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# The Effects of Boards of Directors, Nomination Committees and Audit Committees on the Performance of Malaysian Listed Companies

NASRIN AZAR[a*], HAMED SAYYAR[b], ZARINA ZAKARIA[a] AND NOOR ADWA SULAIMAN[a]

[a]*Department of Accounting and Auditing, Faculty of Business and Accountancy, University Malaya, Malaysia.*
[b]*Department of Higher Education, College of Accounting, Varamin-Pishva Branch, Islamic Azad University, Iran*

## ABSTRACT

Despite several studies having previously explored the nexus between corporate governance and firm performance, certain areas continue to warrant further attention. These include the impact of corporate governance characteristics such as board training, board nationality, board education and nomination committee on firm performance. Thus, the aims of this study are to examine the impact of corporate governance on firm performance. To achieve this objective, data were collected from 542 companies listed on Bursa Malaysia for the period 2003–2012. Multiple regression was used for data analysis. The corporate governance characteristics examined were board of directors (size, independence, training, nationality, education), audit committee (size, independence, frequency of meetings) and nomination committee (size, independence, experience). Firm performance is measured using return on assets (ROA), return on equity (ROE) and Tobin's Q (TQ). In general, the results show that firms with effective corporate governance are more likely to have better firm performance. This means that there is a direct relationship between firms with strong corporate governance and firm performance. These findings are also robust for other estimators and sensitivity analysis. The results have a number of implications for investors, policymakers, researchers and regulators, especially with regard to enhancing firm performance.

**JEL Classification:** M21, M42
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* Corresponding author: Email: nasrinazar86@google.com

## INTRODUCTION

This study investigates the impact of corporate governance characteristics on firm performance. Firm performance is one of the most important issues for investors, stakeholders and policymakers. According to Harrison and Wicks (2013), both current and future investors use an evaluation of firm performance when deciding whether or not to continue their investment in a company. They will wish to know whether or not the company is profitable in order to make an investment decision. A range of indicators, such as corporate governance characteristics, can be used to inform improvements to firm performance.

Most of the previous evidence suggests that a lack of corporate governance is among the primary reasons for financial and corporate scandals (Al-Malkawi et al., 2014; Soltani, 2014). This has led to scholars in accounting paying closer attention to the need to identify which characteristics of corporate governance are the most effective for improving firm performance. Accordingly, various countries have opted to establish codes of corporate governance in order to protect the public from fraud and to guard against any potential future collapse of the economy.

Corporate governance is an emerging and exciting issue in the Malaysian context. It notably became the focus of attention following the Asian financial crisis of 1997 and also through recent crises and scandals such as those affecting Sime Bank and Malaysia Airlines (Mat Norwani et al., 2011). Post 1998, the Malaysian government chose to enhance good corporate governance by adopting corporate reforms comprising the introduction of a new code of corporate governance. The first Malaysian Code on Corporate Governance (MCCG) was issued in March 2000 with the aim of encouraging companies to use it within their operations as a means of developing an ideal governance framework. In October 2007, a revised version of the MCCG was issued, with all firms listed on Bursa Malaysia being required to follow it. The MCCG was then revised again in 2012, with the new code emphasising a strengthening of the structure of the board and its composition, recognising the role played by the directors. These revisions to the MCCG serve to highlight the importance of corporate governance and of government and regulators, as well as companies, utilising the code in the pursuit of their goals.

Recently, researchers have examined the direct effects of corporate characteristics on firm performance. In line with agency theory, previous studies have found that strong corporate governance produces a better monitoring role, which in turn reduces agency costs and thus enhances firm performance (Munisi and Randøy, 2013; Peni, 2014; Tuan, 2014; Ghofar and Islam, 2015).

Until recently, there has been no reliable evidence of the characteristics of effective corporate governance on firm performance because of mixed or inconclusive results (Bhagat and Bolton, 2008; Krafft et al., 2014; Tam and Tan, 2007). Some of the characteristics of corporate governance that have not been examined by previous studies are presented below:

1) Resource dependence theory – to explain the importance of the skills, knowledge and experience of the board of directors in leading to better monitoring and enhanced firm performance. These characteristics become effective when board members update and improve their knowledge and skills through training (Liu et al., 2014). Training is essential for reasons including the rapid and continuous development of technology (Venderbosch and Prins, 2010), the cost and time savings that an organisation can derive from training if it helps employees to become more efficient (Allen, 1995), and the fact that training can be cost-effective since it is cheaper to train existing employees than to recruit new ones in possession of the required skills (Hinkin and Tracey, 2000). In addition, the MCCG (2012, p.33) states that all directors should receive regular, periodic training, particularly in the areas of relevant new laws, regulations and changing commercial risks. Following the above discussion, it would appear that training plays an important role in business success. However, previous studies have tended to focus only on the effects of employee training on firm performance (Aragón et al., 2014; Mohr et al., 2014; Saleem and Khurshid, 2014) and have neglected to highlight the importance of board training on firm performance. Therefore, questions remain over how board training can affect firm performance.
2) Board education is recognised as board diversity, which can affect firm performance in terms of its organisational outputs. As a group, the board of directors is made up of a combination of capabilities and competencies that collectively demonstrates a pool of social capital and adds

value in relation to the execution of the function of board governance. The education of individual board members is important in decision-making. For instance, board members are experienced and qualified as a result of their education, which then enables them to fulfil their monitoring roles effectively (Carpenter and Westphal, 2001). Previous studies have examined the effect on firm performance of the education of members of the board of directors by level of graduation (Adams et al., 2015; Darmadi, 2013; Noor and Fadzil, 2013). However, according to Gantenbein and Volonté (2011), place of education in terms of domestic or abroad may actually be more relevant than demographic attributes for explaining firm performance. Therefore, the findings of this research can add new knowledge to the literature to demonstrate how board members' education in terms of their place of education can affect firm performance.

3) Board composition is one of the most important determinants of board effectiveness (De Jong et al., 2014). Both agency theory and resource dependence theory highlight the importance of a high-quality and well-selected board of directors in leading to better firm performance. The selection of board members is the main task of the nomination committee. Riabichenko (2014) argues that the presence of a nominating committee enhances board independence. Therefore, by having a nomination committee, its members can select the best candidates for the board of directors in order to reduce agency costs and improve firm performance. Shivdasani and Yermack (1999) and Hsu (2007) state that the existence of a nominating committee is likely to improve the separation of management and control in the firm and provide the resources and legitimacy necessary for committee members to independently exercise their duties. Nominating committee members will be judged, to a greater extent than other board members, based on the recruitment decisions they make, and they will have a strong interest in maintaining their own reputations by recruiting directors who will prove to be effective monitors of management. Most previous studies have examined only the relationship between the presence of a nomination committee and firm performance (El-Faitouri, 2014; Ntim, 2013; Fauzi and Locke, 2012; Heenetigala, 2011; Singhchawla et al., 2011) and have not focused on the effect of the characteristics of the nomination committee on firm performance. There has thus been a lack of studies examining the relationship between the characteristics of the nomination committee and firm performance in terms of illustrating how nomination committees can reduce agency problems in such a way that leads to enhanced firm performance.

Therefore, the objective of this study is to examine the relationship between corporate governance and firm performance. Furthermore, this study uses the following: 1) characteristics of corporate governance such as board size, board independence, board training, board nationality, board education, audit committee size, audit committee independence, audit committee meeting, nomination committee size, nomination committee independence, and nomination committee experience; and 2) firm performance measures including return on assets (ROA), return on equity (ROE) and Tobin's Q (TQ). The remainder of this paper is organised as follows. The second section briefly reviews the literature pertaining to the relationship between the board and committees and firm performance, followed by the development of the hypotheses. The data and research methodology employed are discussed in the third section, followed by the findings and results in the fourth section. The fifth section contains a discussion, while conclusions are drawn in the final section, along with a brief explanation of the study's limitations and suggestions for future research.

## THEORETICAL BACKGROUND, LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Shleifer and Vishny (1997) describe corporate governance as the ways used by investors to ensure they achieve a return on their investment. They found that mechanisms of corporate governance are legal and economic entities that can be changed for the better through the political process. Corporate governance is designed to pursue stakeholders' interests (e.g. obtaining a reasonable return on capital, reducing the misappropriation of assets) (Shleifer and Vishny, 1997). According to La Porta et al. (2002), corporate governance is a set of mechanisms that external investors use to protect themselves against expropriation from insiders. These mechanisms include the various applicable laws, rules and functions.

In sum, the index of the MCCG lists the various elements that companies are obliged to adhere to; however, the MCCG does not mention other important indexes, such as board diversity. Aside from the mechanism of corporate governance, religious traditions and board diversity (in terms of the education and nationality of members) also play an important role and influence the system of corporate governance used in any one country. Corporate governance covers a number of internal as well as external mechanisms that serve to decrease agency cost within a corporation and thereby lead to an increase in firm performance. This study considers two important mechanisms of governance to capture the overall state of the corporate governance of the company. These are the board of directors and board committees (i.e. audit and nomination committees).

## Board of Directors and Firm Performance

Fama and Jensen (1983) demonstrated that the main decision makers in an organisation are the members of the board of directors. Evidence shows that some board attributes may influence the members' effectiveness in their monitoring role. These are board size, board independence, board training, board nationality and board education.

