal themes which are commonly found in quadrant 4.

According to the cluster network shown in Figure 18, the bounded rationality has a central role which is mainly associated with prominent scientific themes such as: uncertainty, real options, game theory, innovation and strategic planning. The rest of the cluster consists of minor scientific themes such as: political decision, dual process theory, investment decision, analytic hierarchy process, cognitive bias, behavioural economics, artificial intelligence, fuzzy sets, prospect theory, innovation and entrepreneurship. The findings reveal that bounded rationality plays a vital role in the scientific themes. It has a powerful
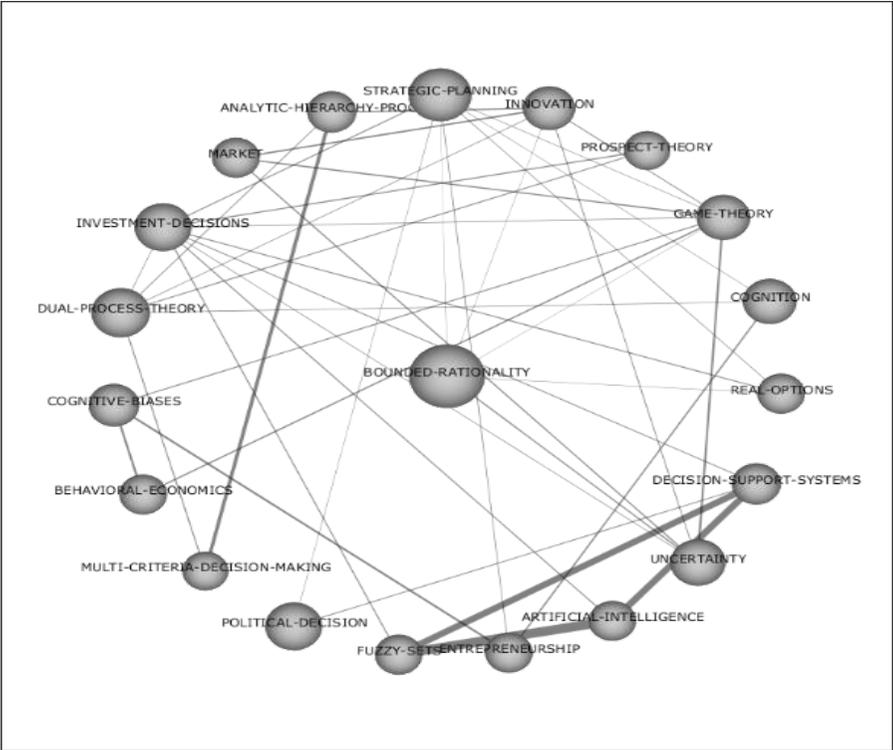
Figure 18: Cluster Network Using SciMAT 2005-2009 (bounded rationality)

influence towards other scientific themes given in the cluster network during the period of 2005 to 2009.

4.3.3 *The Scientific Mapping of Strategic Decision (2010-2014)*

To illustrate the analysis for the period 2010 to 2014, Figure 19 is provided. It highlights the most significant themes of the decision-making research field which comprised: decision-making, game theory, entrepreneurship, strategic planning and portfolio management. These scientific motor themes as shown in quadrant 1 of Figure 19 are relatively well developed and imperative for a given scientific field in a given period of time. The underdeveloped themes shown in quadrant 2 comprised: strategic decision, mental models, projects, real option, and tacit knowledge. They are relatively important but weakly structured.
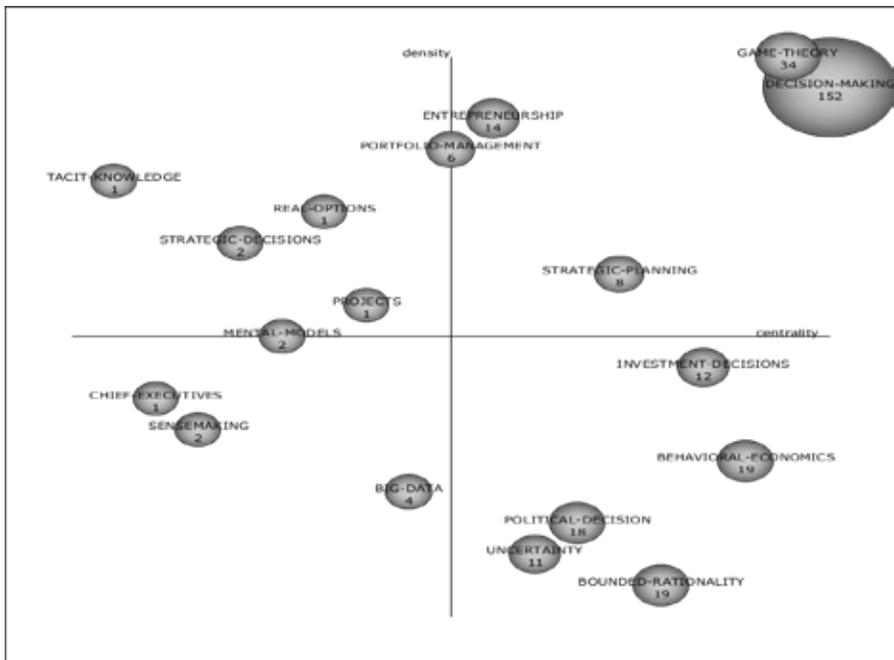
Figure 19: Strategic Map Diagram Using SciMAT 2010-2014 (secondary document counts)

The declining themes such as big data, sense-making and chief executive can be found in quadrant 3. Both are inadequately developed and marginal topics, representing the emerging topics in the age of industrial fourth revolution. Finally, the basic and transversal themes such as: behavioural economics, bounded rationality, political decision, investment decision, and uncertainty are illustrated in quadrant 4. They are well-developed internal links but they have marginal external ties.

To highlight the fuzzy sets, Figure 20 is provided. According to the cluster network, the fuzzy sets have the largest network. It is also mainly associated with prominent scientific themes such as: artificial intelligence, multi-criteria decision-making, and decision support system. The rest of the cluster network consists of minor scientific themes such as: prospect theory, cognition, and game theory. The findings reveal that the decision support system plays a vital role in the scientific themes. It has a powerful influence on other scientific themes such as those given in cluster network during the period of 2010 to 2014.
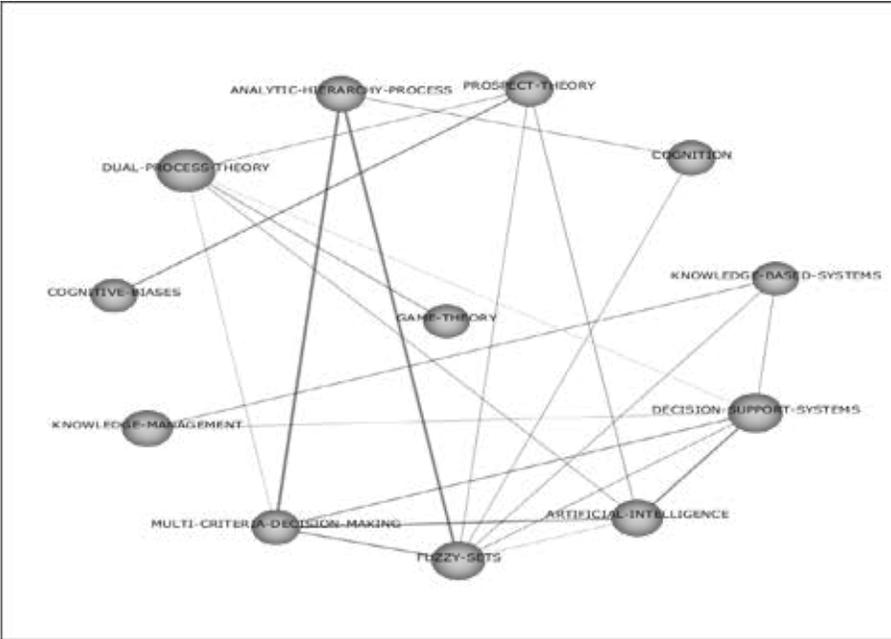
Figure 20: Cluster Network Using SciMAT 2010-2014 (decision support system)

4.3.4 *The Scientific Mapping of Strategic Decision (2015-2018)*

Figure 21 is provided to explain this section. During the period between 2015 and 2018, the most important themes of the decision-making research field are intuition, bounded rationality, cognition and innovation. These scientific motor themes shown in quadrant 1 are relatively well developed and imperative for a given scientific field in a given period of time. The transversal or underdeveloped themes are shown in quadrant 2 are relatively important but weakly structured: three-way decision, analytic hierarchy process and new product development. These considerable themes are classified to be transversal topics or underdeveloped topics of considerable significance for the entire research field.

