# THE RELATIONSHIP BETWEEN BOARD CHARACTERISTICS AND FIRM PERFORMANCE IN MALAYSIAN PUBLIC LISTED COMPANIES

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DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

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# LIST OF ABBREVIATIONS

CCM          Companies Commission of Malaysia

SC             Securities Commission

BM           Bursa Malaysia

MICG        Malaysia Institute of Corporate Governance

MASB        Malaysia Accounting Standards Board

MCCG       Malaysian Code on Corporate Governance

SME         Small and Medium Enterprise

ROE         Return on Equity

EPS         Earning per Share

CEO         Chief Executive Officer

SPSS        Statistic Package for Social Science

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## PREFACE

The investigation is carried out by the high level Finance Committee on Corporate Governance through a survey of Corporate Governance Best Practices of public listed companies after the financial crisis on year 1997. Corporate failure on financial crisis was a result of poor corporate governance. The report of the investigation also shows that there is lack of control on the board's monitoring role.

Until today, the corporate governance in Malaysia is still insufficient and it shakes the investors' confidence on the management. Being an undergraduate student, we are interested to learn more about the issue of corporate governance in Malaysia to improve the corporate governance and firm performance of the companies.

Board of directors is the core of corporate governance as they are having an important role in monitoring the companies. Hence, we focus on the board characteristics to show the accurate correlation between the board characteristics and firm performance in this study.

ABSTRACT

This study aims to investigate the components of board characteristics (CEO duality status, board independence, and board size) on firm performance in Malaysia public listed companies (PLCs) by applying agency theory. Another objective of this study was to understand the relationship between CEO duality status, board independence and, board size and the firm performance which measured by return on equity (ROE) and earnings per share (EPS).

Secondary data which is the annual reports of all companies are used to obtain the data required. Using the Research Randomizer, a sample of 205 firms from the total population of 811 firms listed in the main market of Bursa Malaysia within the sample periods of year 2010, is collected according to the criteria set. Independent Sample T-Test, Pearson Correlation Analysis and Multiple Linear Regression Analysis are used to analysis the collected data.

This study helps the shareholders, stakeholders, management and potential investors of the public listed companies to understand the selected board characteristics deeply and the measurements of the firm performance. Besides, the agency problem is able to be reduced when the relationship and impact of board characteristics on their overall firm performance are known. Nevertheless, the board characteristics that influence the firm performance most efficiently are identified. Hence, the level of corporate governance of the companies is able to be enhanced and lead to a higher level of shareholder confidence.

# CHAPTER 1 RESEARCH OVERVIEW

## 1.0 Introduction

Corporate governance has recently received much attention due to Adelphia, Enron, WorldCom, and other high profile scandals. Policy makers began to concern the issues of corporate governance (Organization for Economic Co-operation and Development [OECD], 2004).

Besides, Malaysia economy was badly affected by 1997 financial crisis; many major corporations in Malaysia have shut down. Corporate failure on financial crisis was a result of poor corporate governance (Mitton, 2002). Due to this failure, some regulators in Malaysia have taken effort to improve the corporate governance. There are Companies Commission of Malaysia (CCM), Securities Commission (SC), Bursa Securities Malaysia (BM), Malaysia Institute of Corporate Governance (MICG), and Malaysia Accounting Standards Board (MASB).

Government and industry are included in a high level Finance Committee on Corporate Governance that is established by government due to economic recession in 1997. It is to establish framework of corporate governance best practices and identify weaknesses highlighted by the 1997 financial downturn. The investigation is carried out by the committee through a survey of Corporate Governance Best Practices of public listed companies. Kuala Lumpur Stock Exchange (KLSE) and PriceWaterhouseCoopers (PWC) jointly conducted the survey to develop the recommendations for corporate governance (Ow-Young & Guan, 2000).

The report was issued and focused on the board's monitoring role and importance of the board of directors. The Malaysian Code on Corporate Governance (MCCG) was

issued a year after the report. Some of the corporate governance mechanisms are viewed as the most crucial element for effective corporate governance mechanisms for Malaysian companies such as the role, composition, and structure of the board of directors (Hashim & Devi, 2008).

