

The Relationship between Board Diversity, Board Independence and Corporate Fraud

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Abstract

This study examines the relationship between board diversity, board independence and corporate fraud. This study employs agency theory to support the hypotheses. This study examines a sample of 42 companies that are listed on Bursa Malaysia, comprising 21 fraudulent companies and 21 non-fraudulent companies during the period from 2013 until 2017; with two firm-year observations which brings to eighty-four firm-year observations altogether. This study uses secondary data that have been obtained from the narrative information of the Corporate Information section of the annual reports of the said sample companies. This study uses binary logistic regression analysis to examine whether there is significant relationship between board diversity and board independence and corporate fraud. The results evidence significant relationship between gender diversity, board experience and board independence and corporate fraud whereby the increase in the number of women directors, a mixed of directors with industrial and accounting/finance experience and independent directors decrease the likelihood of the occurrence of corporate fraud. On the other hand, the results fail to document any relationship between board age and board education and corporate fraud.

Keywords: *Corporate governance, corporate fraud, board diversity, board independence, theoretical perspective*

1. Introduction

Corporate fraud is neither an alien to all of us nor a new phenomenon. We have been enlightened by the news, in both mass media and print media, of corporate scandals across the globe; the collapse of Enron as the Wall Street darling in 2001 (Thomas, 2002), the WorldCom accounting scandal in 2002 (Tran, 2002), the Lehman Brothers fiasco in 2008 (Sraders, 2018), the India's Satyam Computer, an IT services and back-office accounting company, corporate scandal in 2009 (Chatterjee, 2009), the Malaysia's Megan Media Holdings Berhad accounting scandal in 2007 (Omar, Koya, Mohd Sanusi, & Shafie, 2014) and Silver Bird Group Berhad financial scandal in 2012 (Silver Bird sues ex-directors, ex-GM, firms and auditors, 2012), the Japan's Toshiba accounting scandal in 2014 (Kazuo, 2015), the South Africa's Steinhoff corporate scandal in 2017 (Skae, 2018) and to name just a few. These corporate frauds have significantly impacted the shareholders' wealth as well as the stakeholders. Whilst corporate fraud can be perpetrated by any level of employee, it is very much alarming when corporate frauds are perpetrated by the senior management. The PwC's Global Economic Crime and Fraud Survey 2018 (Malaysia Report) has reported that out of the reported numbers of the perpetrators, 32% of the perpetrators are the senior management (PricewaterhouseCoopers, 2018b). The high percentage of corporate fraud perpetrated by the senior management indicated that corporate

fraud is a significant menace to the shareholders, businesses as well as potential investors (Mohamed Sadique, Roudaki, Clark & Alias (2010).

Litzky & Greenhaus (2007) defined senior management as a team of individuals or persons who are responsible for setting the long-termed priorities for a corporation or an organization, for deciding the allocation of resources efficiently and effectively in achieving the long-termed goals, and for the resources optimization in relation to human capital, financial as well as material that are employed in the particular business, which include the Chief Executive Officer (“CEO”), the Chief Financial Officer (“CFO”), the Chief Operation Officer (“COO”), Chief Information Officer (“CIO”) and any other positions that fall within the C-Suite category (Neill, 2013).

Lokanan (2014) agreed that upon facing with declining profits, senior management will go to any length possible to manipulate and falsify the financial records of the corporation, to conserve a stable trend of reported income (Abdul Rahman & Salim, 2010, p. 97) and to ensure that ultimately the reported financial numbers will look much better than they actually are, with the main intention to swindle the shareholders in getting larger year-end bonus (Albrecht et al., 2012, p. 9). Otherwise, the senior management will have so much to lose if they do not meet the shareholders’ expectations. The involvement of the senior management in corporate fraud is very much devastating as they have been specially selected for their leadership, ability and character (Zahra, Rasyeed & Priem, 2005) and entrusted to perform the day-to-day operational and financial activities of a corporation or an organization, with the assistance of the subordinates in the specialized fields. In Enron’s case, regardless the financial turmoil, the senior management had to protect their compensation as well as their reputation for being the most successful senior management in the U.S.A. (Li, 2010).

It is undeniably true that corporate fraud leads to corporate failure and eventually portrays poor corporate governance. Poor corporate governance promotes the probability of corporate failure even for companies with good financial performances (Lakshan & Wijekoon, 2012). The Japan’s Toshiba accounting scandal has presented a good example of poor corporate governance even though they have actively adopted good corporate governance practices, whereby the senior management were driven by the desire to ensure the financial position of a corporation was always looking good to the outsiders (Kazuo, 2015). The legitimacy and credibility of the board of directors are questionable (García-Meca & Palacio, 2018) as the accountability of the board of directors is crucially important to corporate governance (Keay, 2017). The prime motivation from the world’s massive financial scandals is that many countries have undergone a series of governance changes for transparency and disclosure (Abdul Rahman & Salim, 2010, p. 123). Thereby, most companies have taken the necessary measures upon reinforcing the governance practices and intensifying the corporate accountability (Ho & Taylor, 2013).

Having said the above, this study is significant in examining the relationship between board diversity and board independence and corporate fraud. This study will add to the literature in this field and eventually will contribute important information for the shareholders during the selection and appointment of each and every member of the board. Moreover, this study highlights the importance of the said board characteristics prior to the selection and appointment of the members of the board in terms of knowledge, skills and experience. Discussions on this study have been divided into few chapters; Literature Review; Theoretical Framework and Hypotheses Development; Research Methodology; Findings, Analysis and Discussions; and Conclusion and Recommendation.