The declining themes such as leadership, psychological bias and market can be found in quadrant 3 which are both inadequately developed and marginal topics, representing emerging topics in the age of industrial fourth revolution. Lastly, the basic and transversal themes such as political decision, uncertainty and entrepreneurship can
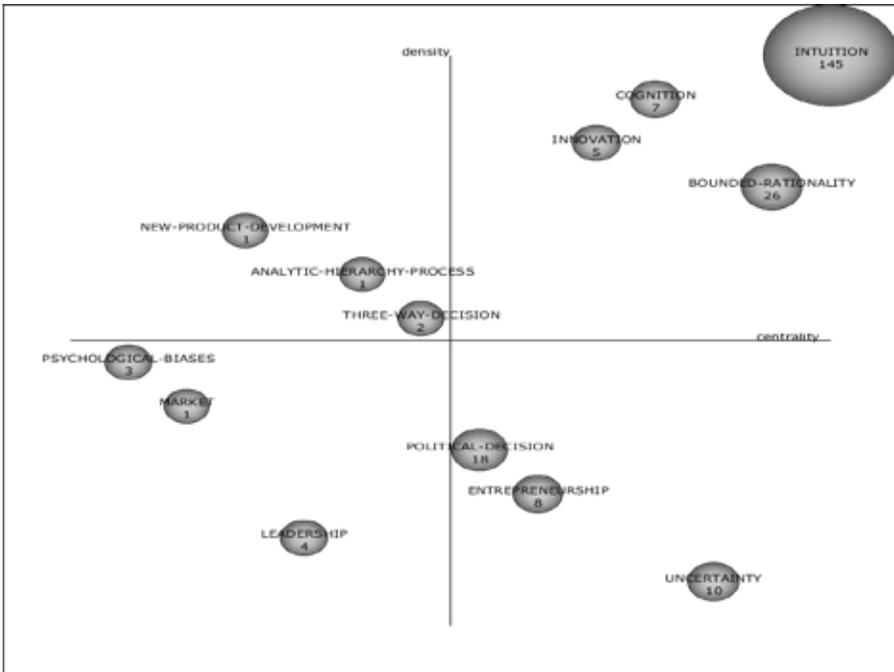
Figure 21: Strategic Map Diagram Using SciMAT 2015-2018 (secondary
         document counts)

be found in quadrant 4. These particular themes are well-developed
internal links but they have marginal external ties. According to the
cluster network of Figure 22, the largest network on research involving
decision-making is mainly associated with prominent scientific themes
such as: behavioural economics, intuition, rationality and dual process
theory. The rest of the clusters consist of minor scientific themes such as:
fuzzy sets, big data, investment decision, multi-criteria decision-making,
strategic planning and game theory. The findings revealed that decision-
making plays a vital role in the scientific themes. It also has a powerful
influence on other scientific themes such as those given in the cluster
network during the period of 2015 and 2018.

      The findings further reveal the thematic focus for each of the time
periods. For instance, decision-making and intuition for 2000 to 2004,
bounded rationality and uncertainty for 2005-2009, decision support
system and artificial intelligence for 2010 to 2014, and decision-making
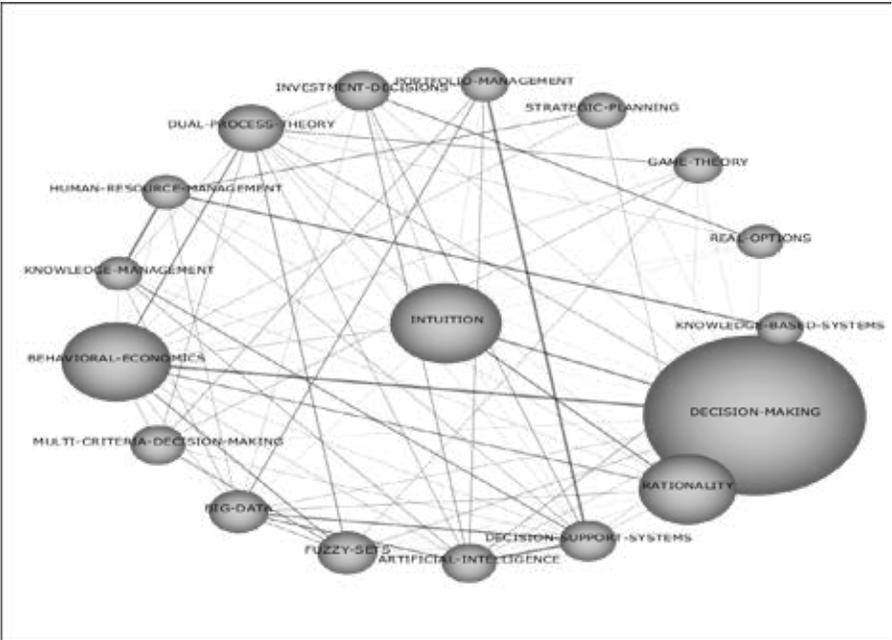and intuition for 2015 to 2019. Overall, it can be summarised that

Figure 22: Cluster Network Using SciMAT 2015-2018 (decision-making)

the top co-wordings, based on centrality from 1971 to 2018 include: decision-making, intuition, rationality, behavioural economics, bounded rationality and investment decision. Further, the prominent themes based on centrality range include: decision-making, intuition, rationality, behavioural economics and decision support system. The top five themes based on density range include: knowledge-based systems, information, tacit knowledge, new product development and strategic decisions.

Once the keywords' evolution was analysed, we then evaluated the scientific evolutionary themes of strategic decision-making field through the thematic areas (see Figure 23). Many of the results achieved in this epigraph confirmed the initial evolution we had highlighted. Initially, research was related to how the decision was made in a given process – intuition, rationality and political decision (decision-making, intuition, rationality, political decision). This outcome was derived based on specific tools such as: the decision support system, fuzzy sets, and artificial intelligence (decision support system, fuzzy sets, artificial intelligence) based on a condition of uncertainty and the cognitive constraint of bounded rationality (uncertainty, bounded rationality).
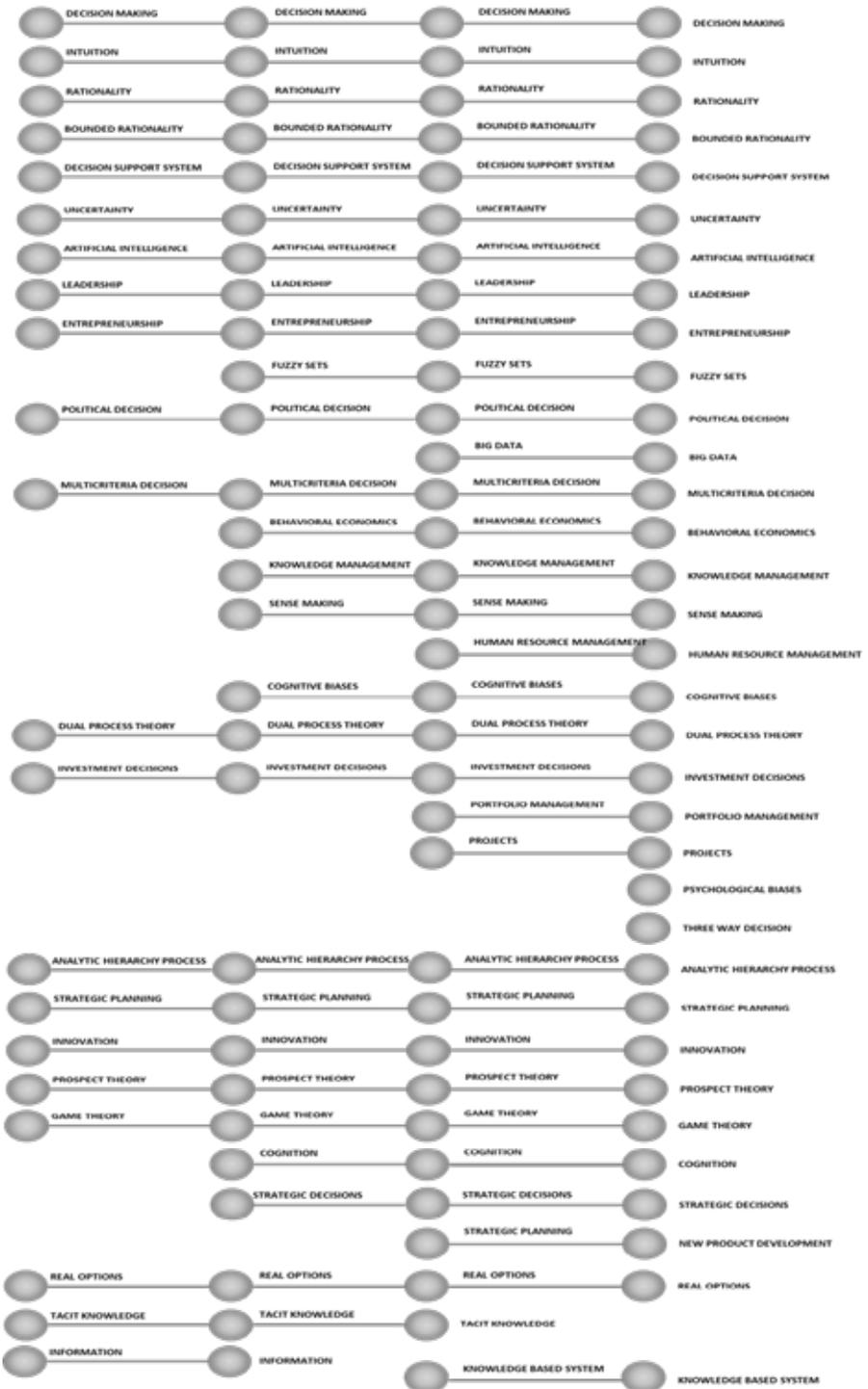
Figure 23: Longitudinal Analysis Based on Core Document H Index Using
     SciMAT 2017-2018