Board size is believed to be a basic component of effective decision-making. Some researchers believe that larger boards are more influential since they have a greater ability to protect shareholders' interests (Dutordoir et al., 2014). Larger boards are able to strengthen the connection between corporations and their environments, advise the company on its strategic options and play a significant role in creating the identity of the corporation (Rahman and Ali, 2006). According to resource dependence theory, a large board of directors is more likely to have access to greater levels of external resources, industry experience and expertise, which can lead to better firm performance. However, other researchers hold the opposite view, believing smaller boards to be more influential in comparison to larger boards. This is because larger boards can experience problems related to coordination and communication, as well as more complex decision-making. Koufopoulos et al. (2010) examined the effect of board characteristics and board configuration on Greek shipping companies. They supported the agency theory, which suggests there is a negative relationship between board size and firm performance. This result is consistent with Andreou et al. (2014), who suggest that a smaller board size represents good corporate governance. Therefore, according to resource dependence theory and the existing researchers, the expectations of this study lead to the following hypothesis:

*H1: There is a significant positive relationship between board size and firm performance.*

According to agency theory, board independence may theoretically lead to better firm performance (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). According to Brennan and McDermott (2004), directors who are independent are related to the monitoring of managers' responsibility, thereby reducing the agency problem. Resource dependence theory, in line with agency theory, suggests that if companies have a proportion of board members who are independent, this may contribute to better decision-making, help companies to connect with their external environment and enhance their vital resources (Nguyen et al., 2014), all of which will contribute to the promotion of better performance (Kader et al., 2011). Some previous studies have found a positive relationship between board independence and firm performance (Boone et al., 2007; Coles et al., 2008; Knyazeva et al., 2013), while other studies, in contrast, have found no strong evidence to indicate that board independence improves firm performance (Bhagat and Black, 2002; Francis et al., 2012). Therefore, according to existing researchers, as explained above, the expectations of this study lead to the following hypothesis:

*H2: There is a significant positive relationship between board independence and firm performance.*

Board training is also regarded as being related to corporate governance and company performance. Yang (2006) examined the relationship between board training and firm performance in electronics companies, finding a positive relationship between them. Most of the previous studies have examined the relationship between employer or manager training and firm performance (Backes-Gellner et al., 2010; Thang et al., 2010), but not the effect of board training, with the exception of Jackson and Holland (1998), who found an impact of board training on firm performance. Resource dependence theory explains the importance of the skills, knowledge and experience of the board of directors in terms of contributing to better monitoring and thus enhancing firm performance. These elements become more effective when members of the board update and improve their knowledge and skills through training (Liu et al., 2014). In this regard, the MCCG (2012) highlights the need for all directors to receive regular training, specifically in relation to new laws and shifting commercial risks.

However, there is still a gap in the literature with regard to the impact of board member training on both board effectiveness and firm performance. Therefore, this study examines board training as an important element of board effectiveness that has the potential to improve firm performance; thus, in line with existing researchers, the expectations of this study lead to the following hypothesis:

*H3: There is a significant positive relationship between board training and firm performance.*

Board nationality (diversity) has attracted the interest of researchers from various disciplines. According to Miller and Del Carmen Triana (2009), the diversity of top managers and directors in areas such as their nationality and education can impact organisational outcomes such as firm performance. Ujunwa (2012) implied that foreign board members have greater financial flexibility, which in turn gives firms the opportunity to reduce their cost of capital by reducing cross-border information gaps and agency costs. These findings are consistent both with previous studies (Estelyiova and Nisar, 2012) and resource dependence theory, which argues that foreign board members can add valuable and diverse expertise to board effectiveness as a result of their different backgrounds that local members do not possess. With its characteristic multi-racial society, Malaysia contains a range of different cultures, all of which play a significant role in determining the culture of an organisation due to the fact that culture exerts a strong influence on the ways in which people behave (Abdullah, 1992). In sum, most previous studies have found that board diversity, such as the nationalities of board members, has a positive impact on firm performance. For the purpose of this study, board nationality is chosen as an important dimension of board diversity due to the potential benefits it can bring to firms. Therefore, according to existing researchers, the expectations of this study lead to the following hypothesis:

*H4: There is a significant positive relationship between board nationality and firm performance.*

Board education is recognised as an element of board diversity that can affect organisational outputs such as firm performance. As a group of individuals, a board of directors comprises a mix of capabilities and competencies that collectively demonstrate a pool of social capital and add value when executing the function of board governance. Ararat et al. (2015) suggest that board diversity positively affects board monitoring intensity, which strongly impacts firm performance. However, according to Gantenbein and Volonté (2011), place of education (e.g. domestic or abroad) may be more relevant than demographic attributes for explaining firm performance. They demonstrated that there is a lack of studies examining the effect of education experience on firm performance and also consider why the personal characteristics of the board of directors, such as education experience, are mostly ignored because of the lack of any theoretical foundation for explaining the impact that particular directors have on companies' performance. Therefore, following the discussion above, this study uses board education in terms of place of study as it is more relevant than demographic attributes for explaining companies' performance. The expectations of this study therefore lead to the following hypothesis:

*H5: There is a significant positive relationship between board education and firm performance.*

## Board Committee and Firm Performance

Board effectiveness will also depend on the operational qualities of the board committees. The best practices of corporate governance suggest that the board of directors should establish board committees within a firm. These should include an audit committee, nomination committee, risk management committee and remuneration committee. This study uses two main board committees, namely the audit committee and nomination committee, and ignores the risk management and remuneration committees since the information and data about risk management and remuneration committees are often limited owing to their relatively short history of establishment.

## Audit Committee and Firm Performance

According to Laux and Laux (2009), the audit committee has the major responsibilities of appointing, retaining and even dismissing external auditors in the event that they perform poorly. It oversees the internal audit function, ensures the quality of financial disclosure, assesses auditor independence and determines the quality and transparency of the firm's financial reporting. Walker (2004) states that the size of the audit committee, audit committee independence and the frequency with which it meets may impact its monitoring effectiveness.

Some scholars posit that a smaller size of audit committee serves as a more effective monitor (Al-Matari et al., 2012; Aldamen et al., 2012). These studies followed the agency theory, which indicates that small board committees are more effective as they tend not to suffer from coordination and/or communication problems. In contrast, according to resource dependence theory, Ghosh et al. (2010) and Beasley and Salterio (2001) claimed that larger audit committees are superior monitors due to their wider breadth of skills and knowledge. Therefore, according to the existing researchers, the expectations of this study lead to the following hypothesis:

*H6: There is a significant positive relationship between audit committee size and firm performance.*

According to agency theory, the presence of independent non-executive members on the audit committee enhances the effectiveness of its monitoring role. Previous studies have claimed that a larger percentage of independent directors can improve firm performance (Fama and Jensen, 1983). Chen et al. (2008) suggested that there is a positive relationship between audit committee independence and firm performance, as measured by TQ. Ilona (2008) also found a similar result when looking at the relationship between independence and firm performance as measured by ROA. Therefore, according to existing researchers, the expectations of this study lead to the following hypothesis:

*H7: There is a significant positive relationship between audit committee independence and firm performance.*

A greater frequency of meetings enables more effective monitoring, reduces agency cost and enhances firm performance (Aldamen et al., 2012; Xie et al., 2003). Sharma et al. (2009) suggested that a greater number of audit committee meetings has a positive effect on company performance. Choi et al. (2013) examined the effect of audit committee characteristics on firm performance in Greece and found a positive relationship between the frequency of meetings and firm performance. Therefore, according to existing researchers, the expectations of this study lead to the following hypothesis:

*H8: There is a significant positive relationship between frequency of audit committee meetings and firm performance.*

## Nomination Committee and Firm Performance

Based on agency theory, the monitoring mechanism of the nomination committee and the selection of directors plays an important role in enhancing corporate performance. Ruigrok et al. (2006) stated that their result in respect of the control and monitoring mechanism of the nomination committee appeared to be largely consistent with the agency theory perspective. However, research into the relationship between board committees and firm performance is scarce (Albring et al., 2014; Francis et al., 2012). Most studies in this area have focused on the effect of the establishment and presence of the nomination committee on firm performance, and not on any specific aspects of the nomination committee such as its size and other characteristics.

The typical purpose of a code of corporate governance is to encourage the board to establish a nomination committee for the purpose of recognising and choosing a new board of directors; however, there is a lack of studies into the size of the nomination committee and its impact on firm performance. This study, by examining the relationship between nomination committee size and firm performance, aims to show how this committee can reduce agency cost and therefore enhance firm performance. Horstmeyer (2011) suggested that a board with any particular characteristics will always prefer the security of a large nomination committee. If the committee has a large number of members, they will be able to propose themselves for re-election. In order to explore the possible effects of size of the nomination committee on firm performance, our next hypothesis is as follows.

*H9: There is a significant positive relationship between nomination committee size and firm performance.*

Shen and Jia (2005) asserted that an independent nomination committee consisting entirely of independent directors would be better positioned, for the sake of minority shareholders, to nominate independent directors as candidates. The independence of the nomination committee is considered to improve its ability to monitor and discipline firm management and in turn enhance firm performance (Singhchawla et al., 2011). Guo and Masulis (2013), in their paper, examined independence of the nomination committee on firm performance and found a positive relationship between nomination committee independence and firm performance. As such, in order to explore the possible effects of nomination committee independence on firm performance, our next hypothesis is:

*H10: There is a significant positive relationship between nomination committee independence and firm performance.*

The knowledge and experience of the nomination committee are among the most important elements within corporate governance. Nominating committees with high levels of experience are able to choose the best board of directors for their company, thereby positively affecting firm performance. Yet there has been no study conducted on nomination committee experience and firm performance. Therefore, this study develops its final hypothesis as follows:

*H11: There is a significant positive relationship between nomination committee experience and firm performance.*

In line with the above-mentioned hypotheses, the conceptual framework for this study is shown in Figure 1.