2. Literature Review And Hypothesis Development

2.1 Corporate Fraud

In general, corporate fraud can be defined as activities that involve manipulation of the financial information of a corporation with the primer intention to deceive the shareholders as well as the key stakeholders so that the financial numbers always look good to everybody's eyes. As this study focuses on the corporate fraud that is wreaked by the senior management which is very much pivotal, this section provides definition of corporate fraud in the context of the involvement of the senior management. Corporate fraud refers to actions that involve deliberate misrepresentation in financial statements (Zahra et al., 2007), falsification of financial transactions, the misapplication of accounting principles (Knapp & Knapp, 2001; Pai, Hsu & Wang, 2011) or insider trading for the purpose of accounting manipulation (Agrawal & Cooper, 2015) by the top management of which includes the chairperson, the vice chairperson, the CEO, the president, the CFO and the treasurer (Beasley, 1996). Corporate fraud is also termed as cooking-the-books activities (Abdul Hamid, Shafie, Othman, Wan Hussin & Fadzil, 2013) whereby the executive chefs are the chairman, the CEO as well as the CFO (Feng, Ge, Luo & Shevlin, 2011). Albrecht et al. (2012, p. 364) associated financial statement fraud with management fraud of which is rarely seen and often concealed through the collaboration amongst the senior management as well as their trusted subordinates and other counterparts outside of the corporation. Loebbecke et al. (as cited in Beasley, 1996) has agreed that financial statement fraud is initiated and perpetrated by the management with the presence of motivation and condition within the organization that allow a material management fraud to occur.

2.2 Board Diversity

Mishra & Jhunjhunwala (2013, p. 8) have categorized board diversity into two broad categories; surface level diversity and deep level diversity. The surface level diversity consists of observable features or readily detectable attributes ((Milliken & Martins, 1996) and less observable features or underlying attribute (Milliken & Martins, 1996) whereby under observable features, board diversity observes gender, age, nationality, race/ethnic background, whilst under less observable features, board diversity observes board education, board experience, board expertise. As for deep level diversity, it is more towards personality diversity, including cognitive features namely perceptions, values and personal characteristics. According to Milliken & Martins (1996), the reason for categorizing the board diversity is that "when differences between people are visible, they are particularly likely to evoke responses that are due directly to biases, prejudices, or stereotypes". In general, the key observables attributes that are studied include gender, age, education and experience (Erhardt, Werbel & Shrader, 2003). The need for board diversity is as much crucial as other contributing factors towards effective board of directors whereby board diversity brings substantial benefits to the board including new ideas and preferred interaction styles (Milliken & Martins, 1996) in hindering corporate fraud. Board diversity with differences in opinions and approaches would definitely encourage critical thinking and creative problem solving in the boardroom for better strategic decision making as well as strategic direction for corporate success (Mishra & Jhunjhunwala, 2013, p. 6). Should the senior management possess the power in the corporation, the board of directors are considered incapacitated in carrying out their fiduciary duties and therefore the board diversity value is meaningless (Dhir, 2015, p. 25).

2.3 Gender Diversity

Mishra & Jhunjhunwala (2013, p. 37) refers gender diversity as the proportion of women and men directors on corporate boards whereby when there are the less difference or gap between the number of women directors and men directors, the greater is the diversity. In general, board of directors seems to be dominated by men. Many questions have arisen in tandem with gender diversity on corporate boards; whether there is a scarcity of qualified women to be in the same boardroom with men directors, or whether women themselves are afraid to take the challenge and responsibilities of being directors, or whether women are lacking of human capital quality. Jubilee, Khong & Hung (2018) suggested that a corporation or an organization with gender diversity on its corporate board has greater potential for; (1) better understanding of markets and external linkages, (2) the increase in corporate's creativity and innovation, and (3) improved decision-makings that promote more alternative courses of action. According to Dhir (2015, p. 3), global statistics have shown that women are perceptible to be underrepresented on corporate boards albeit Norway, Sweden, and Finland exhibit the highest percentages of women directors on corporate boards, at 40.9%, 27%, and 26.8% respectively. In Malaysia, on average, women occupy only 7% - 7.8% of the boardroom seats (Qing & Chee-Wooi, 2016; Dhir, 2015, p. 3) and thus, women are seen to be underrepresented on corporate boards albeit high contribution in the workforce (Amran et al., 2014). This clearly shows that globally boards are still considered as "old boys club" (Mishra & Jhunjhunwala, 2013, p. 14).

A gender diverse board performs better monitoring and controlling functions in a corporation or an organization to ensure the senior management do not maximise their interest at the expense of the shareholders; with the unique characteristics of women directors of being meticulous and tactful help strengthen the boards. This is in line with the essence of the agency theory in the separation of ownership and control (Fama & Jensen, 1983). In previous studies on the relationship between gender diversity and corporate fraud, the agency theory suggests greater gender diversity on corporate boards contribute board effectiveness as the presence of women directors enhance the inclination to ask questions to the senior management should there be any irregularities in the financial statements (Damak, 2018). The agency theory also suggests the increase of the number of women on corporate boards decrease the likelihood of securities fraud as gender diverse board affect the ethical decision made by the board as a whole (Cumming, Leung & Rui, 2014).

There have been mixed results in previous studies on the relationship between gender diversity and corporate fraud. The results of the study by Damak (2018) found a significant negative effect of women directors' presence on earnings management level. The results of the study by Cumming et al. (2014) found negative relationship between gender diversity and securities fraud and indicated that the increase number of women in the boardroom decreases the occurrence of securities fraud. The results of the study by Kim, Roden & Cox (2013) presented a negative relationship between gender diversity and corporate fraud. The results of the study by Gavius, Segef & Yosef (2012) posited a negative relationship between the presence of female directors and earnings management. In contrast, Abdullah & Ku Ismail (2016) concluded otherwise as their empirical study found that women directors are not associated with the propensity for neither earnings management nor the direction of earnings management. The results of the study

by Hasnan, Marzuki & Shuhidan (2016) failed to document a statistically significant association between gender diversity and financial restatements.

Therefore, based on the above mentioned prevalent theoretical perspective, this study predicts the increase in the number of women directors in the boardroom leads to the increase of monitoring and controlling functions; and thereby decreases the occurrence of corporate fraud. However, as there have been conflicting findings in the previous studies, a non-directional hypothesis is therefore formulated (Sekaran & Bougie, 2016, p. 84).

H1: There is a significant relationship between gender diversity and corporate fraud.