According to the evolution map shown in Figure 23, the emerging themes comprised: behavioural economics, knowledge management, sensemaking, strategic decisions, cognition and portfolio management. In contrast, the disappearing themes were related to: information, market, tacit knowledge and chief executives. According to the h-index, some of the most attractive studies carried various scientific themes such as: decision-making, intuition, rationality, bounded rationality, decision support system, artificial intelligence, leadership, entrepreneurship, fuzzy sets and political decision. It appears that the thickness of the edges is proportional to the Inclusion Index, and the volume of the spheres is proportional to the number of published documents associated with each cluster (Alcaide–Muñoz et al., 2017). The findings also denoted the emerging scientific themes to be: fuzzy sets, big data, behavioural economics, knowledge management, sensemaking, human resource management, cognitive biases, portfolio management, projects, psychological biases, three-way decision, cognition, strategic decisions, new product development and knowledge based systems.

5. Conclusions and Implications

5.1 Contributions

Our study has provided a systematic and updated review of past studies which focussed on SD. In this regard, we also pursued a longitudinal study which embraced four time periods from 1971 to 2018, covering a span of 48 years. Our results depict a long list of taxonomy, highlighting the evolution of research on SD in the field of business and management. Our findings reveal the huge shift in the study of SD, especially over the past ten years. The results depict a gradual increase in the number of studies published in international scientific journals since 2000 and the peak of the publication was between 2010 to 2018.

From our review and detailed analysis, several outcomes are generated. First, the Sankey Diagram illustrated the intellectual structure of the authors, co-wordings and scientific publishing journals. The line's thickness and its interdependency reflected the strong connection among the given scientific terms. We also analysed the multi-dimensional aspect of the bibliometric datasets such as: authorships (Elbanna, Parayitam, Cray, Dooley and Amason), co-wording terms (decision making, strategic decision making, strategy, strategic decision-making, and strategic management), publishing journals (Management Decision,

Strategic Management Journal, Long Range Planning, Journal of Business Research and Decision Support System).

The Sankey Diagram illustrated the gap between the prolific scholars, and the existing key wording profiles of a given sector or subsector of SD research. This difference of the lines' thickness reflecting the inter-linkages and the inter-dependencies of the keywords, thus served as a basis for further evaluation of the field of research (Subramanyam et al., 2015). Meanwhile, the most cited papers were found to introduce both the emerging theories and perspectives, and this seems to change the direction of the research (Ferreira et al., 2016). In order to deepen our understanding, we suggest the development of new theories from the rational perspective to the incremental perspective in the development of SD research in the field of business and management research.

Additionally, the scientific networks and cluster trends shown in the VOSviewer have also displayed the evolution of SD research in business and management from 1971 to 2018. The decision-making processes had evolved in diverse ways, moving from analytical hierarchy processes to fuzzy logic, decision support system, rationality, intuition, political decision (part of behavioural research), data analytics, and artificial intelligence. The clusters shows that decision-making as a research theme, have been investigated within the wide context of business and management, for instance, 'strategic planning', 'supply chain management', 'manufacturing', 'product development', 'investment', 'marketing', and 'industrial management'.

Finally, the strategic diagrams and performance measures shown in the SciMAT reveal some of the most significant themes of strategic decision-making in the field of business and management from 1971 to 2018. They include: 'decision-making', 'intuition', 'rationality', 'bounded rationality', 'decision support system', 'dual process theory' and 'political decision'. According to the results shown in each sub-time period, some of the most important themes that had emerged in the decision-making research field were: 'decision-making' and 'intuition' (2000-2004), 'bounded rationality' and 'uncertainty' (2005-2009), 'decision support system' and 'artificial intelligence' (2010-2014), followed by 'decision-making' and 'intuition' (2015-2019). From the centrality and density of the results generated, some of the most important themes that had surfaced in the decision-making research field were: 'decision-making', 'intuition', 'rationality', 'bounded rationality' and 'decision support system'.

Grounded on the results derived from the bibliometric mapping analysis, it is also observed that some of the scientific themes of SD that carried the highest number of publications and citational measures were: 'intuition', 'rationality', 'bounded rationality' and 'decision support system'. We also found a high number of new and transient keywords within the time period we selected, for instance, 'behavioural economics', 'knowledge management', 'sense making', 'strategic decisions', 'cognition' and 'portfolio management'. They signify that the research on strategic decision-making has not reached a period of maturity yet.

5.2 Recommendation for Future Research

The recommendation approach adopted by previous studies had used certain emerging and discontinued themes, as depicted in the SciMAT (Alcaide–Muñoz et al., 2017; Cobo et al., 2011, 2012). In this study, our findings have stressed on the importance of addressing some forthcoming works that could provide implications and directions for future research. Over the years of studies conducted, academics and scholars have observed that very few studies have focussed on behavioural economics and knowledge management. Based on this lack, it is imperative to know the relationship of these themes on decision-making. For instance, how are behavioural features highlighted for making strategic decisions? What kind of problems and risks can influence the making of strategic decisions in the field of portfolio management?

Next, it appears that future research needs to explore the discontinued themes of information, market and tacit knowledge because they are still relevant in today's world. This can be accomplished by empirical research that evaluates how those relationships impact on decision-making. In addition, it is also necessary to understand if there were any difficulties involved when decision-makers applied their tacit knowledge in making strategic decisions. This may also raise issues on the kind of information used by decision makers to effectively make their strategic decisions. From this, various problems obstructing the effective use of information for SD research can be revealed.

Further to the above implications, it seems imperative for future regional or global analysis to be performed by taking into account the context of emerging countries, instead of merely focussing on particular fields such as business and management research. By com-

bining the research on SD with other fields, a more holistic analysis in understanding interdisciplinary perspectives of SD research can be accomplished. From this standpoint, it may also enrich queries and keywords which can further reveal the diverse scientific themes of decision-making (Cobo, Jürgens, Herrero-Solana, Martínez, & Herrera-Viedma, 2018).

Finally, the evolution of the research themes could be studied by using other scientific tools such as the Web of Science (WoS) as one approach to expand on the articles published. It is one of the most imperative bibliographic datasets applied over the last ten years (Cobo et al., 2018).

5.3 Limitation of the Study

In spite of the evidence generated in this study to support our conclusion and implications, this study is also constrained in some ways. First and foremost, the complex nature of the SD process used within an interdisciplinary research serves as the limitation, particularly in the selection of datasets (Nooraie, 2008).

Second, by focusing only on the Scopus retrieval system, this study is also restricted by publications of different sources. In reality, many articles related to SD had also been published beyond the Scopus retrieval system.