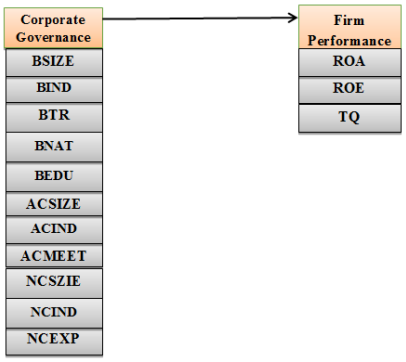


Figure 1 Research Conceptual Framework

## RESEARCH METHODOLOGY

### Sample Selection and Data

This study uses a sample population of companies listed on Bursa Malaysia, reflecting the reliability of both their financial statements and information and the fact that they are audited by audit firms. According to Alnasser (2012), extensive efforts are being made in Malaysia to promote the mechanisms of corporate governance, and the country has secured fourth position among the world's top countries that are growing in the direction of attracting investors. Therefore, the current study examines the financial period 2003–2012 for companies listed on Bursa Malaysia in order to contribute to any future revision of the MCCG that may be required. Table 1 contains a summary of the study's sample population. The data for the study were gathered from the annual reports of companies on the Bursa Malaysia website and DataStream.

Table 1 The Sample of the Study

| | Companies |
|---|---|
| Initial population | 980 |
| Financial industries | (40) |
| | 940 |
| Uncompleted data | (398) |
| Total population | 542 |
| Construction | 35 |
| Industrial | 174 |
| Plantation | 31 |
| Properties | 70 |
| Consumer products | 90 |
| Technology | 28 |
| Tin and Mining | 1 |
| Trade and service | 107 |
| Hotels | 4 |
| IPC | 1 |
| Reits | 1 |
| Total sample | 542 |

## Research Model and Variables

Multiple regression analysis was used to analyse the relationships between the dependent and independent variables. Specifically, the study was conducted based on the following research model:

$$FP = \alpha 0 + \beta 1BSIZE + \beta 2BIND + \beta 3BTR + \beta 4BNAT + \beta 5BEDU + \beta 6ACSIZE + \beta 7ACIND + \beta 8ACMEET + \beta 9NCSIZE + \beta 10NCIND + \beta 11NCEXP + \beta 12LEVERG + \beta 13LNASSET + \beta 14SG + \beta 15B + \varepsilon \quad \text{(Eq.1)}$$

All of the variables in the research model were measured as shown in Table 2.

Table 2 Description of the Variables

| Variable | Label | Description | Data source |
|---|---|---|---|
| Board size | BSIZE | The total number of members on the board at the end of the financial year | Annual report |
| Board independence | BIND | The total number of independent non-executive directors on the board | Annual report |
| Board training | BTR | Coded as 1 if the companies send their directors on an additional training programme; coded as 0 if otherwise | Annual report |
| Board nationality | BNAT | Proportion of foreign directors on the board | Annual report |
| Board education | BEDU | Proportion of directors on the board who graduated overseas | Annual report |
| Audit committee size | ACSIZE | The total number of members in the audit committee | Annual report |
| Audit committee independence | ACIND | Percentage of independent non-executive members on audit committee | Annual report |
| Audit committee meeting | ACMEET | If the audit committee meets at least four times per year, coded as 1; otherwise 0 | Annual report |
| Nomination committee size | NCSIZE | Total number of nomination committee members | Annual report |
| Nomination committee independence | NCIND | Coded as 1 if the majority of the nomination committee members are independent directors; coded 0 otherwise | Annual report |
| Nomination committee experience | NCEXP | Proportion of nomination committee members with human resource and related qualifications | Annual report |
| Return on assets | ROA | Net income / Total assets | DataStream |
| Return on equity | ROE | Net income / Shareholder's equity | DataStream |
| Tobin's Q | TQ | Market capitalisation/Total assets | DataStream |
| Leverage | LEV | The proportion of debt to total assets | DataStream |
| Total Asset | LNASSET | The natural logarithm of total assets | DataStream |
| Sales Growth | SG | The difference between current and previous year sales / Current year sales | DataStream |
| Beta | B | Systematic risk | DataStream |

## Data Analysis

Descriptive statistics, a correlation matrix and multivariate regression were utilised in this study to test the research model. Multivariate regression was applied after having first ensured that a number of assumptions had been met. According to Gujarati (2003), various multiple regression assumptions should be tested prior to applying the parametric tests to the models. These include normality, homogeneity, independence from error and multicollinearity. Panel data analysis was carried out using STATA software, which was used when conducting all of the analyses.

# FINDINGS AND RESULTS

## Descriptive Statistics

The descriptive statistics (Table 3) shows that all of the listed companies follow the recommendations of the MCCG (2000, 2007 and 2012) regarding board size and board independence. The average for board training

(64.6%) shows that a majority of the companies sent their directors on a training programme. The mean proportion of foreign directors on the board (board nationality) is around 5.2%. The statistics show that 58.6% of the board members had studied in overseas universities, with the remainder (41.4%) having studied at Malaysian universities. This finding is similar to that from a prior study in Malaysia by Ball and Chik (2001), who showed in their research that 58% of the members of boards of directors had studied at overseas universities. The descriptive statistics for audit committees also show that the majority of companies follow the requirements as recommended in the MCCG (2012). For the nomination committee variables, 2.81 is the mean for nomination committee size. In the sample used in this study, 79.2% of the committee members were independent non-executive members of boards of directors, while 46.1% had human resource and other related qualifications. Cheng and Rayton (2012) reported that 98% of their sample had nomination committees that were composed of independent non-executive members of boards of directors.

The descriptive statistics point to a negative ROA, thus indicating that resources (assets) are not being managed very well and that changes are required in order to prevent the business from becoming unprofitable. A positive ROA shows that the management has employed its assets well in order to generate a profit. Some researchers have argued that mild non-normality may not affect ordinary least regression outcomes in cases where there is a large volume of data (Ory and Mokhtarian, 2010). Furthermore, this study, following Xiang et al. (2014), uses Generalised Least Squares (GLS) and robust checks for the validity of its Ordinary Least Squares (OLS) regression results.

Table 3 Descriptive Statistics

| Variable | Mean | Median | Standard Deviation | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| BSIZE | 7.597 | 7.000 | 1.972 | 3.000 | 17.000 | 0.703 | 3.961 |
| BIND | 3.207 | 3.000 | 0.939 | 1.000 | 7.000 | 0.806 | 3.751 |
| BTR | 0.646 | 1.000 | 0.478 | 0.000 | 1.000 | -0.609 | 1.370 |
| ACSIZE | 3.348 | 3.000 | 0.627 | 1.000 | 8.000 | 1.636 | 6.506 |
| ACIND | 0.820 | 0.750 | 0.168 | 0.250 | 1.000 | -0.144 | 1.779 |
| ACMEET | 0.984 | 1.000 | 0.127 | 0.000 | 1.000 | -7.610 | 58.916 |
| NCSIZE | 2.813 | 3.000 | 0.864 | 0.000 | 6.000 | -1.542 | 7.752 |
| NCIND | 0.792 | 1.000 | 0.275 | 0.000 | 1.000 | -1.486 | 4.867 |
| NCEXP | 0.461 | 0.500 | 0.277 | 0.000 | 1.000 | -0.019 | 2.461 |
| BNAT | 0.052 | 0.000 | 0.132 | 0.000 | 0.750 | 2.872 | 11.047 |
| BEDU | 0.586 | 0.600 | 0.179 | 0.000 | 1.000 | 0.000 | 2.972 |
| ROA | 0.024 | 0.031 | 0.124 | -1.758 | 1.272 | -4.507 | 61.579 |
| ROE | 0.030 | 0.055 | 0.243 | -2.220 | 1.995 | -2.073 | 28.826 |
| TQ | 0.636 | 0.426 | 0.765 | 0.005 | 8.589 | 4.588 | 32.531 |
| LEV | 0.393 | 0.385 | 0.206 | 0.004 | 0.975 | 0.237 | 2.405 |
| LNASSET | 12.741 | 12.591 | 1.481 | 0.046 | 18.452 | 0.044 | 7.581 |
| SG | 0.106 | 0.070 | 0.359 | -0.991 | 1.976 | 1.318 | 7.583 |
| B | 1.012 | 0.985 | 0.576 | -2.585 | 3.987 | 0.371 | 4.401 |

## Correlation Matrix

Table 4 shows the results of the correlation matrix for all of the variables and related control variables used in the firm performance models. In this study, the correlation matrix shows that multicollinearity does not present a problem. The highest pairwise correlation among the variables is 49.95%, occurring between BIND and BSIZE. In the model, the correlation matrix shows that the inclusion of all of the independent variables would not lead to a multicollinearity problem. In the pairwise correlation matrix, the results of all of the independent variables with ROE and ROA show a significant correlation between them with the exception of ACIND, NCIND, NCEXP and BEDU. According to the correlation between ROA, ROE and related control variables, ROA and ROE are significantly correlated with all of the control variables. Table 4 shows that TQ is significantly correlated with all of the independent variables, except for ACMEET and NCSIZE. TQ is significantly correlated with all of the control variables except LNASSET.