2.4 Board Age Diversity

Mishra & Jhunjhunwala (2013, p. 75) defined board age diversity as the proportion of young and old directors on corporate boards whereby the less difference or gap between the number of young directors or old directors, the greater is the diversity. Based on a study carried out by the Governance Insights Center of PwC on age diversity in the boardroom amongst the S&P 500, the April 2018 report has suggested that directors of age of 50 and under are categorized as “Younger Directors” whilst directors of age of 51 and above are categorized as “Older Directors” (PricewaterhouseCoopers, 2018a). Age is always associated with working experience where the experience of older directors is more important and desirable than the younger directors as the older directors provide experience and wisdom whereas the younger directors are more energetic and active in planning ahead for the future (Kang, Cheng & Gray, 2007). Mishra & Jhunjhunwala (2013, p. 76) believed that a board with age diversity will be able to communicate better with stakeholders of varied age of group. Nonetheless, Milliken & Martins (1996) clarified that directors who are different in age will have the tendency to abandon the boardroom more frequently than the directors who are of the similar age. In other words, when the number of the members of the board of older age is greater than the younger members thus, the younger member’s propensity of absence is greater, and this will influence the quality of the strategic decision making and direction towards corporate fraud mitigation.

Heterogeneity of board age is equally essential upon performing monitoring and controlling functions in a corporation or an organization. The mixture of directors of different ages provides different oversight perspectives whereby younger directors are more aggressive and technology savvy too. As the technology is becoming more complex and advanced, normally young directors are more capable to adopt and adapt with the changes in technology (PricewaterhouseCoopers, 2019). Therefore, the combination of the age groups of the directors will vary the monitoring and controlling functions. This is in line with the essence of the agency theory in the separation of ownership and control (Fama & Jensen, 1983). The senior management perceive board age as motivation for monitoring; should the senior management be older than the directors, the monitoring function will be weak and the senior management will take every opportunity to instigate corporate fraud.

There have been mixed results in previous studies on the relationship between board age diversity and corporate fraud. The results of the study by Almashaqbeh, Shaari & Abdul-Jabbar (2019) found there is a negative relationship between board age diversity and real earnings

management. The results of the study by Xu, Zhang & Chen (2018) found that board age is negatively related to the likelihood of corporate financial fraud. The results of the study by Kim et al. (2013) posited a negative relationship between age and the likelihood of fraud. On the contrary, the results of the study by Hasnan et al. (2016) found that the effects of board characteristics on financial restatements in Malaysia fail to document a statistically significant association for board age.

Therefore, based on the above mentioned prevalent theoretical perspective, this study predicts the increase in the number of young directors in the boardroom leads to the increase of monitoring and controlling functions; and thereby decreases the occurrence of corporate fraud. However, as there have been conflicting findings in the previous studies, a non-directional hypothesis is therefore formulated (Sekaran & Bougie, 2016, p. 84).

H2: There is a significant relationship between board age and corporate fraud.

2.5 Board Experience Diversity

Board experience diversity refers to a corporate board that comprises directors with diverse functional experience which include industrial experience, accounting/financial experience, ICT experience, general management and to name a few (Mishra & Jhunjhunwala, 2013, p. 89) and possesses diverse thinking style (Goyal, Kakabadse & Kakabadse, 2019). Dass, Kini, Nanda, Onal & Wang (2015) suggested that the directors with industry experience are able to improve the board's ability to perform their fiduciary duty for the shareholders as well as to monitor the senior management's activities by narrowing the information gap between the board and the senior management. In other words, the senior management may not take advantage on the absence of information asymmetry if the board of directors are well versed in the related industry and its requirements. Meanwhile, Mishra & Jhunjhunwala (2013, p. 89) emphasized that the members of the board should be and in fact must be financially expert. Having experience in financial environment gives an extra bonus for the members of the board to deal with facts and figures presented by the senior management. The inexperienced directors may have difficulties in interpreting the given numbers and may not be able to uncover any hidden fraudulent financial transactions.

Heterogeneity of board experience performs better monitoring and controlling functions in a corporation or an organization to bridge the information gap between the board of directors and the senior management. The mixture of board of directors with various experience background, especially industrial as well as accounting/financial background, will vary the monitoring and controlling functions. This is in line with the essence of the agency theory in the separation of ownership and control (Fama & Jensen, 1983).

There have been mixed results in previous studies on the relationship between board experience diversity and corporate fraud. Notwithstanding the limited study on the relationship between the board experience diversity and corporate fraud, the results of the study by Badu & Appiah (2017) found a negative relationship between board experience and agency conflicts that eventually lead to corporate misconduct. On the other hand, the results of the study by Johari, Mohd Salleh, Jaffar & Hassan (2008) showed non-significant relationship between board experience and

earnings management which indicated that the inclusion of directors with good number of years they are in accounting and finance field does not make any difference in the earnings management practices.

Therefore, based on the above mentioned prevalent theoretical perspective, this study predicts the increase in the number of directors with industrial and accounting/financial experience leads to the increase of monitoring and controlling functions; and thereby in the boardroom decreases the occurrence of corporate fraud. However, as there have been conflicting findings in the previous studies, a non-directional hypothesis is therefore formulated (Sekaran & Bougie, 2016, p. 84).

H3: There is a significant relationship between board experience and corporate fraud.

2.6 Board Education Diversity

Park & Shin (2004) referred board education diversity as a corporate board that comprises directors with diverse educational qualification. According to Kagzi & Guha (2018), board diversity can be measured in two ways, the level of education and the subject stream or the nature of education; whereby the level of education refers to school level, under-graduation and post-graduation, whilst the subject stream or the nature of education refers to engineering, medical, dental, accounting, human resource and to name a few.

Education diversity helps to create more open communication environment whereby the combination of directors with different qualification background reduces both financial and non-financial information gap. Akpan & Amran (2014) argued that notwithstanding many studies on board characteristics are silent on the educational qualification of board of directors, education heterogeneity is equally pivotal in the boardroom as the directors on corporate board are responsible to monitor the senior management in executing the corporate strategy of the organization on behalf of the shareholders and thereby the shareholders must ensure the boardroom is occupied by educated members that would not allow their money to be squandered.