Third, our selection of articles zoomed in on business and management issues only. Other datasets from diverse perspectives, and empirical works with different contexts and settings were thus overlooked. Therefore, even though our findings had reported on the taxonomy and evolution of SD over a long-time frame, our evidence was restrictive in some ways. Multiple datasets extracted from diverse and complex fields of study would be more generalisable.

Fourth, our datasets were gathered using key terms and the Boolean logic of keywords in either the title or abstracts only. This kind of limitation is common in bibliometric studies (Chen, Chiang, & Storey, 2012), hence there is a need to concentrate on this gap for interpretability and generalisability of the findings. Nonetheless, despite the limitations, our findings had visualised the intellectual structure and evolution of strategic decision in the field of business and management. Future research may consider assessing the generalisability of these findings by implementing the approach on different situations and settings.

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Offline Brand Outcomes of Instagram: Do Cognitive Network and Self-congruity Matter?

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ABSTRACT

Manuscript type: Research paper

Research aims: This study aims to determine the extent to which consumers' brand "Follows" are self-congruent due to their cognitive networks or the perception of their social network structure on Instagram. This study also examines if self-congruity results in positive offline brand outcomes when mediated by brand love.

Design/Methodology/Approach: A total of 168 valid responses are collected and analysed. SPSS version 21 is used to measure the descriptive statistics and frequencies and the SMART PLS 3.0 is used as the structural model for hypothesis testing.

Research findings: Results indicate that social tie strength significantly affects self-congruity while brand love is a significant mediator on the relationship between self-congruity and offline brand outcomes (brand loyalty and WoM). Of the three perceived homophily (attitude homophily, status homophily and morality homophily), findings show that morality homophily is the stronger predictor for social tie strength among consumers and their friends on Instagram.

Theoretical implications: This study expands on previous literature by investigating the relationship between cognitive network influence, consumers' self-congruity with "followed brand" and offline

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brand outcomes (brand love, brand loyalty and WoM), in the context of Instagram.

Practitioner/Policy implications: The findings suggest that in order to target Instagram users that "follow" the brand, these brands must be categorised based on status and moral ties. Marketing intelligence and target market segmentations on Instagram can be performed by using tie-strength. Brands on Instagram should be defined based on customers' orientation, i.e., by humanising the brand so as to create an emotional bond. Proxy measures of brand love can be used to predict repurchase intention and the likeliness of sharing through WoM.

Research limitation/Implication: The homophily and social tie strength are measured based on consumers' own perceptions with friends on Instagram. The small number of samples used may limit the generalisability of the findings.

Keywords: Brand Love, Instagram, Loyalty, Self-congruity, Social Tie Strength, WoM

JEL Classification: M31

1. Introduction

The self-concept theory posits that people seek to groom their self-concept, partly through the brands and products they own, desire to own, or do not desire to own (Graeff, 1996). Consumers are more likely to choose brands with images that are similar or congruent to themselves (Liu, Li, Mizerski, & Soh, 2012; Mazodier & Merunka, 2012), and such sense of similarity or congruency invokes valuable outcomes, such as brand loyalty, re-use intention and favourable brand attitudes (Kressman et al., 2006; Sirgy, 1982; Roy & Rabbanee, 2015). As consumers fortify their self-image by purchasing brands that are congruent, they are also developing brand loyalty (Kressman et al., 2006). As a function of both behaviour and attitude, loyalty increases consumers' willingness to pay more for a brand. Similarly, some studies on interpersonal communication (Bataineh, 2015) have also shown that personal influence affects the individual's decision-making process, which makes word of mouth (WoM) worth studying. The WoM behaviour can be driven by impression goals (Schlenker, 1980) in which positive WoM leads to consumers recounting positive experiences, objective displays and recommending the product or service to others (Anderson, 1998). Unfortunately, studies of self-congruity, brand loyalty, and WoM mainly focused outside the online context where physical

interactions are involved in order for brand consumptions to occur. It is only recently that the construct of self-concept, and how individuals create an online version of themselves via brands has caught the attention of brand researchers (Back et al., 2010; Hollenbeck & Kaikati, 2012; Eelen, Özturan, & Verlegh, 2017; Wallace, Buil, & de Chernatony, 2017), where consumption is manifested mainly online (Schau & Gilly, 2003). Not much is known about the brand loyalty–self-congruity, and WoM–self-congruity relationship in the virtual world (Wallace et al., 2017).

The abundance of online social network sites (SNS) has created an opportunity for users to project themselves by creating an aggregated self that would be affirmed by the friendships offered on SNS (Belk, 2013). Brands are used as "shorthand" to create an identity for consumers, where they describe to others who they are, as well as who they are not (Schau & Gilly, 2003). In contrast, offline brands which consume social media are solely for self-presentation purposes. These would probably only remain as a social network interaction (Schau & Gilly, 2003; Sekhon, Bickart, Trudel, & Fournier, 2015), and possibly, never to be owned or purchased (Belk, 2013).

Among the social media platforms used, Instagram is a well-known SNS application that allows users to transform an image into a memory to keep around forever (Instagram, 2018). As of 2017, Instagram consists of 700 million monthly active users (Statista, 2018a). It has also been reported to be the fastest growing app in 2013 (Sala, 2013). Importantly, Instagram has a higher reach of younger audiences that are also more diverse when compared to other social networking sites (Lenhart et al., 2015). These users spend more time on Instagram, unlike those using other social network sites (SNSs), such as Facebook (Salomon, 2013). Holding the motto, "image first, text second", Instagram creates a strong visual-oriented culture. Mathison (2018) reported that 60 per cent of Instagram users discovered new products through the site, with three-quarters of them taking action after seeing a brand's post (Mathison, 2018), and at least 70 per cent of them have made mobile purchases (Global Web Index, 2015) as a result.

Compared to other SNS platforms, Instagram users who "followed" brands on the platform have been found to be the second highest brand community membership intention (Phua, Jin, & Kim, 2017a). Instagram users are also more sociable; they tend to show more affection (Phua, Jin, & Kim, 2017b), but little is known about the degree to which Instagram activities are used to project oneself which cannot be validated or evaluated by friendship network. Consumers may post

product information that are outside of their means for impression management purposes on Instagram, "*where every element is chosen for its semiotic potential*" (Schau & Gilly, 2003, p. 394). Liking a brand on the SNS could be superficial (Zaglia, 2013), and may actually suggest the lack of a real sense of connection with a brand. Facebook users, for instance, give out subtle cues to mould the impression of other people towards them, and their interaction with the brands could be representative of the ideal or actual self (Hollenbeck & Kaikati, 2012; Back et al., 2010) which has previously "slipped under the radar" (Hollenbeck & Kaikati. 2012). In other words, consumers may use brands for self-extension purposes in an online context. Brands could be more crucial for self-concept in the online context because brand preferences are open for all to see (Hollenbeck & Kaikati, 2012). Belk (2013) therefore, has called for more studies to be done on the role of self-congruity in consumers' presentation of oneself on the SNS.

While "Liked" brands express values because of their association with a group or person, socialisation agents such as peers (Hogg, Banister, & Stephenson, 2009) may not necessarily be self-congruent. Other motivations, such as financial incentives and information search could explain why these "Likes" are given, thus posting more doubts (Wong, 2010; Parker, 2012). The same could be true for Instagram "Follows". In this regard, Instagram friends would encourage the consideration of the consumers' network display more carefully. As a result, they may "Follow" brands on Instagram due to the friendship structure (Schau & Gilly, 2003), which is supported in Facebook case (Ligas & Cotte, 1999).

Thus far, only Wallace et al. (2017) have quantitatively investigated the relationship between consumers' self-congruity with a "Liked" brand, their cognitive network influence and brand outcomes, but not in the context of Instagram, and the offline brand outcomes. Motivated by the importance of self-congruity, cognitive network influence and brand outcomes in an online SNS, this study thus aims to specifically investigate the degree to which consumers' brand "Follows" are self-congruent due to their cognitive networks, or the perception of their social network structure on Instagram. In this study, the findings of Richard and Guppy (2014) and Wallace et al. (2017) were expanded so as to include self-congruity with consumers' "Follows" on offline brand outcomes (brand love, brand loyalty and WoM). This study also addresses the call by Wallace et al. (2017) to explore how brand love mediates the relationship between self-congruence and offline brand outcomes.