Table 4 Correlation Matrix

| | BSIZE | BIND | BTR | ACSIZE | ACIND | ACMEET | NCSIZE | NCIND |
|---|---|---|---|---|---|---|---|---|
| BSIZE | 1 | | | | | | | |
| BIND | 0.4995*** | 1 | | | | | | |
| BTR | 0.0434*** | 0.1309*** | 1 | | | | | |
| ACSIZE | 0.3564*** | 0.3432*** | -0.0277** | 1 | | | | |
| ACIND | 0.0424*** | 0.339*** | 0.1371*** | -0.2679*** | 1 | | | |
| ACMEET | 0.0060 | -0.0055 | 0.059*** | 0.0115 | 0.0144 | 1 | | |
| NCSIZE | 0.1639*** | 0.2122*** | 0.0064 | 0.2221*** | 0.0212 | -0.0044 | 1 | |
| NCIND | 0.0644*** | 0.2122*** | 0.0236* | 0.0384*** | 0.2374*** | 0.0327** | 0.4631*** | 1 |
| NCEXP | 0.0087 | 0.0276** | 0.064*** | -0.0032 | 0.0907*** | -0.0069 | 0.2869*** | 0.3693*** |
| BNAT | 0.0589*** | -0.0257* | 0.0277** | 0.0529*** | -0.0455*** | 0.0178 | 0.0056 | -0.0792*** |
| BEDU | -0.0252* | 0.0309** | 0.0752*** | 0.0541*** | -0.0247* | -0.0050 | 0.024* | -0.1350*** |
| ROA | 0.1336*** | 0.0729*** | 0.0579*** | 0.0648*** | 0.0102 | 0.034** | 0.0324** | -0.0119 |
| ROE | 0.1265*** | 0.0701*** | 0.0473*** | 0.0742*** | 0.0071 | 0.037*** | 0.0294** | -0.0177 |
| TQ | 0.0451*** | 0.0304** | -0.033** | 0.1018*** | -0.0565*** | -0.0040 | 0.0096 | -0.0520*** |
| LEV | 0.0488*** | 0.0435*** | -0.0083 | 0.0118 | -0.0108 | 0.0285** | -0.0026 | 0.0123 |
| LNASSET | 0.3582*** | 0.3258*** | 0.1476*** | 0.2*** | 0.0434*** | 0.0647*** | 0.0937*** | -0.0216 |
| SG | 0.0436*** | 0.0095 | -0.0188 | 0.0191 | -0.0125 | -0.0110 | -0.0099 | -0.0416*** |
| B | -0.0216 | 0.0355*** | -0.0345** | -0.0159 | 0.0009 | 0.023* | -0.0179 | -0.0032 |

Table 4 Cont.

| | NCEXP | BNAT | BEDU | ROA | ROE | TQ | LEV | LNASSET | SG | B |
|---|---|---|---|---|---|---|---|---|---|---|
| BSIZE | | | | | | | | | | |
| BIND | | | | | | | | | | |
| BTR | | | | | | | | | | |
| ACSIZE | | | | | | | | | | |
| ACIND | | | | | | | | | | |
| ACMEET | | | | | | | | | | |
| NCSIZE | | | | | | | | | | |
| NCIND | | | | | | | | | | |
| NCEXP | 1 | | | | | | | | | |
| BNAT | -0.0725*** | 1 | | | | | | | | |
| BEDU | 0.1515*** | 0.1743*** | 1 | | | | | | | |
| ROA | 0.0053 | 0.0815*** | 0.0200 | 1 | | | | | | |
| ROE | -0.0060 | 0.0724*** | 0.0171 | 0.8336*** | 1 | | | | | |
| TQ | -0.0428*** | 0.1362*** | 0.0593*** | 0.2758*** | 0.3296*** | 1 | | | | |
| LEV | -0.0109 | -0.0686*** | -0.0464*** | -0.0968*** | -0.1253*** | -0.2124*** | 1 | | | |
| LNASSET | 0.0228* | 0.0161 | 0.1658*** | 0.2176*** | 0.1997*** | -0.0206 | 0.2393*** | 1 | | |
| SG | -0.0111 | -0.0052 | 0.0088 | 0.1614*** | 0.175*** | 0.0585*** | 0.0570*** | 0.0719*** | 1 | |
| B | -0.0208 | -0.1195*** | 0.0344** | -0.0887*** | -0.0833*** | -0.1129*** | 0.0950*** | 0.1437*** | 0.0062 | 1 |

## Statistical Tests and Sensitivity Analysis

This section contains several tests and estimators to determine whether or not the primary finding is robust against other results. These tests and different estimators comprise multicollinearity, heteroscedasticity, serial correlation and additional regression estimators.

## Multicollinearity

The methods commonly used to measure the degree of multicollinearity of independent with other independent variables in a regression model are "Variance Inflation Factor" (VIF) and "Tolerance" value (O'Brien, 2007). A multicollinearity problem occurs in cases where the VIF value for each variable is more than 10, in addition to where the tolerance value of variables is less than 0.10. Table 5 shows that there is no multicollinearity problem between the independent variables and other independent variables in the firm performance models.

Table 5 Multicollinearity Test for Firm Performance Model

| Variable | VIF | Tolerance |
|---|---|---|
| **BIND** | 1.88 | 0.532 |
| **NCIND** | 1.57 | 0.637 |
| **BSIZE** | 1.52 | 0.656 |
| **ACSIZE** | 1.49 | 0.672 |
| **ACIND** | 1.47 | 0.682 |
| **NCSIZE** | 1.4 | 0.713 |
| **LNASSET** | 1.37 | 0.727 |
| **NCEXP** | 1.26 | 0.791 |
| **BEDU** | 1.16 | 0.859 |
| **LEV** | 1.08 | 0.922 |

Table 5 Cont.

| | | |
|---|---|---|
| **BNAT** | 1.08 | 0.929 |
| **BTR** | 1.06 | 0.941 |
| **B** | 1.05 | 0.949 |
| **ACMEET** | 1.01 | 0.988 |
| **SG** | 1.01 | 0.990 |
| **Mean VIF** | 1.3 | |

## Heteroscedasticity

This study tests for the presence of heteroscedasticity using the Breusch-Pagan or Cook-Weisberg test. The significant p-value shows that the variance of error terms is not constant and thus the null hypothesis would be rejected. Table 6 indicates that the p-value is significant ($p < 0.01$), thus the H0 hypothesis must be rejected due to the presence of heteroscedasticity.

Table 6 Heteroscedasticity Test for Corporate Governance and Firm Performance Models

| Breusch-Pagan or Cook-Weisberg test | | | |
|---|---|---|---|
| H0: Constant variance | | | |
| Reject H0 if the p-value is significant | | | |
| | **ROA** | **ROE** | **TQ** |
| chi2(1) | 2542.55 | 2591.02 | 280.65 |
| Prob > chi2 | 0.000 | 0.000 | 0.000 |

## Serial Correlation

Table 7 shows the results of the Wooldridge test for serial correlation for the corporate governance and firm performance models. According to the result of the serial correlation test, the p-value is significant ($p<0.01$) and the H0 hypothesis must be rejected due to the presence of serial correlation.

Table 7 Serial Correlation Test for Corporate Governance and Firm Performance Models

| Wooldridge test | | | |
|---|---|---|---|
| H0: no first-order autocorrelation | | | |
| Reject H0 if the p-value is significant | | | |
| | **ROA** | **ROE** | **TQ** |
| F(1,541) | 18.804 | 12.366 | 32.083 |
| Prob > F | 0.000 | 0.000 | 0.000 |

## OLS Regression and Additional Regression Estimators for the Firm Performance Model

In this section, in addition to the main regression model (OLS), other estimators in the form of robust regression and GLS are used in the sensitivity analysis. Given the existence of heteroscedasticity and autocorrelation mentioned in the previous sections, this study uses GLS, which is capable of correcting the problems of heteroscedasticity and autocorrelation. Table 8 displays the results for all of the firm performance estimators, which comprise OLS, robust and GLS regression. The results of OLS for each firm performance measure are mostly consistent and similar to those for GLS, and they are robust.

Table 8 Multivariate Regression Models (OLS, GLS, Robust)

| Variable | ROA | | | ROE | | | TQ | | |
|---|---|---|---|---|---|---|---|---|---|
| | OLS | GLS | Robust | OLS | GLS | Robust | OLS | GLS | Robust |
| | Coefficient (t-statistics) | | | Coefficient (t-statistics) | | | Coefficient (t-statistics) | | |
| Intercept | -0.224 (-10.070)*** | -0.224 (-10.090)*** | -0.224 (-6.90)*** | -0.438 (-10.100)*** | -0.438 (-10.110)*** | -0.438 (-7.680)*** | 0.699 (5.04)*** | 0.699 5.050*** | 0.699 (4.190)*** |
| BSIZE | 0.003 (3.130)*** | 0.003 (3.130)*** | 0.003 (3.410)*** | 0.005 (2.750)*** | 0.005 (2.750)*** | 0.005 (3.250)*** | 0.001 (0.210) | 0.001 (0.210) | 0.001 (0.230) |
| BIND | -0.004 (-1.610) | -0.004 (-1.620) | -0.004 (-1.230) | -0.007 (-1.590) | -0.007 (-1.600) | -0.007 (-1.390) | 0.030 (2.080)** | 0.030 2.080** | 0.030 (2.30)*** |
| BTR | 0.005 (1.480) | 0.005 (1.480) | 0.005 (1.370) | 0.006 (0.920) | 0.006 (0.920) | 0.006 (0.870) | -0.063 (-2.930)*** | -0.063 -2.940*** | -0.063 (-2.820)*** |
| ACSIZE | 0.001 (-0.300) | 0.001 (0.300) | 0.001 (0.290) | 0.008 (1.310) | 0.008 (1.310) | 0.008 (1.290) | 0.084 (4.360)*** | 0.084 4.360*** | 0.084 (3.550)*** |
| ACIND | 0.006 (0.490) | 0.006 (0.490) | 0.006 (0.450) | 0.017 (0.750) | 0.017 (0.750) | 0.017 (0.710) | -0.148 (-2.060)** | -0.148 -2.070** | -0.148 (-2.090)** |
| ACMEET | 0.023 (1.830)* | 0.023 (1.830)* | 0.023 (1.210) | 0.055 (2.23)** | 0.055 (2.230)** | 0.055 (1.590) | 0.032 (0.410) | 0.032 (0.410) | 0.032 (0.410) |