It is crucial to have directors on corporate boards that well understand the financial statements and efficiently monitor internal financial controls. In tandem with the fiduciary duty of the board of directors to protect the shareholder's wealth and the interest of the shareholders, it is the responsibility of the board of directors to avert corporate malfeasance or misconducts, however, only accounting/financially expert directors are able to do so (Park & Shin, 2004). Therefore, by having directors with financial/accounting qualification on corporate boards, the board of directors are able to promptly respond to the situation; should they find something has been wrongly recorded and oddly presented in the financial statements. For that matter, the MCCG 2017 for instance, has outlined the necessity for the Audit Committee members to possess necessary skills in discharging their duties; whereby they are required to be financially literate and must be able to fully understand all matters pertaining to financial transactions including the financial reporting process. Xie, Davidson III & DaDalt (2003) postulated that directors with accounting and finance professional/educational qualification are more familiar with the earnings management methods and they better understand the implications of earnings manipulation. On the contrary, directors with no accounting and finance professional/educational qualification may

be well-intentioned monitors but may not have the formal training or financial worldliness to fully understand the concept of earnings management. Jeanjean & Stolowy (2009) posited that the need for directors with accounting and finance professional/educational qualification are mainly because they will review the financial reports more critically; and thereby heighten their monitoring and advisory functions as a whole.

Heterogeneity of board education performs better monitoring and controlling functions in a corporation or an organization to bridge the information gap between the board of directors and the senior management. The directors with diverse perspectives and backgrounds enhance the scope of discussion and provide varied approaches to assessing information, which lead to better decision making (Beecher-Monas, 2007); and hence, increase the monitoring and controlling functions over the activities of the senior management. This is in line with the essence of the agency theory in the separation of ownership and control (Fama & Jensen, 1983).

Notwithstanding the limited study on the relationship between the board education diversity and corporate fraud, a study by Kim et al. (2013) evidenced that the coefficient on the percentage of finance and accounting professionals on the board is significantly negative whereby fraud is less likely to occur when more board members have finance and accounting background. On the other hand, the study by Johari et al. (2008) explained that the inclusion of directors with good accounting and finance academic/professional background does not make any difference in the earnings management practices.

Based on the above mentioned prevalent theoretical perspective, this study predicts the increase in the number of directors with accounting and financial academic/professional qualification in the boardroom leads to the increase of monitoring and controlling functions; and thereby decreases the occurrence of corporate fraud. However, as there have been conflicting findings in the previous studies, a non-directional hypothesis is therefore formulated (Sekaran & Bougie, 2016, p. 84).

H4: There is a significant relationship between board education and corporate fraud.

2.7 Board Independence

Board independence refers to the presence and participation of outside directors without a substantial business relationship with the company they serve (Badu & Appiah, 2017). Further elaboration by Badu & Appiah (2017) clarified that the corporate boards that are made up of independent directors will provide checks and balances in ensuring the senior management do not take advantage of their positions of the shareholders' wealth. Beecher-Monas (2007) agreed that the board should be independent from any financial ties or close social ties with the senior management.

In performing duties in monitoring and controlling, the outside directors must be independent from any influences by the senior management (Akpan & Amran, 2014). One of the most crucial essences or ingredients of agency theory is that the board of directors must be independent in mitigating problems associated with the separation of ownership and control; in this context, corporate misconduct (Jensen & Meckling, 1976). Agarwal & Medury (2013) argued that the

role of independent directors in fostering good corporate governance would enhance transparency and accountability amongst the senior management.

In general, a board consists of inside directors and outside directors (Madura, 2004, p. 60). Inside directors work for the organization. Beasley (1996) has classified outside directors into two categories namely independent directors and grey directors. Independent directors refer to outside directors who do not have any connection at all with the organization in terms of not being a substantial shareholder or not being employed as senior management within the past three years or not being retained as a professional advisor by the organization or not having any business relationship with the organization either as suppliers or customers (McCabe & Nowak, 2008) other than sitting on the corporate boards, whilst grey directors refer to outside directors who may have connection with the senior management in terms of being former employees or being major shareholders or being professional advisors or having business relationships with the organization (McCabe & Nowak, 2008) and thereby contravene the independent board competency.

The board of directors should, by all means, recognize that corporate fraud is detrimental to the shareholders as well as the stakeholders. The board of directors must be very much aware that the main objective of the board of directors is to serve the shareholders and protect the interest of the stakeholders. Unfortunately, many boards do not serve the shareholders but they serve the senior management instead (Madura, 2004, p. 60). Kaplan (as cited in Wagner, 2011) has raised his concerns about directors for not being truly independent; as directors should be able to demonstrate their independence in the sense of independence of income, independence of mind, independence of sources of information as well as being independent whilst maintaining the relationship with the organization (McCabe & Nowak, 2008). Independence of income refers to the independent directors that have an independent source of income and should not depend for their income on any one particular board. Independence of mind refers to the independent directors should not lack the diverse thinking that is crucially required to challenge the senior management's thinking. Independence of sources of information refers to the independent directors should be accessible to internal information and management sources. From an agency perspective, board of directors are the primary internal mechanism to monitor and control the senior management and hence, it is crucial for the board of directors to be completely independent from the senior management (Ruigrok et al., 2006).