The remainder of this paper is organised as follows: Section 2 looks at the literature on homophily, social tie strength, brand love and brand loyalty done in the past so as to develop the hypotheses. Section 3 describes the research methodology employed. Section 4 presents the empirical results and Section 5 concludes.

2. Literature Review and Hypotheses Development

2.1 Homophily and Social Tie Strength

On the social network, each individual is a "node" connected to other nodes, and the connection between the nodes is known as social ties (Newman, 2010). Social tie strength is represented by the frequency of interactions (Wallace et al., 2017). The strength of a tie is defined as a (probably) linear combination of the amount of time, the emotional intensity, the intimacy (mutual confiding) and the reciprocal services which characterise the tie (Granovetter, 1977).

On Instagram, individuals who communicate more frequently with each other and are more involved with each other have stronger ties. Similar tastes also contribute to stronger ties (Lewis, Kaufman, Gonzalez, Wimmer, & Christakis, 2008) in an online context (Wallace et al., 2017). The inclusion of the public self (social and ideal social self) when measuring consumers' self-congruity in this study is relevant as the public self could predict preferences for conspicuous products (consumption of brands on social media) compared to inconspicuous products (Sirgy & Su, 2000).

There is an observed tendency of similar people associating with one another (McPherson, Smith-Lovin, & Cook, 2001; Ruef, Aldrich, & Carter, 2003; Huston & Levinger, 1978). Homophily, which is the observed tendency of "like to associate with like" (Lazarsfeld & Merton, 1954; McPherson & Smith-Lovin, 1987; McPherson et al., 2001) explains why friends, spouses, romantic partners and colleagues have a tendency to be more similar to each other (Kossinets & Watts, 2009). McCroskey, Richmond and Daly (1975) posit three dimensions of perceived homophily, namely attitude homophily, morality homophily and status homophily. Attitude homophily refers to the degree consumers think that their network friends share similar attitudes (Wallace et al., 2017). Morality homophily refers to the degree to which consumers trust that their network friends share the same moral beliefs. Status homophily refers to the degree consumers are convinced that their network friends

come from socioeconomic circumstances that are the same as theirs (McCroskey et al., 1975), which can be ascribed or achieved (McPherson et al., 2001). Friends are found to be more similar on status dimensions, such as education level, age, occupation and socioeconomic status as compared to chance (McPherson & Smith-Lovin, 1987). Similarity leads to trust and solidarity because of the simplicity of evaluating, communicating and predicting behaviours (Hamm, 2000; Portes & Sensenbrenner, 1993). It also incurs lower maintenance costs (Felmlee, Sprecher, & Bassin, 1990). Studies (Skitka, Bauman, & Sargis, 2005) also show that people tend to disassociate with those who have dissimilar moral values. The nature of social media, which is public, makes it an important platform to express moral convictions and ideals as well as the opportunity to assess moral behaviour in its raw and untouched state.

Reviews of recent literature (Aiello et al., 2012; Halberstam & Knight, 2016; Phua et al., 2017a, 2017b) indicating the role of homophily in various social media platforms have been examined in social psychology, political-psychology and branding studies, but not yet in the context of SNS such as Instagram. Therefore, in this study, perceived homophily between consumers and their friends on Instagram is expected to influence their perceived social tie strength. The consumers' perception of their social relations is measured instead of the actual existing social relations mainly because the measures of "cognitive networks" or social relations, as perceived by the actors themselves, is a more suitable measure to study social influence on attitudes and opinions (Marsden, 1990). Based on the above, the hypotheses are formulated as:

H_{1a}: Greater perceived attitude homophily is positively associated with greater perceived social tie strength.

H_{1b}: Greater perceived status homophily is positively associated with greater perceived social tie strength.

H_{1c}: Greater perceived morality homophily is positively associated with greater perceived social tie strength.

H_2: Greater perceived social tie strength is positively associated with greater perceived self-congruity with a "Followed" brand.

2.2 Self-Congruity

Self-congruity is the natural extension of the self-concept and the degree of consistency one has with a brand (Usakli & Baloglu, 2011). The basic hypothesis of the self-congruity theory is that consumers

have the tendency to choose products or brands that match their self-concept. In other words, cognitive matching between value–expressive attributes of a product or brand and the consumer's self-concept would partially determine the consumer's behaviour (Sirgy, Johar, Samli, & Claiborne, 1991). A high self-congruity occurs when the consumer perceives that the product-user image matches the consumer's self-image, and vice versa.

Self-congruity is made up of four dimensions, namely actual self, ideal self, social self and ideal social self (Sirgy & Su, 2000). An actual self-congruent brand is perceived as one that matches who the customer really is while an ideal self-congruent brand would be one that matches who the customer wished to be (Aaker, 1999; Rauschnabel & Ahuvia, 2014). A social self-congruent brand is perceived to match who the consumer is perceived to be in social terms or by other people while an ideal social self-congruent would be one that matches who the consumer wishes to be perceived by other people (Sirgy, 1985). Past literature (Sirgy, 1982; Roy & Rabbanee, 2015; Rauschnabel & Ahuvia, 2014; Saenger, Thomas, & Johnson, 2013) shows that a positive relationship exists between the brand self-congruence and the brand outcome. An individual would feel more self-congruent when his/her self-concept is the same as the brand's personality. Consumers tend to love a brand more when the brand enhances their social self, or when the brand reflects their inner self (Carroll & Ahuvia, 2006). Brand love shows how much the passionate emotional attachment a satisfied consumer has for a particular trade name. It is enhanced when self-congruity with a brand is higher (Wallace et al., 2017). It has also been theorised that consumers become more attracted to brands which are more congruent with who they are (Rahschnabel & Ahuvia, 2014). Based on this, the following hypothesis is formulated:

H_3: Greater perceived self-congruity with a "Followed" brand is positively associated with greater brand love.

2.3 Brand Love, Brand Loyalty and Positive WoM

Previous studies (e.g. Caroll & Ahuvia, 2006) have highlighted the significant relationship that exists between brand love, brand loyalty and positive WOM. The use of a brand to express one's identity and to facilitate interpersonal relationships is viewed as leading to positive brand outcomes. Brands "followed" on Instagram are expected to help

co-create the consumers' identity through their interactions with other individuals on the social network. Customers who fall in love with a certain brand would not only choose the particular brand as their first choice, they also tend to recommend it to others. In the social media context, previous studies have found that a consumer who is engaged with the brand is likely to have emotional attachment, hence spreads positive WOM. The consumer influences prospective customers by providing recommendations in social media. Looking at the context of Facebook, Wallace et al. (2017) noted that brand love mediates the relationship between self-congruence with a brand and brand loyalty, and between self-congruence with a brand and WoM. They suggested that consumers may only display brand loyalty, and spread positive WOM about the brand when the brand holds an emotional or passionate attachment for them. The present study also expects that when the brand love is high, the relationship between self-congruence and brand outcomes, such as brand loyalty, and WoM, also becomes stronger. Thus, the hypothesis is formulated as:

H$_{4a}$: Greater brand love mediates a stronger relationship between self-congruity with a "Followed" brand and brand loyalty.

H$_{4b}$: Greater brand love mediates a stronger relationship between self-congruity with a "Followed" brand and WoM.

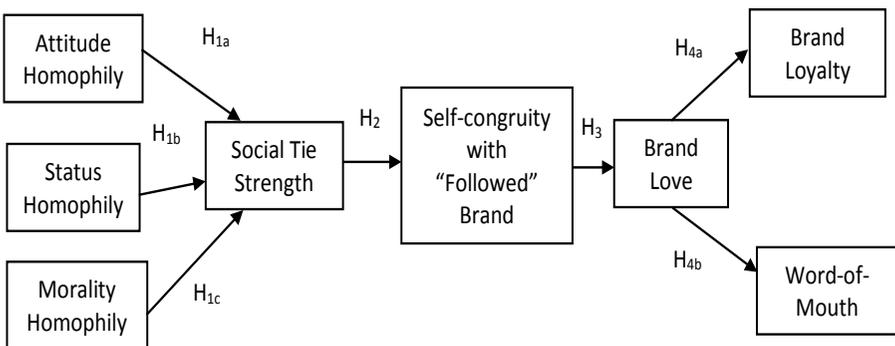Based on the hypotheses formulated, the following conceptual frame-work was developed (Figure 1).