In this study, it addresses the issue of corporate governance and the relationship between the board characteristics and firm performance in public listed companies that are strongly associated with corporate governance in order to improve their firm performance. A comprehensive view on the background of the study which includes research background, problem statement, research objectives, research questions, hypotheses of the study and significant of the study will be carried out in this study.

## 1.1 Research Background

Corporate governance can be defined as a set of systems and processes which embrace how things are done within structural organization. Good corporate governance is an integral part of the company's management and business philosophy. It goes beyond statutory form and is the key in building confidence of stakeholder thereby key to long-term success. Corporate governance is defined as something broader than corporate management with a view to achieve long-term strategic goals (Bairathi, 2009).

By adopting good corporate governance, it can reduce agency problem and prevent corporate scandals, fraud, civil and criminal liability of the organization. Besides, it can enhance the reputation and image of the organisation to attract more stakeholders involve in the organisation (Lipman & Lipman, 2006). Therefore, better corporate governance results in better firm performance, which better-governed firms should perform better than worse-governed firms (Brown & Caylor, 2004).

In uncertain and risky business environment, board of director plays a significant role in smoothing operation of companies. Board consists of a team of individuals, who contribute their knowledge and experience towards governing function (Carpenter & Westphal, 2001). Shareholders, the owners of the company will select directors to manage the company on behalf of them. However, board owes fiduciary duties to act in the best interests of corporation and shareholders, not only to shareholders.

Besides, board of directors play an active role in a firm's strategic decision making (Kemp, 2006) and to act as a mechanism of internal governance and monitoring of management (Shleifer & Vishny, 1997). An effective board will help the firm to achieve a better performance by performing these roles (Hawkins, 1997; Gompers, Ishii, & Metrick, 2003). The key factors such as the transparency, independence of the board, Chief Executive Officer (CEO) duality status, board remuneration, active participation of strategic decision making, and board diversity are identified to increase the effectiveness of board (Bathula, 2008).

## 1.2 Problem Statement

The major corporate collapses like Enron in year 2001 and Lehman Brothers in year 2008 have attracted worldwide attention regarding to the issues of corporate governance (Jackling & Johl, 2009). The confidence of investors towards management is shaken (Agrawal & Chadha, 2005), as the corporate collapses are mainly caused by poor governance (Brown & Caylor, 2005). Meanwhile, the authors suggested that the operating performance and shareholders' wealth will only be maximized when the company is well governing. The uncertainty of the correctness or credibility of the assumption is the problem for this research.

Many researches have been conducted by the scholars to examine the assumption. Ponnu and Sarimah Ramthandin (2008) stated that the corporate governance practices are negatively associated with firm's performance as measured by stock prices. The

stock price performance is insensitive towards the level of corporate governance practices. A little impact is resulted on the share price even though a high or low level of corporate governance is practiced. However, Hutchinson and Gul (2004) argued that a positive correlation is raised between the two variables. They found that while a firm is having good corporate governance practices, the board successfully monitors the exercise of growth opportunities and the management makes firm value-enhancing decisions. Hence, the firm's performance will be enhanced.

There are limitations in the past studies mentioned above. The data used in Ponnu and Sarimah Ramthandin (2008) is covered a small sample size of 100 companies only. A different result is likely to be resulted when sample size increases. In addition, the stock price performance is a weak performance indicator that does not reflect an actual relationship between corporate governance practices and firm performance. Moreover, the findings in the research of Hutchinson and Gul (2004) are only applicable to large companies due to the sample used is restricted to 500 top companies. Thus, the assumptions are not suitable for the small and medium enterprises (SMEs) or a sample size with mixture of large companies and SMEs.