An independent board must be independent from the influence of the senior management. The primary functions of the members of the boards are monitoring and controlling the senior management's activities on behalf of the shareholders. As such, the monitoring and controlling functions will be less effective should the boardroom be dominated by insider directors; and thereby the shareholders' wealth as well as the interest of the stakeholders will be jeopardized (Badu & Appiah, 2017). There have been mixed results in previous studies on the relationship between board independence and corporate fraud. The results of the study by Neville, Byron, Post & Ward (2019) presented board independence is negatively related to corporate misconduct namely earnings management, financial fraud, illegal behaviour, and regulatory violations. The results of the study by Busirin, Azmi & Zakaria (2015) found negative relationship between board independence and earnings management and suggested that the number of independent directors should be increased so that earnings manipulation activity can be reduced. The results

of the study by Kim et al. (2013) found negative relationship between board independence and corporate fraud and indicated that corporate fraud occurrence is more likely when there is lesser number of independent directors on corporate boards. The results of the study by Johari et al. (2008) found negative relationship between board independence and earnings management which indicated highlighted that the earnings management activities are discouraged with the increase in the number of independent directors in the boardroom. The results of the study by Chen & Lin (2007) found negative relationship between board independence and corporate fraud and stated that the proportion of independent directors is lower in fraudulent firms than the non-fraudulent firms. The results of the study by Beasley (1996) found negative relationship between board independence and financial statement fraud which indicated that the proportion of independent directors is lower in fraud firms than no fraud firms; thereby increases the effectiveness of monitoring function on the senior management in the likelihood of occurrence of financial statement fraud. On the contrary, a study conducted by Matoussi & Gharbi (2011) on the relationship between board independence and corporate fraud has given opposite results from the above mentioned studies.

Therefore, based on the above mentioned prevalent theoretical perspective, this study predicts the increase of the number of independent directors in the boardroom leads to the increase of monitoring and controlling functions; and thereby decreases the occurrence of corporate fraud. However, as there have been conflicting findings in the previous studies, a non-directional hypothesis is therefore formulated (Sekaran & Bougie, 2016, p. 84).

H5: There is a significant relationship between board independence and corporate fraud.

3. Research Methodology

3.1 Sampling Technique and Data Collection

The sample used to test the hypotheses consists of forty-two (42) public listed companies whereby twenty-one (21) of the companies represent fraudulent companies. According to Roscoe (as cited in Sekaran & Bougie, 2016, p. 264), for a research of limited experimental control such as matched pairs, it is possible to only have sample size of ten (10) to twenty (20) in order to produce successful results. Each and every fraudulent company is matched with the non-fraudulent company which creating a choice-based sample of twenty-one (21) fraudulent companies and twenty-one (21) non-fraudulent companies. Amongst the studies that used binary dependent variable are Beasley (1996), Uzun, Szewczyk & Varma (2004), Chen & Lin (2007), Matoussi & Gharbi (2011), Kim et al. (2013), Cumming et al. (2014), Capezio & Mavisakalyan (2016), as well as Hasnan et al. (2016).

In determining fraudulent companies, this study uses data from the companies that have been published in the Securities Commission Enforcement Release (“SCER”), from year 2013 until 2017. In addition to the above said source of data, the list of PN17 companies that are announced by Bursa Malaysia between 2013 until 2017 have also been identified. The list from the SCER and the list of PN17 companies are matched for redundancy elimination. The choice of the years is mainly because this study uses the MCCG 2017 as guideline whereby the MCCG 2017 has

been the latest revision of the Malaysian Code on Corporate Governance which clearly emphasizes that “the board should understand that the key principles of corporate governance such as effective controls, corporate culture grounded on ethical behaviour and transparency can reduce risk, corruption and mismanagement”.

Following Beasley (1996) and Matoussi & Gharbi (2011), the criteria for selecting the non-fraudulent companies as the matched-samples are as follows:-

- Market Trade: The non-fraudulent companies must trade within the same market as the fraudulent companies in the stock exchange;
- Time Period: The data collected from the non-fraudulent companies must be of the same period as the fraudulent companies;
- The Sector and Market Segment: The non-fraudulent companies must be in the same sector and market segment as the fraudulent companies as defined by Bursa Malaysia;
- Firm Size: The non-fraudulent companies should have a size within $\pm 30\%$ of the current market value of common equity as the fraudulent companies.

The information pertaining to the board of directors is extracted from the qualitative section of the annual reports. This study uses the narrative component of the corporate information from the Directors' Profile section. Each and every profile of a single member of the board should comprise of director's name, director's designation, director's age, director's qualification, director's experience, the tenure of directorship in the sample fraudulent and non-fraudulent companies and finally, the information on interlocking directorate of the particular director. As the data collected from the annual reports have been originally gathered by the administrative personnel of the particular sample fraudulent and non-fraudulent companies, this engagement is called secondary data analysis (MacInnes, 2017, p. 17). The reason for collecting data from the annual reports published on Bursa Malaysia's website is due to their validity, reliability and accuracy.

3.2 Research Model and Measurement

The dependent variable for this study is Corporate Fraud whilst the independent variables are gender diversity, board age, board experience, board education and board independence with the following variables operationalization; gender diversity (GDIV) is the percentage of the number of women directors who sit on the board over the total number of directors, board age (BAGE) is the percentage of the number of directors of age of 50 and under over the total number of directors, board experience (BEXP) is the total sum of (1) the percentage of the number of directors that have industry experience over the total number of directors and (2) the percentage of the number of directors that have accounting/financial experience over the total number of directors, board education (BEDU) is the percentage of the number of directors with accounting and finance professional/educational qualification divided by total number of directors, board independence (BIND) is the percentage of the number of independent directors divided by total number of directors.

In analysing and testing the relationships between the board diversity and board independence and corporate fraud, the following empirical model is used for the binary logistic regression analysis (Beasley, 1996; Uzun et al., 2004).

$$\text{Corporate Fraud} = \beta_0 + \beta_1 \text{GDIV} + \beta_2 \text{BAGE} + \beta_3 \text{BEXP} + \beta_4 \text{BEDU} + \beta_5 \text{BIND} + \epsilon$$

Where

- Corporate Fraud* = A dummy variable with a value of zero for fraudulent companies and a value of one for non-fraudulent companies
- GDIV* = The percentage of the number of women directors who sit on the board over the total number of directors
- BAGE* = The percentage of the number of directors of age of 50 and under over the total number of directors
- BEXP* = The total sum of the following:-
 The percentage of the number of directors that have industry experience over the total number of directors;
 The percentage of the number of directors that have accounting/financial experience over the total number of directors;
- BEDU* = The percentage of the number of directors with accounting and finance professional/educational qualification divided by total number of directors
- BIND* = The percentage of the number of independent directors divided by total number of directors

Prior to performing binary logistic regression analysis, the regression model analysis is performed to determine whether the model used in this study fits the data. The goodness-of-fit tests provide outputs that give an overall indication of the fit of the model whereby the model should contain the variables (main effects and interactions) which have been entered in the correct functional form (Hosmer and Lemeshow, 2000, p. 143). In measuring the goodness-of-fit, the Omnibus Test of Model Coefficients statistics, the Hosmer-Lemeshow Goodness of Fit test, the log-likelihood statistics as well as the Pseudo R2 measures are accordingly performed.