Figure 1: Research Framework

3. Methodology

This study aims to determine the degree to which consumers' brand "Follows" are self-congruent due to their cognitive networks, and if the self-congruity results in a positive offline brand outcome when mediated by brand love. The sample for this study comprised young Malaysian adults aged between 20 to 39 years. Accounting for 40 per cent of the Malaysian population, they are also the largest segment of the population (Muda, Mohd., & Hassan, 2016) of this country. Based on age, they are the largest segment of the Malaysian Internet users who are the frequent users of social media and are technologically-savvy.

In this study, homophily was measured through 12 items adapted from McCroskey et al. (1975) and Wallace et al. (2017) while social tie strength was measured with four items adapted from Granovetter (1983), Brown and Reingen (1987), and Wallace et al. (2017). Self-congruity was measured with 13 items adapted from Grzeskowiak, Sirgy, Foscht and Swoboda (2016) while brand love was measured with 10 items adapted from Carroll and Ahuvia (2006), and Wallace et al. (2017). Brand loyalty was measured using seven items adapted from Yoo, Donthu and Lee (2000), Carroll and Ahuvia (2006), and Wallace et al. (2017) while WoM was measured with four items adapted from Carroll and Ahuvia (2006).

Purposive sampling was adopted using three screening questions: "Do you have an Instagram account?", "Do you follow any clothing/apparel/fashion brand on Instagram?", and "Have you bought any product of the clothing/apparel/fashion brand you follow on Instagram?". Minimum sample size was determined using the G* Power Analysis (Erdfelder, Faul, & Buchner, 1996). Based on *a priori* analysis, the minimum number of respondents required was 138, but in the context of this study, a Google online questionnaire was created, and then distributed to a total of 384 online users through multiple social media applications. Only 168 valid responses were retrieved for use and analysis, suggesting a 44 per cent response rate.

4. Findings of the Study

Majority of the respondents are females (66.1%) aged between 20 to 24 years of age (75.6%), and they currently reside in Peninsular Malaysia (66.1%), with majority holding a Bachelor's degree (70.8%). Majority also used the Instagram application multiple times a day (85.1%), and three-

Table 1: Respondents' Profile

Demographic Variables	Categories	Frequency	Percentage
Gender	Female	111	66.1
	Male	57	33.9
Age	20–24	127	75.6
	25–29	36	21.4
	30–34	2	1.2
	35–39	3	1.8
Hometown	Peninsular Malaysia	111	66.1
	Sabah and Sarawak	57	33.9
Education Level	SPM and below	8	4.8
	STPM or Diploma	25	14.9
	Bachelor's degree	119	70.8
	Master's degree	16	9.5
Frequency of Use	Multiple times a day	143	85.1
	Once a day	8	4.8
	A few times a week	9	5.4
	Once a week	3	1.8
	A few times in a month	5	3.0
Number of Social Media Accounts	1–5	126	75.0
	6–10	40	23.8
	More than 10	2	1.2

quarters (75%) of them have one to five social media accounts. Table 1 outlines the profile.

Eight variables were included in this research: Attitude Homophily, Status Homophily, Morality Homophily, Social Tie Strength, Self-Congruity with "Followed" Brand, Brand Love, Brand Loyalty, and Word-of-Mouth (WoM). Table 2 shows the means and standard deviations for the variables.

It can be noted that Attitude Homophily scores the highest mean (M = 3.8289) while Brand Loyalty has the lowest mean (M = 2.7177). Brand Love has the lowest variation while Social Tie Strength scores the highest variation among the data. The data indicate that the respondents are having positive responses for all variables, except for brand loyalty, and Word-of-mouth (WoM). In addition, most of the data are clustered based on the means. This suggests that the respondents are rather agreeable

Table 2: Descriptive Analysis for Variables

Variables	Mean	Standard Deviation
Attitude homophily	3.829	1.278
Status homophily	3.696	1.304
Morality homophily	3.692	1.297
Social Tie Strength	3.585	1.370
Self-congruity with "followed brand"	3.032	0.823
Brand love	3.640	0.766
Brand loyalty	2.718	0.910
Word-of-mouth	2.749	1.087

towards the variables tested. A measurement model encompassing all the variables of interest was then evaluated. Two psychometric tests, the convergent validity, and the discriminant validity were then performed. Convergent validity was determined using outer loadings, CR and AVE. Table 3 displays the analysis.

Table 3: Internal Consistency Reliability and Convergent Validity

Constructs	Items	Loadings	AVE	CR	Cronbach's Alpha (α)
Attitude homophily	ATTHP1	0.863	0.732	0.916	0.878
	ATTHP2	0.877			
	ATTHP3	0.852			
	ATTHP4	0.830			
Status homophily	STHP1	0.795	0.693	0.900	0.853
	STHP2	0.875			
	STHP3	0.825			
	STHP4	0.833			
Morality homophily	MRHP1	0.789	0.701	0.903	0.857
	MRHP2	0.804			
	MRHP3	0.864			
	MRHP4	0.888			
Social tie strength	STS1	0.816	0.710	0.907	0.864
	STS2	0.836			
	STS3	0.857			
	STS4	0.861			

Table 3: continued

Constructs	Items	Loadings	AVE	CR	Cronbach's Alpha (α)
Self-congruity with "followed" brand	SCActual1	0.707	0.566	0.944	0.936
	SCActual2	0.673			
	SCActual3	0.775			
	SCIdeal1	0.801			
	SCIdeal2	0.749			
	SCIdeal3	0.833			
	SCSocial1	0.785			
	SCSocial2	0.774			
	SCSocial3	0.701			
	SCIdealSocial1	0.756			
	SCIdealSocial2	0.706			
	SCIdealSocial3	0.766			
	SCIdealSocial4	0.734			
Brand love	BrandLove1	0.751	0.655	0.950	0.942
	BrandLove2	0.809			
	BrandLove3	0.825			
	BrandLove4	0.778			
	BrandLove5	0.840			
	BrandLove6	0.828			
	BrandLove7	0.806			
	BrandLove8	0.867			
	BrandLove9	0.819			
	BrandLove10	0.766			
Brand loyalty	BrandLOYAL1	0.797	0.611	0.917	0.896
	BrandLOYAL2	0.749			
	BrandLOYAL3	0.839			
	BrandLOYAL4	0.810			
	BrandLOYAL5	0.744			
	BrandLOYAL6	0.762			
	BrandLOYAL7	0.766			
Word-of-mouth	WOM1	0.903	0.808	0.944	0.921
	WOM2	0.879			
	WOM3	0.916			
	WOM4	0.897			

As can be noted from the above analysis, all the outer loadings are above the recommended value of 0.5 (Hair, Ringle, & Sarstedt, 2011), ranging between 0.673 to 0.916. The Composite Reliability (CR) for all the items ranged between 0.900 to 0.950, and which exceeded the recommended minimum value of 0.70 (Hair, Black, Babin, & Anderson, 2010). In addition the Average Variance Extracted (AVE) ranged between 0.566 to 0.808 which exceeded the recommended value of 0.5 (Hair et al., 2010; Fornell & Larcker, 1981). All the Cronbach's Alpha coefficients ranged from 0.853 to 0.942, which also exceeded the recommended value of 0.70 (Nunnally, 1978). These figures indicate that the measurement model satisfies the convergent validity.

Discriminant validity refers to the degree to which indicators differentiate across constructs by examining the correlations between potentially overlapped factors. This is determined by using Fornell and Larcker's criterion, Cross-Loadings and HTMT (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). The acceptable value for the Cross-Loading criterion is 0.5 and above (Costello & Osborne, 2005), whereby the indicator for loadings which belonged to the constructed items must be higher when compared to the other constructed measurements. All the indicators loaded (in bold) are found to be stronger than other latent variables, whereby the values of loadings are higher than the loadings on all other latent variables. Table 4 highlights the details.

It can be seen from the table that the square roots of the AVE exceeded the squared correlations between the latent variable and all

Table 4: Discriminant Validity: Fornell-Larcker's Criterion

	AT	BL	BLO	MH	SC	STS	SH	WOM
AT	**0.855**							
BL	0.285	**0.809**						
BLO	0.363	0.548	**0.782**					
MH	0.584	0.261	0.348	**0.837**				
SC	0.373	0.642	0.506	0.259	**0.752**			
STS	0.407	0.374	0.396	0.575	0.424	**0.843**		
SH	0.528	0.242	0.415	0.641	0.349	0.537	**0.832**	
WOM	0.309	0.593	0.658	0.269	0.543	0.34	0.336	**0.899**

Note: AT – Attitude Homophily, BL – Brand Love, BLO – Brand Loyalty, MH – Moral Homophily; SC – Self-Congruity with "Followed" Brand, STS – Social Tie Strength, SH – Status Homophily, WOM – Word of Mouth.

other latent variables. A threshold value of 0.90 has been suggested for HTMT (Henseler, Ringle, & Sarstedt, 2015) where a reading of above 0.90 indicates a lack of discriminant validity, and the confidence interval of the HTMT should not involve the value of 1. Table 5 shows that the HTMT criterion has been fulfilled. Overall, it can be concluded that the measurement model in this study showed satisfactory evidence of overall reliability, convergent validity and discriminant validity.