Table 8 Cont.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NCSIZE | 0.001 (0.400) | 0.001 (0.400) | 0.001 (0.450) | 0.002 (0.440) | 0.002 (0.440) | 0.002 (0.500) | 0.004 (0.320) | 0.004 (0.320) | 0.004 (0.370) |
| NCIND | -0.002 (-0.280) | -0.002 (-0.280) | -0.002 (-0.280) | -0.007 (-0.510) | -0.007 (-0.510) | -0.007 (-0.500) | -0.078 (-1.720)* | -0.078 -1.720* | -0.078 (-1.760)* |
| NCEXP | 0.003 (0.410) | 0.003 (0.410) | 0.003 (0.370) | -0.004 (-0.310) | -0.004 (-0.310) | -0.004 (-0.290) | -0.084 (-2.080)** | -0.084 -2.080** | -0.084 (-2.430)** |
| BNAT | 0.054 (4.350)*** | 0.054 (4.350)*** | 0.054 (5.410)*** | 0.086 (3.53)*** | 0.086 (3.530)*** | 0.086 (4.40)*** | 0.572 (7.320)*** | 0.572 7.330*** | 0.572 (5.470)*** |
| BEDU | -0.026 (-2.70)*** | -0.026 (-2.70)*** | -0.026 (-2.380)** | -0.050 (-2.68)*** | -0.050 (-2.680)*** | -0.050 (-2.710)*** | 0.136 (2.260)** | 0.136 2.260** | 0.136 (2.530)*** |
| LEV | -0.093 (-11.60)*** | -0.093 (-11.620)*** | -0.093 (-8.380)*** | -0.216 (-13.7)*** | -0.216 (-13.720)*** | -0.216 (-7.880)*** | -0.762 (-15.160)*** | -0.762 -15.180*** | -0.762 (-12.80)*** |
| LNASSET | 0.021 (16.54)*** | 0.021 (16.560)*** | 0.021 (8.980)*** | 0.039 (15.64)*** | 0.039 (15.660)*** | 0.039 (9.730)*** | 0.005 (0.580) | 0.005 (0.580) | 0.005 (0.370) |
| SG | 0.053 (11.83)*** | 0.053 (11.850)*** | 0.053 (7.170)*** | 0.114 (13.07)*** | 0.114 (13.090)*** | 0.114 (8.980)*** | 0.141 (5.050)*** | 0.141 5.060*** | 0.141 (4.840)*** |
| B | -0.022 (-7.61)*** | -0.022 (-7.620)*** | -0.022 (-5.710)*** | -0.039 (-7)*** | -0.039 (-7.010)*** | -0.039 (-5.380)*** | -0.115 (-6.49)*** | -0.115 -6.50*** | -0.115 (-5.050)*** |
| *N* | 5420 | 5420 | 5420 | 5420 | 5420 | 5420 | 5420 | 5420 | 5420 |
| $R^2$ | 0.114 | | | 0.117 | | | 0.087 | | |
| Adj $R^2$ | 0.111 | | | 0.114 | | | 0.084 | | |

Note: *** are significant at p<0.01,** are significant at p<0.05 and * are significant at p<0.10.

A summary of the findings is shown in Table 9.

Table 9 Summary of the Findings

| Objectives | Hypothesis | Findings | | |
|---|---|---|---|---|
| | | **Accounting-Based Performance Measures** | | **Market-Based Performance Measure** |
| | | ROA | ROE | TQ |
| To examine the relationship between corporate governance and firm performance | H1: There is a significant positive relationship between board size and firm performance. | Supported (significantly and positively) | Supported (significantly and positively) | Not supported (insignificantly) |
| | H2: There is a significant positive relationship between board independence and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Supported (significantly and positively) |
| | H3: There is a significant positive relationship between board training and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Not supported (significantly and negatively) |
| | H4: There is a significant positive relationship between board nationality and firm performance. | Supported (significantly and positively) | Supported (significantly and positively) | Supported (significantly and positively) |
| | H5: There is a significant positive relationship between board education and firm performance. | Not supported (significantly and negatively) | Not supported (significantly and negatively) | Supported (significantly and positively) |
| | H6: There is a significant positive relationship between audit committee size and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Supported (significantly and positively) |
| | H7: There is a significant positive relationship between audit committee independence and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Not supported (significantly and negatively) |
| | H8: There is a significant positive relationship between frequency of audit committee meetings and firm performance. | Supported (significantly and positively) | Supported (significantly and positively) | Not supported (insignificantly) |
| | H9: There is a significant positive relationship between nomination committee size and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Not supported (insignificantly) |
| | H10: There is a significant positive relationship between nomination committee independence and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Not supported (significantly and negatively) |
| | H11: There is a significant positive relationship between nomination committee experience and firm performance. | Not supported (insignificantly) | Not supported (insignificantly) | Not supported (significantly and negatively) |

# DISCUSSION

## Discussion of the Relationship between Corporate Governance Characteristics and Firm Performance

## Board Size

The results reveal that board size is significantly and positively related to ROA and ROE. The positive relationship between board size and these accounting-based measures is in line with resource dependence theory, which suggests that a large board of directors is more likely to have greater access to outside resources, industry expertise and members who can confer legitimacy (Pfeffer and Salancik, 2003). The relationship found between board size and accounting-based measures is also consistent with previous studies (Abidin et al., 2014). By contrast, the results show that board size is insignificantly and positively related to TQ, although this is consistent with the findings of previous studies (Aljifri and Moustafa, 2007; Schultz et al., 2010; Wintoki et al., 2012). The insignificant association between board size and TQ may indicate that firm probability, as measured by ROA and ROE, is affected more by board size than by market value.

## Board Independence

Based on the results, board independence is insignificantly related to ROA and ROE. According to agency theory, a greater proportion of independent directors act to independently monitor situations where conflict arises between managers and shareholders. However, based on the insignificant result for the relationship between board independence and accounting-based measures, the finding of this study is in line with that of Buniamin et al. (2010), who demonstrated that board independence does not play an effective monitoring role in the resolution of agency problems, thus enhancing the accounting-based measures of firm performance. The possible reasons for the insignificant result are that both the role of independent directors in Malaysia and the appointment process differ from that seen in the U.S. and other western countries (Koerniadi and Tourani-Rad, 2012). A further possible reason for the insignificant result could be that not all independent directors are truly independent (Bhagat and Black, 2002; Koerniadi and Tourani-Rad, 2012). In contrast, the results also show that board independence is significantly and positively related to TQ. This positive relationship for board independence is in line with agency theory, which argues that the members of external boards of directors are expected to be free from management roles, thus allowing them to perform their duties as directors and provide greater value for the company. This result is also consistent with resource dependence theory, which suggests that independent members of the board of directors have greater access to outside resources and can bring these resources into the company to share with non-independent members to enhance firm value. The significant relationship between board independence and TQ is consistent with previous studies (Caprio et al., 2007; Rashid et al., 2010; Sanda et al., 2011).

## Board Training

The results show that only 64.6% of the listed companies in Malaysia had sent their directors on training programmes. The training of boards of directors enhances members' knowledge, which can positively affect firm performance (Nikandrou et al., 2008; Russell et al., 1985). However, the insignificant result demonstrates that additional board training has no effect on firm performance. A potential reason for this is the existing Bursa Malaysia requirement for all companies to send their directors on training programmes organised by Bursa Malaysia, and that the directors consequently improve their knowledge by attending such programmes. Therefore, companies have no need to send their directors for additional training. In contrast, board training is found to be significantly and negatively related to TQ, which means that additional training, whereby companies send their directors to attend training programmes, has not improved the market value of the companies listed on Bursa Malaysia. Some potential reasons for the negative relationship of board training refer to the nature of the training, which may include improper and/or irrelevant training, or training that is not aligned with the company strategy. This argument is supported by Tharenou et al. (2007), who state that training should impart new skills and knowledge if it is to be relevant, based on companies' needs.

## Board Nationality

Based on the results, board nationality is significantly and positively related to firm performance measures (ROA, ROE and TQ), thus showing that companies with a larger proportion of foreign board members have better firm performance. This result is also consistent with resource dependence theory and previous studies, which consider that foreign directors bring valuable experience obtained from outside resources and that they work to share information and resources that the local directors do not possess (Ararat et al., 2010; Garba and

Abubakar, 2014; Oxelheim and Randøy, 2003). These results are also in line with agency theory evidence that the presence of foreign board members promotes the quality of monitoring and reduces entrenchment of management and agency cost, thus leading to better firm performance.

## Board Education

Based on the results, board education has a significant and negative effect on ROA and ROE, thus suggesting that companies with board members who have graduated from overseas universities have lower firm performance. In general, people believe that studying at foreign universities improves their knowledge as well as their skills; however, based on the study, it appears that studying at Malaysian universities is associated with better accounting performance. This result is consistent with Darmadi (2013), who argued that board members who have graduated from domestic universities positively influence firm performance. Board members who have studied at Malaysian universities tend to already be familiar with the national regulations that they can use to reduce agency cost and which lead to improved company performance. In contrast, board education is significantly and positively related to firm value (TQ), thus suggesting that companies with board members who have graduated from overseas universities have a higher market value. This positive result shows that people believe that studying in a different country, especially in a developed country, enables these board members to develop both valuable knowledge and experience.