4. Findings, Analysis And Discussions

4.1 Descriptive Statistics

Table 1 presents the results for mean and median for GDIV, BAGE, BEXP, BEDU and BIND for fraudulent companies and non-fraudulent companies. For fraudulent companies, the standard deviation for GDIV, BAGE and BEXP are greater than the mean, hence, the data are more spread out from the mean, whilst the standard deviation for BEDU and BIND are smaller than the mean, hence, the data are less spread out from the mean. As for non-fraudulent companies, the standard deviation for all the variables are smaller than the mean, hence, the data are less spread out from the mean.

Table 1: The Mean and Standard Deviation for Fraudulent Companies and Non-Fraudulent Companies

	GDIV	BAGE	BEXP	BEDU	BIND
FRAUDULENT COMPANIES					
Mean	9.47	31.69	32.55	17.07	53.28
Standard Deviation	13.85	27.4	20.17	13.17	13.95
NON-FRAUDULENT COMPANIES					
Mean	18.03	22.73	58.94	22.07	43.24
Standard Deviation	5.78	12.04	17.71	9.02	9.52

From the above Table 1, the mean results for fraudulent companies and non-fraudulent companies for GDIV show that the average percentage of women directors in non-fraudulent companies is greater than the average percentage of women directors in fraudulent companies. For BAGE, the mean results for fraudulent companies and non-fraudulent companies interpret that the average percentage for the directors of age 50 and below in non-fraudulent companies is smaller than the average percentage for the directors of age 50 and below in fraudulent companies. For BEXP, the mean results for fraudulent companies and non-fraudulent companies interpret that the average percentage of the directors in non-fraudulent companies that practice experience diversity on their corporate board is greater than the fraudulent companies. For BEDU, the mean results for fraudulent companies and non-fraudulent companies interpret that the average percentage of directors that have accounting and finance academic/professional qualification in non-fraudulent companies is greater than the fraudulent companies. For BIND, the mean results for fraudulent companies and non-fraudulent companies interpret that the average percentage of independent directors in non-fraudulent companies is smaller than in fraudulent companies.

4.2 Inferential Analyses

Pallant (2011, p. 169) described the assumptions of binary logistic regression as sample size, multicollinearity and outliers. In determining whether the said assumptions are met, the Correlation and Collinearity Analyses and Goodness-of-Fit Tests are conducted. In the event of violation of any of the above said assumptions, the results of the binary logistic regression analysis will be jeopardised. For this study, the Correlation and Collinearity Analyses are used to test the multicollinearity assumptions whilst the Goodness-of-Fit Tests are used to test the sample size and outliers assumptions.

4.3 Correlation and Collinearity Analyses

In determining whether the independent variables are highly correlated, the Spearman Correlation Analyses as well as the Tolerance and Value Inflation Factor (“VIF”) tests are performed.

Table 2: Correlation Matrix

	Corporate Fraud	GDIV	BAGE	BEXP	BEDU	BIND
Corporate Fraud	1					
GDIV	-.414**	1				
BAGE	-.134	.028	1			
BEXP	-.565**	.246*	-.237*	1		
BEDU	.193	.175	.164	.457**	1	
BIND	-.379**	-.256*	.031	-.227*	-.044	1

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

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

From Table 2, the results of the Spearman rho indicated that only BEDU was found to have positive relationship with Corporate Fraud, whilst BAGE to have negative relationship with Corporate Fraud. On the other hand, GDIV, BEXP and BIND indicated negative significant relationship with Corporate Fraud. As all correlations statistics among the continuous

independent variables are lower than 0.8, there is no serious multicollinearity that may affect the logistic regression analysis (Field, 2013, p. 404).

Table 3: Tolerance and VIF Values

Independent Variables	Tolerance	VIF
GDIV	.853	1.172
BAGE	.745	1.342
BEXP	.550	1.818
BEDU	.609	1.643
BIND	.876	1.141

Based on Table 2, the obtained Tolerance value for each independent variable is greater than .01 (.853 for GDIV; .745 for BAGE; .550 for BEXP; .609 for BEDU; and .876 for BIND). These results indicated that there is no violation of multicollinearity assumption. This is also supported by the obtained VIF value whereby the VIF value for each independent variable is smaller than 10 (1.172 for GDIV; 1.342 for BAGE; 1.818 for BEXP; 1.643 for BEDU and 1.141 for BIND). These results showed that there is no multicollinearity symptom/problem in all independent variables in this study.

4.4 Goodness-of-Fit Tests

For this study, in conducting the Goodness-of-fit Tests on the empirical model used in this study, the Omnibus Test of Model Coefficients statistics, the Hosmer-Lemeshow Goodness of Fit test, the Log-Likelihood statistic and the Pseudo R2 measures are accordingly performed.

4.5 The omnibus test of model coefficients statistics

The results indicated that the model is a significant fit of the data as the chi-square in Table 4, is significant; $\chi^2(5) = 49.83$, $p < .001$. Therefore, the results supported the binary logistic regression model used for this study.

4.6 The Hosmer-Lemeshow goodness of fit test

Based on Table 4, the results indicated that the model is a significant fit of the data as the χ^2 value is greater than 5% and the p value is greater than the significance level of .05, $\chi^2(8) = 12.800$, $p = .119$. Therefore, the results supported the binary logistic regression model used for this study.