All over the world, different corporate governance components are used by the researchers to investigate the relationship between corporate governance and firm performance. However, Board of directors is the core of corporate governance as they are having an important role in monitoring the companies (Fama & Jensen, 1983). Hence, the characteristics of board are investigated. This study hopes to contribute in showing the accurate correlation between corporate governance and firm's financial performance by eliminating the limitations in past studies. A large sample size with a mixture of large companies and SMEs is selected and the firm's financial performance is measured by Earning per Share (EPS) and Return on Equity (ROE).

# 1.3 Research Objectives

## 1.3.1 General Objectives

1. This research is to identify the characteristics of board that influence the Malaysia public listed firms' performance.
2. This research is to determine the level of ROE and EPS in Malaysia public listed companies.

## 1.3.2 Specific Objectives

1. This research is conducted to investigate the correlation between CEO duality status and firms' performance.
2. This research is conducted to investigate the correlation between board of directors' independence and firms' performance.
3. This research is conducted to investigate the correlation between size of the board and firms' performance.

# 1.4 Research Questions

## 1.4.1. General Questions

1. What are the characteristics of board that influence the Malaysia public listed firms' performance?
2. What is the level of ROE and EPS in Malaysia public listed companies?

### 1.4.2 Specific Questions

1. Are there any correlation between CEO duality status and firms' performance?
2. Are there any correlation between board of directors' independence and firms' performance?
3. Are there any correlation between board size and the companies' performance?

## 1.5 Hypotheses of the Study

$H_1$ : There is a significant relationship between CEO duality status and firm performance.

$\quad$ $H_{1a}$: There is a significant relationship between CEO duality status and ROE.

$\quad$ $H_{1b}$: There is a significant relationship between CEO duality status and EPS.

$H_2$ : There is a positive relationship between board independence and firm performance.

$\quad$ $H_{2a}$: There is a positive relationship between board independence and ROE.

$\quad$ $H_{2b}$: There is a positive relationship between board independence and EPS.

$H_3$: There is a negative relationship between board size and firm performance.

$\quad$ $H_{3a}$: There is a negative relationship between board size and ROE.

$\quad$ $H_{3b}$: There is a negative relationship between board size and EPS.

# 1.6 Significance of the Study

This research study is to provide the information and understanding of the selected components in board characteristics to the public and to find out the relationships of board characteristics and firm performance in Malaysia public listed companies. This is due to the growing importance of corporate governance towards the public listed companies.

In order to analyze the impact of corporate governance on firm's performance, we select 3 components of board characteristics as our indicators. The components that we are going to find out are CEO duality status, board of directors' independence and board size. First of all, this research is going to find out the relationship of CEO duality status and firm performance in order to investigate whether the CEO duality is related to the firm performance. Moreover, the independence of board of director is also one of the important components to determine the firm performance. This research is going to study does greater board independence improves the firm performance. Lastly, this research finds out the relationship of board size and firm performance. The effect of board size on firm performances is very important to the public listed companies in order to improve the firm's value.

This research paper is going to contribute to shareholders, stakeholders, managements and potential investors. It is to provide the information about how to measure a firm's performance. Besides, it also helps the managements in reducing the principal-agent problem by understanding the effect of board characteristics on firm's performance. Based on the research, these parties will know more how the important roles of board characteristics are played in the measurement of firm value.

## 1.7 Chapter Layout

This research is organized into five chapters. Chapter 1 introduces the background and importance of Board of Directors. Problem statement lists out the purposes of conducting this research and findings on past studies. Research objectives and questions are constructed in this chapter as well.

For Chapter 2, theory and literature review of three selected board characteristics based on the past studies are included. Conceptual framework and hypotheses are constructed as well. The Chapter 3 is carried out to delineate the research methodology adopted in this research. It discusses the research design, population, sample and sampling procedure, data collection method, variables and measurements, and also the data analysis techniques.

Chapter 4 presents the results of this study through the data analysis and interpretation of descriptive analysis, scale measurement, and inferential analysis. Lastly, Chapter 5 concludes the research by summarizing the finding along with discussion of major findings, implication of the study, limitations of the study and recommendations for future research.