## Audit Committee Size

As shown in the findings, audit committee size is insignificantly but positively related to ROA and ROE. As explained by resource dependence theory, large board committees achieve better firm performance because they have more experience and knowledge which they can share with other members. The insignificant relationship between audit committee size and firm profitability, as measured by ROA and ROE, may also indicate that firm profitability is affected to a greater extent by factors other than audit committee size. This insignificant association between audit committee size and firm performance (ROA, ROE) is consistent with previous studies (Al-Matari et al., 2014; Nuryanah and Islam, 2011). In contrast, audit committee size is significantly and positively related to firm value. These results are in line with resource dependence theory, which suggests that a large board of directors can easily access outside resources and that they have more knowledge and experience, which leads to better firm performance. This result for the association between audit committee size and TQ is in line with previous studies (Al-Matari et al., 2014; Zhou et al., 2013).

## Audit Committee Independence

The findings show that audit committee independence is insignificantly related to ROA and ROE. This result is inconsistent with agency theory and resource dependence theory, with a potential reason being the insignificant relationship of board independence with firm performance, since an audit committee is a board subcommittee. This result is in line with previous studies that found an insignificant relationship between audit committee independence and firm performance (Al-Matari et al., 2012; Bhagat and Black, 2002). In contrast, audit committee independence is significantly and negatively related to firm value (TQ). According to agency theory, a greater proportion of independent non-executive directors can enhance the monitoring of management and thus reduce agency cost and enhance firm performance; however, the negative sign for independent audit committee shows that the presence of independent directors on the audit committee actually reduces firm value. This result is consistent with previous studies which argued that independent directors fail to bring information and knowledge to their companies, their jobs are part-time and they do not receive day-to-day information from the company (Brennan and Solomon, 2008; Rashid et al., 2010). These results are consistent with previous studies (Abidin et al., 2014; Adams, 2012; Bolton, 2012) which argued that more independent members do not bring sufficient experience to monitor managers and that there is the potential for them to not carry out their roles efficiently.

## Audit Committee Meetings

The findings in Chapter 4 revealed that the frequency of audit committee meetings is significantly and positively related to ROA and ROE. These results indicate that the frequency of audit committee meetings has a significant positive impact on firm probability as a result of the close monitoring of management by independent audit

committee members (Jensen, 1993). This relationship is in line with agency theory, which suggests that active audit committees who meet more frequently are more likely to monitor managers and offer better internal controls, thereby reducing agency cost and increasing firm performance. These associations are consistent with previous studies, where it was mentioned that an audit committee meeting frequency of at least four times per year positively affects firm performance (Aanu et al., 2014; Hoque et al., 2013; Munisi and Randøy, 2013). The results also indicate that frequency of audit committee meetings is insignificantly related to firm value, suggesting that frequency of audit committee meetings does not affect firm value. Vafeas (1999) stated that audit committee meetings can lead to a quick recovery from poor corporate performance. However, there are also costs associated with these meetings such as the opportunity cost of the executive members' time, which could probably be better spent on other corporate activities. An increased frequency of board meetings might also suggest that there is a risk to the company's performance (Haji, 2014).

### Nomination Committee Size

Horstmeyer (2011) argued that boards with any particular characteristics will always prefer the security offered by a large nomination committee. The MCCG (2012) recommends that a nomination committee should comprise at least three members. The result in the descriptive statistics showed the average nomination committee size to be around 2.8 members, indicating that companies listed on Bursa Malaysia still need to increase the size of their nomination committees. However, the findings showed that nomination committee size is insignificantly related to ROA, ROE and TQ. This insignificant relationship between nomination committee size and firm performance may be due to the relative newness of the nomination committee (Ng et al., 2013) in the code of corporate governance and the fact that not all companies have established this type of committee.

### Nomination Committee Independence

Independent nomination committee members are able to select the best candidate as well as an independent board of directors, which may enhance business success and lead to better firm performance. However, the result shows an insignificant relationship between nomination committee independence and firm performance. This result is consistent with a previous study that provided evidence that independent nomination committees are not significant in terms of firm performance (Ntim, 2009). However, the result in Chapter 4 indicated that nomination committee independence is significantly and negatively related to firm value (TQ). The negative association between independent nomination committee and firm value shows that companies with a high proportion of independent nomination committee members are in possession of less inside information from the companies, which leads to the selection of an unqualified board of directors, thereby augmenting agency problems and reducing firm performance. The negative relationship of board of directors' independence is in line with previous studies (McKnight and Weir, 2009).

### Nomination Committee Experience

In terms of the nomination committee, nomination committee members who have experience can select suitable board members, which can help the firm to reach its targets, thus enhancing company performance. However, the result from this study shows that the experience of members of the nomination committee does not have an effect on firm performance. A possible reason for this is that the nomination committee members, who are expected to select a qualified board of directors, do not properly utilise their experience when seeking to appoint the right directors to the board. A possible explanation for this insignificant relationship between nomination committee experience and firm performance is the dominance of the measurement variable. This study looks only at the human resource and related qualifications of nomination committee members; however, nomination committee members from different professions may also be relevant for inclusion on the company's nomination committee. In contrast, nomination committee experience is significantly and negatively related to firm value (TQ), thus indicating that the market negatively values having a strong nomination committee. The reason is that expert directors tend to have greater cognitive complexity, are less conservative in processing information and are more sensitive in terms of their decision-making, which can lead to incorrect decisions (Hitt and Tyler, 1991).

### Control Variables

All of the control variables were statistically significant with all three firm performance estimators, except LNASSET in the TQ model, and they were consistent with the main firm performance model. LEV is significantly and negatively related to firm performance at $p<0.001$. LNASSET is positively and significantly related to ROA and ROE, but not TQ, suggesting that larger companies have higher firm performance. SG is significantly and positively related and beta is significantly and negatively related to all estimators of the firm performance models, and they are consistent with OLS regression.

## CONCLUSION

Based on agency theory and resource dependence theory, this study has examined eleven characteristics of corporate governance and three measures of firm financial performance. The study suggests that an effective board is one with the following characteristics: larger size of board members, more independent non-executive directors, directors who attend training programmes, a high proportion of foreign board members and a higher proportion of directors who studied at an overseas university. An effective audit committee is defined as one that contains more directors, has a high proportion of independent non-executive members and has meetings scheduled at least four times a year. Similarly, an effective nomination committee is defined as one that comprises more members and a high proportion of independent non-executive members who have experience.

### Contribution of the Study

This study has found that board diversity (both board nationality and board education) can influence firm performance. This suggests that board diversity seems to be an added characteristic of corporate governance to reduce agency costs. Furthermore, this study used board nationality and board education as indicators of board diversity. In terms of board nationality, previous studies used only the race of board members as a measure of culture, such as Bumiputera and non-Bumiputera in the Malaysian context (Johl et al., 2012; Yatim et al., 2006). This study found that firms with boards that include foreign members perform better than their counterparts with less or no representation by foreigners on their boards. This result is novel because this is the first study to provide evidence of the impact of board members' nationality on firm performance. The results of this study are therefore useful for corporations and their nomination committees. The study provides nomination committee members with criteria for the selection of board members.

### Limitations of the Study

There are a number of other characteristics of corporate governance that may have an effect on firm performance and which have not been included in this research framework. For example, internal auditing, as one of the cornerstones of corporate governance, has been excluded from this study. Additionally, future studies should seek to consider external auditing as an external corporate governance mechanism. Moreover, ownership structure (i.e. managerial ownership, family ownership and institutional ownership) may have an influence on firm performance and should thus be included in future research. The second limitation of this research is related to the model chosen to measure firm performance. This study used only three measures of firm performance, namely ROA, ROE and TQ. However, other commonly used measures of firm performance, such as stock price and earnings per share, were not included in the study.

## REFERENCES

Aanu, O. S., Odianonsen, I. F. and Foyeke, O. I. (2014), "Effectiveness of Audit Committee and Firm Financial Performance in Nigeria: An Empirical Analysis", *Journal of Accounting and Auditing Research & Practice*, Vol. 2014, pp. 1-11.

Abdullah, A. (1992), "The Influence of Ethnic Values on Managerial Practices in Malaysia", *Malaysian Management Review*, Vol. 27 No. 1, pp. 3-18.

Abidin, Z. Z., Kamal, N. M. and Jusoff, K. (2014), "Board Structure and Corporate Performance in Malaysia", *International Journal of Economics and Finance*, Vol. 1 No. 1, pp. 150-165.

Adams, R. B. and Mehran, H. (2012), "Bank Board Structure and Performance: Evidence for Large Bank Holding Companies", *Journal of Financial Intermediation*, Vol. 21 No. 2, pp. 243-267.

Adams, R. B., Haan, J., Terjesen, S. and Ees, H. (2015), "Board Diversity: Moving the Field Forward", *Corporate Governance: An International Review*, Vol. 23 No. 2, pp. 77-82.

Albring, S., Robinson, D. and Robinson, M. (2014), "Audit committee financial expertise, corporate governance, and the voluntary switch from auditor provided to non-auditor-provided tax services", *Advances in Accounting*, Vol. 30 No. 1, pp. 81-94.

Aldamen, H., Duncan, K., Kelly, S., McNamara, R. and Nagel, S. (2012), "Audit Committee Characteristics and Firm Performance During the Global Financial Crisis", *Accounting & Finance*, Vol. 52 No. 4, pp. 971-1000.

Aljifri, K. and Moustafa, M. (2007), "The Impact of Corporate Governance Mechanisms on the Performance of UAE Firms: An Empirical Analysis", *Journal of Economic and Administrative Sciences*, Vol. 23 No. 2, pp. 71-93.

Allen, P. R. (1995), "Save money with a corporate style guide", *Technical communication*, Vol. 42 No. 2, pp. 284-289.