Table 5: Discriminant Validity: HTMT

	AT	BL	BLO	MH	SC	STS	SH	WOM
AT	–							
BL	0.308	–						
BLO	0.410	0.550	–					
MH	0.678	0.284	0.396	–				
SC	0.408	0.675	0.532	0.287	–			
STS	0.465	0.409	0.444	0.664	0.468	–		
SH	0.612	0.258	0.460	0.743	0.393	0.616	–	
WOM	0.344	0.624	0.717	0.298	0.585	0.382	0.379	–

Lateral collinearity issue is an issue that must be avoided before evaluating the structural model. Although the criteria of the discriminant validity are fulfilled, the lateral collinearity issue may mislead the results since it could mask the strong causal effects in the model (Costello & Osborne, 2005). In the analysis provided, all the Inner VIF values for the variables ranged from 1 to 1.976. This indicates that lateral multicollinearity is not a concern in this study (Hair et al., 2014).

Assuming that the measurement model is parsimonious, the structural model was calculated by using the Bootstrapping function. As indicated in Table 6, the value of R^2 ranged from 0.180 to 0.412. For a hypothesis to be considered significant and supported, the standard beta value has to be positive, and the p-value has to be less than 0.05 (Hair et al., 2014). The effect size was measured according to the guideline recommended by Cohen (1988) whereby the value of 0.01, 0.20, 0.50 and 0.80 represents very small, small, medium and large effects, respectively.

From Table 6, it can be noted that perceived attitude homophily is not significantly related to perceived social tie strength (t = 0.505, p > .05, f^2 = 0.002), hence H_{1a} is not supported. In contrast, status homophily (t = 2.749, p < .05, f^2 = 0.067) and morality homophily (t = 3.653, p < .05,

Table 6: Hypotheses Testing

	Std Beta	Std Error	t-value	p-values	Decision	R²	f²	Effect size
Attitude Homophily → Social Tie Strength	0.044	0.087	0.505	0.614	Not supported	0.380	0.002	Very small
Status Homophily → Social Tie Strength	0.274	0.100	2.749	0.006**	Supported	–	0.067	Very small
Morality Homophily → Social Tie Strength	0.374	0.102	3.653	0.000**	Supported	–	0.114	Very small
Social Tie Strength → Self-Congruity with "Followed" Brand	0.424	0.074	5.694	0.000**	Supported	0.180	0.219	Small
Self-Congruity with "Followed" Brand → Brand Love	0.642	0.043	15.018	0.000**	Supported	0.412	0.702	Medium
Brand Love → Brand Loyalty	0.548	0.055	10.018	0.000**	Supported	0.300	0.428	Small
Brand Love → Word-of-Mouth	0.593	0.049	12.051	0.000**	Supported	0.352	0.543	Medium

Note: p values for one-tailed test: *p < 0.05, **p < 0.01.

f² = 0.114) are observed to have a positive relationship with social tie strength, hence H_{1b} and H_{1c} are supported. The effect size in producing the R² for social tie strength was observed to be rather small, with all the homophily variables affecting the social tie strength with small effect sizes.

The analysis further shows that social tie strength positively predicted self-congruity with "followed" brand (β = 0.424, t = 5.694, p < 0.01), and hence H_2 is supported. The effect size in producing the R² for self-congruity with "followed" brand is small, with a value of f² = 0.219. This study also found that greater perceived self-congruity with a "followed" brand has a positive significant relationship with greater brand love (β = 0.642, t = 15.018, p < 0.01). Thus, H_3 is supported. The value of f² = 0.702, indicating that self-congruity with a "followed" brand had a medium effect size in explaining the variance of brand love.

The mediation test was performed by bootstrapping the sampling distribution of the indirect effect (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017; Zhao, Lynch Jr, & Chen, 2010). Bootstrapping yielded a higher level of statistical power when compared with the Sobel test (Hair et al., 2014). In this study, the mediation effect occurred when a change in self-congruity resulted in a change in brand love which, in turn, changed the brand outcomes. The findings thus show that brand love mediates the relationships between self-congruity and brand loyalty (β = 0.548, t = 10.018, p < 0.01), and also WoM (β = 0.593, t = 12.051, p < 0.01). The lower and upper limits for the mediating relationship between self-congruity, brand love, and brand loyalty are 0.631 and 0.790, respectively, while the lower and upper limits for the mediating relationship between self-congruity brand love and WoM are 0.547 and 0.730, respectively. There is also no zero in between the UL values and the LL values, respectively. This indicates the mediation effect, hence H_{4a} and H_{4b} are supported. The effect size in producing the R² for brand loyalty is small, with a value of f² = 0.428 while the effect size in producing the R² for WoM was medium, with a value of f² = 0.543.

5. Discussion

Several interesting findings are derived from the current study. First, the findings show that greater perceived attitude homophily, among the consumers and their friends on Instagram, do not predict greater perceived social tie strength. This finding contradicts the findings of Wallace et al. (2017), and Ruef et al. (2003) who found that group members'

similarity, in terms of psychological states, should cause and contribute to the formation of the group. Homophilous attitude should lead to attraction and interactions (Huston & Levinger, 1978), and similar behavioural patterns should result in increased associations (Cohen, 1977; Kandel, 1978). However, this is not the case in the current study.

One possibility attributing to this insignificant result may be the misperception of friends' attitudes (Jussim & Osgood, 1989; Huckfedlt & Sprague, 1995). Many people have the tendency to assume that their friends are similar to them, when the reality is that disagreements are simply not discussed (McPherson et al., 2001). This occurrence, inevitably also contributes to the weak social tie strength since the relationship is not as strong, despite being seemingly similar. Another reason could be because people have a tendency to control their social media postings, thus creating an extension of self that may not be completely true to oneself. For example, Odom, Zimmerman and Forlizzi (2011) found that teenage respondents controlled their Facebook contents by carefully deleting comments, photos and messages to avoid family members and friends seeing them, in case they get into trouble. Ahuvia (2005) also found multiphrenic and dialogical selves in online identities curated by individuals. Other researchers have also discussed identities being managed actively (Côté, 1996; Madden & Smith, 2010). Thus, Suler's (2004) quotation, "What others know or don't know about me is not always clear" showed that despite perceiving attitude homophily, users may still have a lack of trust or a "wall" that comes in between while having a strong social tie with others. This is especially true in the digital world where communities are imagined, and the members may not be known personally. The only information they have of each other could be mere pseudonyms, derived from their respective online contributions (Born, 2011). In most circumstances, users barely know the intimate details of one another, unlike close neighbourhood friends. This therefore, creates a sense of imaginary community, which aptly applies Granovetter's (1983) concept of weak ties (Belk, 2013). This outcome therefore, explains why greater perceived attitude homophily may not necessarily predict greater social tie strength.

Second, status homophily is found to be significantly associated with social tie strength. Festinger (1950) had stated that people were more likely to use a reference group which is more similar to them in structural positions. This theory of social comparison has been supported by other studies (Burt, 1992; Friedkin, 1993). People who are more alike in terms of their positions within a structural network are

also more likely to have interpersonal communications on issues related to the positions. Consequently, they tend to have more influence over each other, and may indicate a higher frequency of advice exchange, friendship and associations (McPherson et al., 2001). According to Wright (1997), property boundary is the strongest factor for friendships to occur in most societies. Blau, Beeker and Fitzpatrick (1984) also demonstrated that an area's composition of occupational and income structure, and educational distribution affected homophily. This in-advertently, reflects that similarity in terms of socioeconomic status plays a role in determining the strength of the social ties since one's place of stay is determined by one's socioeconomic status. Therefore, people with similar social status and socioeconomic prestige would also have stronger social ties with one another.