## 1.8 Conclusion

This chapter has provided a brief view of corporate governance and board characteristics. The research objectives and research questions are summarized to get more understanding on the purpose of this research.

Besides, the contribution of this research is explained in the significance of the study. This research paper is going to contribute to shareholders, stakeholders, managements and potential investors to enhance their board characteristics.

# CHAPTER 2 LITERATURE REVIEW

## 2.0 Introduction

This chapter is to construe the problem stated in the previous chapter. The main purpose of this chapter is to examine and investigate in dept the relationship between board characteristics and firm performance.

The theoretical foundation, definition of each variable, conceptual framework and hypotheses development are explained and interpreted in this chapter.

## 2.1 Review of the Literature

The effectiveness of board of directors on monitoring the manager is supported in the past studies. However, when the board of directors has control over the managers, the managers will act from the angle of the directors' interest rather than shareholders' interest. Therefore, some of the issues should be concerned to improve the board characteristics.

### 2.1.1 Dependent Variable - Firm performance

The dependent variable of this research study is firm performance which is measured by two financial ratios, ROE and EPS. The investors care much on the ratios as these are fundamental analysis of a company's value.

The definition of performance from dictionary is assumed to be measured by current financial results, while the performance in term of economic is defined by share prices (Meyer, 2003). In agency theory, it explains the use of stock options as an incentive to align principals and agents interest. The bonus salary of executives was influenced by firm performance (EPS and ROE) and stock options were highly influenced by EPS (Bhatnagar & Trimm, 2011). Thus, ROE and EPS are correlated with corporate governance.

ROE is defined as a measure of how well a company spends its money or utilizes the resources or equity given by the shareholders in generating profits ("Return on equity", 2012). It is an indicator of the firm's efficiency. Based on the figure, the investors can judge and analyse the performance of top management (Pandya & Rao, 1998). Meanwhile, ROE is classified as an accounting-based performance measurement. Based on the research of Hutchinson and Gul (2004), they found that accounting based performance measures are able to display the results of the top management decisions.

Besides, EPS is defined as a measure of average earning from shares transacted ("What is EPS", 2006). It shows the amount and earnings available to receive from the firm by the owners of the shares (Khan & Jain, 2007). The firm's profitability is showed in a per share basis. Besides, EPS is classified as a market-based performance indicator. In addition, EPS affects the market price of the firm's common stock when higher EPS figure is achieved. It tends to attract more investors and demands of the firm's share as earnings are higher. As a result, the wealth of the existing shareholders is maximizing. Nevertheless, the effectiveness of management in operating the business activities is showed.

## 2.1.2 First Independent Variable – CEO Duality Status

One of the independent variable of this research paper is CEO duality status. This study investigates the relationship of CEO duality status and the firm's performance. According to the Investopedia dictionary, CEO is a person who manages the overall operations and resources of the company. Besides, he is the person who communicates between the board of directors and corporate operations. CEO duality status is a situation where the CEO holds the position of chairman of the board.

In agency theory, the role of CEO and chairman of board are played by one person will increase the agency problem. While, in stewardship theory said that CEO duality status is efficient in decision making due to the decision is made by one person only. According to the academic literature, dual leadership structure (splitting CEO and chairman) facilitates effective monitoring mechanism and firm doing so will surpass those that have unitary position (Goyal & Park, 2002; Hou & Chuang, 2007). In contrast, stewardship theory argues that CEO duality status can reduce agency costs and promote the stability of the board and management.

## 2.1.3 Second Independent Variable – Board Independence

Agency Theory argues that larger proportion of independent boards will lead to better firm performance since this theory assumes that managers are individualistic and opportunistic. Thus, effective independent board is important to protect shareholders' interests. (Ramdani & Witteloostuijn, 2009).

Board independence can be measured by using the fraction of independent non-executive directors to the total number of directors (Prabowo & Simpson,

2011). Abdullah and Nasir (2004) defined board independence as level of presence of independent directors or presence of non-executive directors in the board. Bursa Malaysia defined independent director as a director who is free from business or other relationship which could influence the independent judgement. Paragraph 15.02 of Bursa Malaysia Listing Requirement states that at least two Directors or one-third of the Board (whichever is higher) must be independent. According to Jakarta Stock Exchange, independent director is defined as an individual without any association with management, other directors, controlling party and other related party.