4.7 The Log-likelihood statistic and the pseudo R2 measures

Based on Table 4, the results showed that the -2 Log Likelihood is 66.620 whilst the values for the Cox & Snell R2 and the Nagelkerke R2 are read as .447 and .597 respectively, suggesting that between 44.7% and 59.7% of the variability is explained by this set of variables. Therefore, the results supported the binary logistic regression model used for this study.

Table 4: Model Summary of Binary Logistic Regression Analysis

	Model
Model coefficient (<i>p</i> -value)	.000
Model coefficient (χ^2)	49.83
Goodness-of-fit (<i>p</i> -value)	.119
Goodness-of-fit (χ^2)	12.800
-2 Log Likelihood	66.620
Cox & Snell R ²	.447
Nagelkerke R ²	.597

4.8 Binary Logistic Regression Model Analysis

Table 5: The Binary Logistic Regression Results

Variables	β	Sig.	Exp (β)
GDIV	-.073	.012	.816
BAGE	-.015	.402	.985
BEXP	-.051	.036	.950
BEDU	.041	.297	1.120
BIND	-.081	.012	.923

Gender diversity (GDIV)

Based on Table 5, the results show that there is a significance relationship between gender diversity (GDIV) and corporate fraud as the *p* value is smaller than the significance level of .05 (*p* = .012). GDIV recorded an odd ratio of .816 which was less than 1; indicating for every additional number of women directors on corporate boards were .816 times less likely to occur corporate fraud, controlling for other factors in the model. The results accepted Hypothesis 1 (H1) and supported the agency theory which suggests the increase in the number of women directors, decrease the incidents of corporate fraud. The results of this study also supported the studies by Damak (2018), Capezio & Mavisakalyan (2016) and Gavius et al. (2012). Damak (2018) suggest that women directors are more likely to be ethical in their conduct and perform better monitoring and supervision role. Meanwhile Capezio & Mavisakalyan (2016) reveal that the increase in the number of women directors on corporate boards lowers the incidence of corporate fraud. Due to women’s unique characteristics of being meticulous and ethical in their behaviour, Capezio & Mavisakalyan (2016) suggested that the inclusion of women directors is crucial in improving board monitoring effectiveness. Good corporate governance requires boards to be heterogeneous in order to maximize the shareholders’ wealth and ensures the interests are well protected. A balanced board must comprise of women and men directors that able to perform monitoring and advisory functions.

Board age (BAGE)

Referring to Table 5, the results show that this study failed to evidence the relationship between board age (BAGE) and corporate fraud as the *p* value is greater than the significance level of .05 (*p* = .402). This indicates that the results rejected Hypothesis 2 (H2) and neither supported the agency theory nor the study by Almashaqbeh et al. (2019) and Xu et al. (2018). As mentioned in

the literature about the need for the corporate boards to have a mixed of their members of different ages but in the real corporate world, the board members preferred to be of around the same ages so that the interaction between members is wholly on the same wavelength. In addition, age is always associated with knowledge and experience. The board members, who are older than the senior management, particularly the CEO; with their bountiful knowledge and vast experience in the capacity of directorship or senior management, will not be easily psychologically manipulated by the senior management. As wisdom comes with age, hence older directors make better decisions albeit there has not been any concrete evidence that says so.

Board experience (BEXP)

The results show that there is a significant relationship between board experience (BEXP) and corporate fraud as the p value is smaller than the significance level of .05 ($p = .001$). BEXP recorded an odd ratio of .950 which was less than 1; indicating for every additional number of directors with industrial and accounting/financial experience on corporate boards were .950 times less likely to occur corporate fraud, controlling for other factors in the model. In other words, the inclusion of experienced directors on corporate boards eventually decreases the number of corporate fraud occurrence. As such, the results accepted Hypothesis 3 (H3) and supported the agency theory which suggested the increase in the number of directors with industrial experience and the number of directors with accounting/financial experience, decrease the incidents of corporate fraud. Besides, the results of this study also supported the study by Badu & Appiah (2017). An ideal corporate board is composed by members with extensive industrial experience who can strongly serve on investment committee; extensive accounting experience who can strongly serve on audit committee; whilst other members of the board have other set of specializations (Madura, 2004, p. 62). On the contrary, the results of this study do not support the study by Johari et al. (2008).

Board education (BEDU)

Based on Table 5, the results show that this study failed to evidence the relationship between board education (BEDU) and corporate fraud as the p value is greater than the significance level of .05 ($p = .297$). This indicated that the results rejected Hypothesis 4 (H4) and neither supported the agency theory nor the study by Kim et al. (2013). However, the results of the hypothesis testing for BEDU are consistent with the study by Johari et al. (2008) whereby the directors' knowledge in the field of accounting and finance do not make any difference in the likelihood of corporate fraud occurrence.

Board independence (BIND)

Table 5 shows that there is a significant relationship between board independence (BIND) and corporate fraud as the p value is smaller than the significance level of .05 ($p = .012$). BIND recorded an odd ratio of .923 which was less than 1; indicating for every additional number of independent directors on corporate boards were .923 times less likely to occur corporate fraud, controlling for other factors in the model. In other words, the inclusion of Independent Non-Executive Directors on corporate boards eventually decreased the number of corporate fraud occurrence. Thus, the results accepted Hypothesis 5 (H5) and supported the agency theory which

suggests the increase in the number of independent directors, decrease the incidents of corporate fraud. The results of this study also supported the studies by Neville et al. (2019), Busirin et al. (2015), Johari et al. (2008), Chen & Lin (2007) and Beasley (1996). In the study by Neville et al. (2019), the results of their study showed that a corporation or an organization with a greater number of independent directors is less likely to engage in corporate misconduct. Busirin et al. (2015) found that there is a negative and significant relationship between board independence and earnings manipulation; whereby the earnings manipulation activities are reduced by the increase in the number of independent directors in the corporation or organization. Johari et al. (2008) found that a negative relationship between board independence and earnings management; with the indication that independent directors are able to discourage earnings management activities as the number of independence directors are more than 50%. Meanwhile, Chen & Lin (2007) showed that the proportion of independent directors have significantly negative relationship with the probability of corporate fraud; whereby the proportion of independent directors in fraud companies is lower than the proportion of independent directors in non-fraud companies. The proportion of independent directors is lower in fraud firms than no fraud firms; thereby increases the effectiveness of monitoring function on the senior management in the likelihood of occurrence of financial statement fraud (Beasley, 1996).