Al-Malkawi, H.-A. N., Pillai, R. and Bhatti, M. (2014), "Corporate Governance Practices in Emerging Markets: The Case of GCC Countries", *Economic Modelling*, Vol. 38, pp. 133-141.

Al-Matari, Y. A., Al-Swidi, A. K., Fadzil, F. H. B. F. H. and Al-Matari, E. M. (2012), "Board of Directors, Audit Committee Characteristics and the Performance of Saudi Arabia Listed Companies", *International Review of Management and Marketing*, Vol. 2 No. 4, pp. 241-251.

Alnasser, S. (2012), "What Has Changed? The Development of Corporate in Malaysia", *The Journal of Risk Finance*, Vol. 13 No. 3, pp. 269-276.

Andreou, P. C., Louca, C. and Panayides, P. M. (2014), "Corporate Governance, Financial Management Decisions and Firm Performance: Evidence From the Maritime Industry", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 63 No. 2014, pp. 59-78.

Aragón, M. I. B., Jiménez, D. J. and Valle, R. S. (2014), "Training and Performance: The Mediating Role of Organizational Learning", *BRQ Business Research Quarterly*, Vol. 17 No. 3, pp. 161-173.

Ararat, M., Aksu, M. and Tansel Cetin, A. (2015), "How Board Diversity Affects Firm Performance in Emerging Markets: Evidence on Channels in Controlled Firms", *Corporate Governance: An International Review*, Vol. 23.2 No. 2015, pp. 83-103.

Backes-Gellner, U., Wolter, S. C., Dumas, A. and Hanchane, S. (2010), "How Does Job-Training Increase Firm Performance? The Case of Morocco", *International Journal of Manpower*, Vol. 31 No. 5, pp. 585-602.

Ball, R. and Chik, R. (2001), "Early employment outcomes of home and foreign educated graduates–the Malaysian experience", *Higher Education*, Vol. 42 No. 2, pp. 171-189.

Beasley, M. S. and Salterio, S. E. (2001), "The relationship between board characteristics and voluntary improvements in audit committee composition and experience", *Contemporary Accounting Research*, Vol. 18 No. 4, pp. 539-570.

Bhagat, S. and Black, B. S. (2002), "The Non-Correlation between Board Independence and Long-Term Firm Performance", *Journal of Corporation Law*, Vol. 27, pp. 231-273.

Bolton, B. (2012), "Audit Committee Performance: Ownership vs. Independence–Did SOX Get it Wrong?", *Accounting & Finance*, Vol. 54 No. 1, pp. 83-112.

Boone, A. L., Casares Field, L., Karpoff, J. M. and Raheja, C. G. (2007), "The determinants of corporate board size and composition: An empirical analysis", *Journal of Financial Economics*, Vol. 85 No. 1, pp. 66-101.

Brennan, N. M. and Solomon, J. (2008), "Corporate Governance, Accountability and Mechanisms of Accountability: An Pverview", *Accounting, Auditing & Accountability Journal*, Vol. 21 No. 7, pp. 885-906.

Buniamin, S., Alrazi, B., Johari, N. H. and Rahman, N. R. A. (2010), "An Investigation of the Association Between Corporate Governance and Environmental Reporting in Malaysia", *Asian Journal of Business and Accounting*, Vol. 1 No. 2, pp. 639-647.

Caprio, G., Laeven, L. and Levine, R. (2007), "Governance and Bank Valuation", *Journal of Financial Intermediation*, Vol. 16 No. 4, pp. 584-617.

Carpenter, M. A. and Westphal, J. D. (2001), "The Strategic Context of External Network Ties: Examining the Impact of Director Appointments on Board Involvement in Strategic Decision Making", *Academy of Management Journal.* Vol. 44 No. 4, pp. 639-660.

Chen, C. Y., Lin, C. J. and Lin, Y. C. (2008), "Audit Partner Tenure, Audit Firm Tenure, and Discretionary Accruals: Does Long Auditor Tenure Impair Earnings Quality?", *Contemporary Accounting Research*, Vo. 25 No. 2, pp. 415-445.

Cheng, S. and Rayton, B. A. (2012), "A study of the incidence and independence of nomination committees", *International Journal of Corporate Governance*, Vol. 3 No. 1, pp. 84-104.

Choi, J. J., Lam, K. C., Sami, H. and Zhou, H. (2013), "Foreign Ownership and Information Asymmetry", *Asia-Pacific Journal of Financial Studies*, Vol. 42 No. 2, pp. 141-166.

Coles, J. L., Lemmon, M. and Wang, Y. (2008), "The joint determinants of managerial ownership, board independence, and firm performance", *SSRN: http://ssrn. com/abstract.*

Darmadi, S. (2013), "Board Members' Education and Firm Performance: Evidence from a Developing Economy", *International Journal of Commerce and Management*, Vol. 23 No. 2, pp. 113-135.

De Jong, A., Hooghiemstra, R. and van Rinsum, M. (2014), "To Accept or Refuse an Offer to Join the Board: Dutch Evidence', *Long Range Planning*, Vol. 47 No. 5, pp. 262-276.

Dutordoir, M., Strong, N. and Ziegan, M. C. (2014), "Does Corporate Governance Influence Convertible Bond Issuance?", *Journal of Corporate Finance*, Vol. 24, pp. 80-100.

El-Faitouri, R. (2014), "Board of Directors and Tobin's Q: Evidence from UK Firms", *Journal of Finance and Accounting*, Vol. 2 No. 4, pp. 82-99.

Estelyiova, K. and Nisar, T. M. (2012), "The Determinants and Performance Effects of Diverse Nationality Boards", *Available at SSRN 2100494.*

Fama, E. F. and Jensen, M. C. (1983), "Separation of Ownership and Control", *Journal of Law and Economics*, Vol. 26 No. 2, pp. 301-325.

Fauzi, F. and Locke, S. (2012), "Board Structure, Ownership Structure and Firm Performance: A Study of New Zealand Listed Firms"

Francis, B., Hasan, I., and Wu, Q. (2012), "Do corporate boards affect firm performance? New evidence from the financial crisis", New Evidence from the Financial Crisis (April 12, 2012), *Bank of Finland Research Discussion Paper* (11).

Gantenbein, P. and Volonté, C. (2011), "Director characteristics and firm performance o. Document Number)

Garba, T. and Abubakar, B. A. (2014), "Corporate Board Diversity and Financial Performance of Insurance Companies in Nigeria: An Application of Panel Data Approach". *Asian Economic and Financial Review*, Vol. 4 No. 2, pp. 257-277.

Ghofar, A. and Islam, S. M. (2015), "Conceptual Framework and Hypotheses Development", *In Corporate Governance and Contingency Theory* (pp. 41- 52): Springer.

Ghosh, A., Marra, A. and Moon, D. (2010), "Corporate Boards, Audit Committees, and Earnings Management: Pre-and Post-SOX Evidence", *Journal of Business Finance & Accounting*, Vol. 37 No. 9-10, pp. 1145-1176.

Gujarati, D. N. (2003), *Basic Econometrics fourth edition McGraw-Hill*. New York.

Guo, L. and Masulis, R. (2013), "Board Structure and Monitoring: New Evidence from CEO Turnover", *Available at SSRN 2021468.*

Haji, A. A. (2014), "The Relationship Between Corporate Governance Attributes and Firm Performance Before and After the Revised Code: Some Malaysian Evidence", *International Journal of Commerce and Management*, Vol. 24 No. 2, pp. 3-3.

Heenetigala, K. (2011), Corporate Governance Practices and Firm Performance of Listed Companies in Sri Lanka. Victoria University Melbourne.

Hinkin, T. R. and Tracey, J. B. (2000), "The cost of turnover: Putting a price on the learning curve", *The Cornell Hotel and Restaurant Administration Quarterly*, Vol. 41 No. 3, pp. 14-14.

Hitt, M. A. and Tyler, B. B. (1991), "Strategic Decision Models: Integrating Different Perspectives", *Strategic Management Journal*, Vol. 12 No. 5, pp. 327-351.

Hoque, M. Z., Islam, M. and Azam, M. N. (2013), "Board Committee Meetings and Firm Financial Performance: An Investigation of Australian Companies", *International Review of Finance*.

Horstmeyer, D. (2011), The Operational Form of the Board: Working Paper. Document Number)

Hsu, H.-E. (2007), Boards of Directors and Audit Committees in Initial Public Offerings. ProQuest.

Ilona, D. (2008). Board quality and firm performance. *Master Dissertation, University Utara Malaysia.*

Jackson, D. K. and Holland, T. P. (1998), "Measuring the Effectiveness of Nonprofit Boards", *Nonprofit and Voluntary Sector Quarterly*, Vol. 27 No. 2, pp. 159-182.

Johl, S., Subramaniam, N. and Mat Zain, M. (2012), "Audit committee and CEO ethnicity and audit fees: some Malaysian evidence", *The International Journal of Accounting*, Vol. 47 No. 3, pp. 302-332.

Kader, S., Cigdem, S. B. and Aygun, O. (2011), "The impact of board composition corporate financial and social responsibility performance: Evidence from public-listed companies in Turkey", *African Journal of Business Management*, Vol. 5 No. 7, pp. 2959-2978.

Koerniadi, H. and Tourani-Rad, A. (2012), "Does board independence matter? Evidence from New Zealand", *Australasian Accounting, Business and Finance Journal*, Vol. 6 No. 2, pp. 3-18.

Koufopoulos, D. N., Lagoudis, I. N., Theotokas, I. N. and Syriopoulos, T. C. (2010), "Corporate Governance and Board Practices by Greek Shipping Management Companies", *Corporate Governance: The International Journal of Business in Society*, Vol. 10 No. 3, pp. 261-278.