Third, morality homophily has the highest contribution in terms of effect size for explaining the variance on R²; it also has the strongest effect on social tie strength among the three homophily elements analysed. People tend to reject, keep a distance, or not accept the idea of having a relationship with others who do not share the same moral convictions (Skitka et al., 2005). In this regard, people tend to keep higher social distances.

This study illustrates a significant relationship between social tie strength and self-congruity. An individual is more likely to be congruent online if the friends on the online platform are also able to gauge if the online identities being portrayed were real or idealised (Back et al., 2010). In Back et al. (2010), participants were tested to see if their online "self" reflected their offline "self", that is, if they were congruent. The study found that indeed, the respondents' online profile reflected their offline "self". The well-acquainted friends were presumed to have strong social ties with the respondents. Therefore, this stronger social tie correlated with a more congruent portrayal of the "self" online. Consumers' online community, in this case, Instagram friends, would cause the consumers to take careful considerations of the objects chosen to be displayed online – such as brand "follows" – in an attempt to communicate the "self" (Schau & Gilly, 2003). This is because such displays enable the members (Instagram friends) to decode in agreement with the others within the group.

Consumers who are attracted to a brand that is self-congruent, are very much similar to the people who are attracted to one another due to homophily (Rauschnabel & Ahuvia, 2014). The sense of having an interpersonal connection or relationship with the brand would result

in brand love (Rauschnabel & Ahuvia, 2014). The current study, for instance, finds that items for self-congruity such as, "The brand is like me," or "I like to see myself as similar to the brand" are able to show that people have a sense of social relationship with the brand. This leads to a sense of attachment, like to a person, thereby resulting in an emotional reaction – love. This study has found that greater perceived self-congruity with a "followed" brand does indeed lead to greater brand love. Consumers would love a brand more when the brand is more like themselves (Wallace et al., 2017; Rauschnabel & Ahuvia, 2014).

The potential for self-extension could also contribute to greater brand love (Aron & Aron, 1996). For instance, if the brand was perceived to be similar to the consumer's ideal self or social ideal self, there is a greater brand love (Kressmann et al., 2006). This study supports the finding that self-congruity is an antecedent to brand relationship quality (Kressmann et al., 2006) because self-congruity with a "followed" brand has a stronger effect in determining brand love as an outcome. Overall, the most popular brands "Followed" on Instagram were fashion, sports and retail brands (Statista, 2018b). This is not surprising since Instagram members mainly used the site as a style guide. Users who frequently used Instagram to "follow" brands were also avid fashion followers (Phua et al., 2017a). They used this as a platform to showcase their personal styles and a sense of fashion (Phua et al., 2017a).

The findings of this study also supported the two mediation hypotheses. Wallace et al. (2017) had posited the mediation role of brand love in which it mediated the relationship between self-congruity and brand loyalty, as this study has also revealed. Brand love is also found to mediate the relationship between self-expressive brands and brand loyalty (Carroll & Ahuvia, 2006). This further highlights the role of brand love as the middle ground between the self and brand loyalty. The outcome generated by this study is also consistent with Wallace et al. (2017), and Carroll and Ahuvia (2006) whose findings showed that brand love positively and significantly predicted WoM; it also mediated the relationship between self-congruity with a brand and WoM.

6. Conclusion, Implications and Limitations

From a theoretical standpoint, after an extensive literature review, this study ought to be the first study to quantitatively measure self-congruence in four dimensions – actual self, ideal self, social self and ideal social self, with "followed" brands on Instagram. The study by

Wallace et al. (2017) focussed only on the actual and ideal self in the self-congruence measurement, which was situated in the context of Facebook instead of Instagram. Other studies tended to measure self-congruity with only two dimensions – actual self and ideal self (Usakli & Baloglu, 2011; Kressmann et al., 2006) when in fact, there are four dimensions (Grzeskowiak et al., 2016). This study has explored the antecedents and outcomes of self-congruent brand "follows" on Instagram, which contributes to the expanding body of literature that examines self-presentations, and congruence with the self on social network platforms, such as Facebook and Instagram (Belk, 2013; Back et al., 2010).

Most studies investigating the usage of brands for self-presentation purposes online were qualitative (Sekhon et al., 2015; Hollenbeck & Kaikati, 2012), but the current study heeded the call for a quantitative approach so as to corroborate previous findings, such as those by Hollenbeck and Kaikati (2012). This study has also contributed to the literature focussing on the relationship between homophily and social tie strength. Unlike the findings of Wallace et al. (2017), this study finds that attitude homophily did not predict stronger social tie strength among consumers and their friends on Instagram. The outcome has been attributed to the misperception of self, and the lack of confrontations of disagreements among the community of users (Jussim & Osgood, 1989; Huckfedlt & Sprague, 1995; McPherson et al., 2001). Nonetheless, status homophily predicts a stronger social tie strength among the consumers and their friends, resonating the findings of Wallace et al. (2017). This study has also contributed to literature by using an additional variable, morality homophily, which was added into the framework to determine its relationship in predicting social tie strength among consumers and their friends on Instagram. It was found to be the strongest predictor for predicting social tie strength, among the three homophily components used. The cause could be because moral convictions had a greater tendency to unite or divide (Skitka et al., 2005).

This study has also provided some insights into the relationship between brand "follows", and offline brand outcomes, in the virtual world. As there are few studies looking at brand outcomes in the virtual world (Wallace et al., 2017), this study has thus expanded the literature by showing that brands may not necessarily be within the reach of consumers' material reality.

From a managerial standpoint, this study has indicated that brand managers can target Instagram users who "follow" the brand, by categorising their brands according to status and moral values. The

Instagram users can then be extended to target their friends because they are homophilous in terms of status and morality, thereby leading to a stronger social tie, greater self-congruity with the brand "followed", and greater brand love. The greater brand love would also create a positive offline brand outcome, such as brand loyalty and WoM. This then enables the brands to develop a potentially strong, loyal base of customer, which would then contribute to the brand's long-term sales.

From the results of this study, it is recommended that marketing managers consider using their marketing intelligence to segment brand followers on Instagram according to their tie strengths. For instance, they can use frequency, recency and amount of time spent interacting with fellow friends as a starting point. The informatics should be able to give marketing managers an insight into the social tie strength between the users and their friends on Instagram. The social tie strength would therefore, give insight into the consumers' self-congruity with the brand "followed" on Instagram, thereby allowing marketers to know if these followers actually love the brand. This can contribute to positive offline brand outcomes.

Brand managers should also define the brands based on the customers' perspective on Instagram so as to create an emotional bond, brand love, between the consumers and the brand. The self-concept of consumers should be taken into consideration since self-congruity has a strong effect on whether or not brand love will exist. By humanising the brand, this external approach of making consumers feel a heightened sense of similarity with the brand can lead to brand love, hence positive offline brand outcomes. To bring it up a notch, marketing managers could even consider individual branding as this study has revealed that self-congruence with the "followed" brand has a strong effect on brand love. For example, consumers may contribute to brand personality through posts, like "what do you think of us?" Their feedback could be analysed to create brand personality that is congruent to their target markets.

This study also finds that brand love leads to positive offline brand outcomes such as brand loyalty and WoM. The proxy measure of "love" can be analysed through the comments of consumers which might suggest affection. This can be assessed through the length of the comments, use of emojis, amount and type of punctuations used, or choice of words, all of which are useful for analysis, thereby allowing managers to predict the customers' repurchase intention, and the likeliness of sharing WoM.

In retrospection, this study and its propositions were only generated based on the consumers' own perceptions of homophily, and their social tie strength with their friends on Instagram. A more objective measure such as the frequency of liking, commenting, or direct messaging one another on the platform would have been a more suitable measure to assess these variables. However, this would need to take into consideration their privacy and other ethical issues which need to be deliberated with care. Marsden (1990) had mentioned that it is adequate to measure perceptions of the cognitive network structure of a social influence topic. Future studies may thus consider other objective measurements of the consumers' cognitive network structures, such as, frequency of interactions between consumers and their friends on Instagram in terms of liking, commenting, or direct messaging. Future studies may also consider increasing the sample size so as to match the small sample size of the current study, which restrained the generalisability of the findings.

Overall, this study has revealed that morality homophily contributed the most to the strength of social ties, while attitude homophily did not. Six out of the seven proposed hypotheses were supported, and the outcome generated offered some insightful findings to both the marketing practitioners, and the academicians to better understand the relationship workings between cognitive networks, and brand outcomes in an online SNS context.

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