5. Conclusion and Limitations

Corporate fraud is seemed to be endless and the history of corporate fraud keeps repeating itself. It continues and grows. The impact of the corporate fraud itself is very much excruciating and affecting the societal economy as a whole. The losses from corporate fraud are massive. This troubling phenomenon is nothing new but yet the solutions are far from reach. The prime objective of putting forward the code of corporate governance is nothing else but to restore the shareholders' confidence and trust although the process is very much challenging. Following the collapse of the corporate giant due to corporate fraud, the legitimacy and credibility of the members of the board are thereby questioned.

As expected, gender diversity, board experience and board independence are found to have significant relationship with corporate fraud. The results indicated that for every increase; in the number of women directors; in the number of directors with industrial experience as well as in the number of directors with accounting/finance experience; and in the number of independent directors; there is a decrease in the likelihood of the occurrence of corporate fraud. The results accepted the H1, H3 and H5 and supported other studies that emphasized the need for gender diversity (Damak, 2018; Lenard et al., 2017; Capezio & Mavisakalyan, 2016; Gavius et al., 2012), experience diversity (Badu & Appiah, 2017) and board independence (Neville et al., 2019; Busirin et al., 2015; Johari et al., 2008; Chen & Lin, 2007; Beasley, 1996) in the boardroom and at the same time coincide with the principle of agency theory. On the contrary, board age and board education are found to have no relationship with corporate fraud. As for heterogeneity of board age, the results neither accepted the H2 nor supported other studies that emphasize the need for age diversity in the boardroom (Almashaqbeh et al., 2019; Xu et al., 2018; Kim et al., 2013). Heterogeneity of board age does not make any difference in the likelihood of corporate fraud occurrence. On the other hand, the results also neither accepted the H4 nor supported other studies that emphasize the need for education diversity in the boardroom (Kim et al., 2013). Madura (2004, p. 62) argued that having accounting qualification does not

necessarily enable the members of the board to detect deceptive accounting practices but instead, they may need actual experience in full spectrum of accounting functions in order to recognize many types of deceptive accounting practices.

The findings of this study have made initial contributions to other researchers in conducting study on board attributes specifically on board diversity. There have been substantial studies on the relationship between gender diversity as well as board independence and corporate fraud but very few studies have been conducted on the relationship between board age diversity, board experience diversity as well as board education diversity and corporate fraud. The scarcity of recent researches on board age, education and experience diversity has made it arduous for researchers to refer to. In addition to that, prior literature on board education diversity focuses on the level of education which includes high school leavers, bachelor degree, master degree and doctorate degree. However, this study focuses on the subject stream or the nature of education namely accounting and finance, engineering, business management and to name a few. Moreover, the results of this study demonstrate the importance of gender diversity, board experience diversity as well as board independence for Malaysia public corporations or organizations. Therefore, the results will guide the shareholders in relation to the appointment of board of directors in corporations or organizations as the incorporation of board diversity and board independence produce effective corporate boards for better monitoring (Beecher-Monas, 2007); to ensure the senior management do not maximise their interest at the expense of the shareholders. This is in line with the essence of the agency theory in the separation of ownership and control (Fama & Jensen, 1983); whereby greater board diversity and board independence on corporate boards contribute board effectiveness in reducing the information gap.

The main limitation of this study is the unavailability of corporate information of delisted companies whereby the annual reports could not be prepared due to the massive misstatements or irregularities in the financial data that cannot be audited and confirmed by the external auditors; or companies that are in liquidation. Therefore, the sample size has got to be reduced tremendously. Moreover, although there are other variables or predictors or factors that influence the occurrence of corporate fraud which are quantifiable, the author of this study believes that there are also the presences of non-quantifiable factors that could help mitigate the occurrence of corporate fraud, for instance, the corporate governance theory(s) that the corporate board adopts and adapts. It is tough or almost impossible to measure corporate governance theories that fraudulent companies have been practising.

6. Suggestions for Future Research

It is recommended that for future research, the study on the relationship between corporate attributes and corporate fraud could be conducted using both quantitative and qualitative data analyses. As this study uses secondary data, for future research, the data collection could also be gathered via interviews with the directors of fraudulent companies in order to support the hypotheses so that the results should be more refined. Managerial hegemony theory arrives upon the failure of agency theory whereby the senior management dominates the boardroom. Mohammed et al. (2017) agreed that the passive directors happened in developing countries; whereby the board of directors permit the senior management to make all the decisions whilst the board of directors endorsed all the decisions without any further say or comment on the decisions.

Therefore, it is recommended for future research to be conducted by using data from fraudulent companies in developed as well as developing countries. Perhaps, a thorough study on the impact of managerial hegemony theory as the cause of corporate failure of public companies could be conducted. In tandem with the growing complexity of ICT, the accounting and disclosure issues are relatively becoming more complex in today's businesses, and hence having directors with accounting/finance as well as ICT experience on corporate boards is utterly crucial. Hence, adding an ICT expertise to the boardroom can bring both new skill sets and fresh thinking whereby the input from the directors with ICT qualification and experience is essential to help directors to better oversee technology issues such as risks beyond cybersecurity, opportunities and disruptions, complex digital transformations and technology spending (Kark, Brown & Lewis, 2017). A tech-savvy board can be a big threat to corporate fraudsters. Therefore, for future research, it is recommended to include directors having ICT qualification and experience in the boardroom as part of experience and education diversity elements. Finally, for future research, perhaps researchers may also consider to include the possibility for the board to be dominated by supermajority of women directors; supermajority of young directors; supermajority of directors with accounting and finance academic/professional qualification; and/or supermajority of independent directors.

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