La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2002), "Government Ownership of Banks", *The Journal of Finance*, Vol. 57 No. 1, pp. 265-301.

Laux, C. and Laux, V. (2009), "Board Committees, CEO Compensation, and Earnings Management", *The Accounting Review*, Vol. 84 No. 3, pp. 869-891.

Lipton, M. and Lorsch, J. W. (1992), "A Modest Proposal for Improved Corporate Governance", *The Business Lawyer*, pp. 59-77.

Liu, Z., Li, J., Zhu, H., Cai, Z. and Wang, L. (2014), "Chinese Firms' Sustainable Development—The Role of Future Orientation, Environmental Commitment, and Employee Training", *Asia Pacific Journal of Management*, Vol. 31 No. 1, pp. 195-213.

Mat Norwani, N., Mohamad, Z. and Chek, I. (2011), "Corporate Governance Failure and Impact on Financial Reporting Within Selected Companies", *International Journal of Business and Social Science*, Vol. 2 No. 21, pp. 205-213.

McKnight, P. J. and Weir, C. (2009), "Agency Costs, Corporate Governance Mechanisms and Ownership Structure in Large UK Publicly Quoted Companies: A Panel Data Analysis", *The Quarterly Review of Economics and Finance*, Vol. 49 No. 2, pp. 139-158.

Miller, T. and del Carmen Triana, M. (2009), "Demographic Diversity in the Boardroom: Mediators of the Board Diversity–Firm Performance Relationship", *Journal of Management Studies*, Vol. 46 No. 5, pp. 755-786.

Mohr, A., Fastoso, F., Wang, C. and Shirodkar, V. (2014), "Testing the Regional Performance of Multinational Enterprises in the Retail Sector: The Moderating Effects of Timing, Speed and Experience", *British Journal of Management*, Vol. 25 No. S1, pp. S100-S115.

Munisi, G. and Randøy, T. (2013), "Corporate Governance and Company Performance Across Sub-Saharan African Countries", *Journal of Economics and Business.*

Ng, T.-H., Chong, L.-L. and Ismail, H. (2013), "Is the Risk Management Committee Only a Procedural Compliance? An Insight Into Managing Risk Taking Among Insurance Companies in Malaysia", *The Journal of Risk Finance*, Vol. 14 No. 1, pp. 71-86.

Nguyen, T., Locke, S. and Reddy, K. (2014), "A Dynamic Estimation of Governance Structures and Financial Performance for Singaporean Companies", *Economic Modelling*, Vol. 40, pp. 1-11.

Nikandrou, I., Apospori, E., Panayotopoulou, L., Stavrou, E. T. and Papalexandris, N. (2008), "Training and Firm Performance in Europe: The Impact of National and Organizational Characteristics", *The International Journal of Human Resource Management*, Vol. 19 No. 11, pp. 2057-2078.

Noor, M. A. M. and Fadzil, F. H. (2013), "Board Characteristics and Performance from Perspective of Governance Code in Malaysia", *World Review of Business Research*, Vol. 3 No. 3, pp. 191-206.

Ntim, C. G. (2009), Internal Corporate Governance Structures and Firm Financial Performance: Evidence from South African Listed Firms. *University of Glasgow*.

Ntim, C. G. (2013). "Monitoring Board Committee Structure and Market Valuation in Large Publicly Listed South African Corporations", *International Journal of Managerial and Financial Accounting*, Vol. 5 No. 3, pp. 310-325.

Nuryanah, S. and Islam, S. (2011), "Corporate Governance and Performance: Evidence from an Emerging Market", *Malaysian Accounting Review*, Vol. 10 No. 1, pp. 17-42.

O'brien, R. M. (2007), "A caution Regarding Rules of Thumb for Variance Inflation Factors", *Quality & Quantity*, Vol. 41 No. 5, pp. 673-690.

Ory, D. T. and Mokhtarian, P. L. (2010), "The impact of non-normality, sample size and estimation technique on goodness-of-fit measures in structural equation modeling: evidence from ten empirical models of travel behavior', *Quality & Quantity*, Vol. 44 No. 3, pp. 427-445.

Oxelheim, L. and Randøy, T. (2003), "The Impact of Foreign Board Membership on Firm Value", *Journal of Banking & Finance*, Vol. 27 No. 12, pp. 2369-2392.

Peni, E. (2014), "CEO and Chairperson Characteristics and Firm Performance", *Journal of Management & Governance*, Vol. 18 No. 1, pp. 185-205.

Pfeffer, J. and Salancik, G. R. (2003), The External Control of Organizations: A Resource Dependence Perspective, *Stanford University Press.*

Rahman, R. A. and Ali, F. H. M. (2006), "Board, Audit Committee, Culture and Earnings Management: Malaysian Evidence", *Managerial Auditing Journal*, Vol. 21 No. 7, pp. 783-804.

Rashid, A., De Zoysa, A., Lodh, S. and Rudkin, K. (2010), "Board Composition and Firm Performance: Evidence from Bangladesh", *Australasian Accounting Business and Finance Journal*, Vol. 4 No. 1, pp. 76-95.

Riabichenko, D. (2014), Organizational Peculiarities of Bank Liquidity International Experience and Ukrainian Practice.

Ruigrok, W., Peck, S., Tacheva, S., Greve, P. and Hu, Y. (2006), "The Determinants and Effects of Board Nomination Committees", *Journal of Management & Governance*, Vol. 10 No. 2, pp. 119-148.

Russell, J. S., Terborg, J. R. and Powers, M. L. (1985), "Organizational Performance and Organizational Level Training and Support", *Personnel Psychology*, Vol. 38 No. 4, pp. 849-863.

Saleem, I. and Khurshid, A. (2014), "Do Human Resource Practices Affect Employee Performance?", *Pakistan Business Review*, Vol. 15 No. 4, pp. 669-688.

Sanda, A., Garba, T. and Mikailu, A. S. (2011), "Board Independence and Firm Financial Performance: Evidence from Nigeria", *African Economic Research Consortiumo*. Document Number)

Schultz, E. L., Tan, D. T. and Walsh, K. D. (2010), "Endogeneity and the Corporate Governance-Performance Relation", *Australian Journal of Management*, Vol. 35 No. 2, pp. 145-163.

Sharma, V., Naiker, V. and Lee, B. (2009), "Determinants of Audit Committee Meeting Frequency: Evidence from a Voluntary Qovernance System", *Accounting Horizons*, Vol. 23 No. 3, pp. 245-263.

Shen, S. and Jia, J. (2005), "Will the Independent Director Institution Work in China. Loy", *LA Int'l & Comp. L. Rev*, Vol. 27, pp. 223.

Shivdasani, A. and Yermack, D. (1999), "CEO involvement in the selection of new board members: An empirical analysis", *The Journal of Finance*, Vol. 54 No. 5, pp. 1829- 1853.

Shleifer, A., and Vishny, R. W. (1997). A Survey of Corporate Governance. *The Journal of Finance.* 52(2), 737-783.

Singhchawla, W., Evans, R. and Evans, J. (2011), "Board Independence, Sub- Committee Independence and Firm Performance: Evidence from Australia", *Asia Pacific Journal of Economics & Business*, Vol. 15, pp. 1-15.

Soltani, B. (2014), "The Anatomy of Corporate Fraud: A Comparative Analysis of High Profile American and European Corporate Scandals", *Journal of Business Ethics*. Vol. 120 No. 2, pp. 251-274.

Thang, N. N., Quang, T. and Buyens, D. (2010), The Relationship between Training and Firm Performance: *A Literature Review*.

Tharenou, P., Saks, A. M. and Moore, C. (2007), "A review and critique of research on training and organizational-level outcomes", *Human Resource Management Review*, Vol. 17 No. 3, pp. 251-273.

Tuan, L. T. (2014), "From Corporate Governance to Balanced Performance Measurement", *Knowledge Management Research & Practice*, Vol. 12 No. 1, pp. 12-28.

Ujunwa, A. (2012), "Board Characteristics and the Financial Performance of Nigerian Quoted Firms", *Corporate Governance*, Vol. 12 No. 5, pp. 656-674.

Vafeas, N. (1999), "Board Meeting Frequency and Firm Performance", *Journal of Financial Economics*, Vol. 53 No. 1, pp. 113-142.

Venderbosch, R. and Prins, W. (2010), "Fast pyrolysis technology development", *Biofuels, bioproducts & biorefining*, Vol. 4 No. 2, pp. 178.

Walker, R. (2004), "Gaps in Guidelines on Audit Committees", *Abacus*, Vol. 40 No. 2, pp. 157-192.

Wintoki, M. B., Linck, J. S. and Netter, J. M. (2012), "Endogeneity and the of Internal Corporate Governance", *Journal of Financial Economics*, Vol. 105 No. 3, pp. 581-606.

Xiang, R., He, X. and Cheng, Y. (2014), "Female Director Characteristics of Audit Committee and Corporate Transparency", Proceedings of the Eighth International *Conference on Management Science and Engineering Management*, pp. 1037-1047.

Xie, B., Davidson, W. N. and DaDalt, P. J. (2003), "Earnings Management and Corporate Governance: the Role of the Board and the Audit Committee", *Journal of Corporate Finance*, Vol. 9 No. 3, pp. 295-316.

Yatim, P., Haniffa, R., Kent, P. and Clarkson, P. (2006), "Governance Structures, Ethnicity, and Audit Fees of Malaysian Listed Firms", *Managerial Auditing Journal*, Vol. 21 No. 7, pp. 757-782.

Zhou, H., Maggina, A. and Ansah, S. O. (2013), "Audit Committee and Firm Performance: Evidence from Greece", *American Accounting Assosiation.*