### 2.1.4 Third Independent Variable – Board Size

Board size has been defined in various ways in the past researches. One of the definitions of board size is the number of executive and non-executive directors on the board (O'Connell and Cramer, 2010). In others form, it is the number of members in the board of director (Mak & Kusnadi, 2005). Based on Mashayekhi & Bazaz (2008)'s study, board size was defined as the number of directors on the board. The total number of directors on the board of each sample company inclusive the CEO/Managing director, Chairman, outside directors, executive directors and non-executive directors (Shakir, 2006).

## 2.2 Review of Relevant Theoretical Models

Agency theory used in this research is originated in the early 1970s. During the formative period 1970s, some scholars were involved such as Armen Alchian, Harold Demsetz, Michael Jensen, William Meckling, and S.A. Ross (Gale Cengage, 2000). An agency relationship arises whenever principals hire the agents to perform some services and delegate decision making authority to agents. Nevertheless, there are

some conflicts due to managers which prefer to pursue their own personal objectives and do not make the decision in the best interest of the principal. Thus, the agency cost is needed to align both parties' interest.

Agency theory has been used in many areas other than the corporate governance. This theory is used in the research area of accounting such as its application to accounting issues (Lambert, 2001)**.** In the field of social and behavioral science, the delegation of power has been discussed by the theory (Lupia, 2004). Nevertheless, the theory is applied in supply chain management to manage the supplier behaviors as a mean to reduce supply risk (Zsidisin & Ellram, 2003). Meanwhile, a marketing research project conducted by Singh and Sirdeshmukh (2000) is aims to examine the effects of trust and agency mechanism in consumer satisfaction and loyalty judgments. In non-profit management and leadership, Miller (2002) has examined the monitoring behavior of twelve non-profit boards of directors under the framework of agency theory. Furthermore, La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) have conducted a finance research on relationship between the levels of minority shareholder rights and the outcome agency model of dividends.

In agency theory, there are two types of concepts which are positivist agency theory and principal-agent theory (Jensen, 1983). Positivist theory defined the agent to be more likely to behave in the interest of the principal when the contract between principal and agent is outcome based or when the principal has information to verify agent behavior (Eisenhardt, 1989). In the other hand, principal-agent theory is the general theory which focused more on the behaviors between the principal and agent. The information about the agent are more positively related to behavior-based contract and negatively related to outcome-based contract (Eisenhardt, 1989).

According to agency theory, the agency problems arise from the separation of ownership and management. The agents or managers tend to act for their own welfare rather than the interest of shareholders. In order to induce the agent to act in the best interests of the principal, the agency problem has to be solved (McColgan, 2001). It

can be overcome by setting up various corporate governance mechanisms which is defined as the way a company is directed and controlled to maximize shareholders value.

Board of directors is the collective group of individuals who represents the shareholders to oversee the management of the company. It is a corporate governance mechanism that mitigates the agency problems (Hermalin & Weisbach, 2003; Sloan, 2001). Besides, Fama and Jensen (1983) indicated that the BODs are the core of corporate governance as having an important role in monitoring the companies. They also stated that the roles of decision management and decision control are performed by the board. By performing these two roles, the board is directly and indirectly affecting the financial performance of the firm (Cho & Rui, 2009). However, the functions of the board are depending on structure of the company. In our study, the functions of the board of directors are examined base on different board's characteristics. The board size, board independence and CEO duality status are selected as they are the characteristics that influence the board of directors most efficiently (Gillan, Hartzell & Starks, 2007). At last, the relationship between the characteristics of the board and firms' financial performance of selected 205 public listed companies in Malaysia is studied in our research study.

## 2.3 Proposed Theoretical/Conceptual Framework

Figure 2.1: Proposed Conceptual Framework
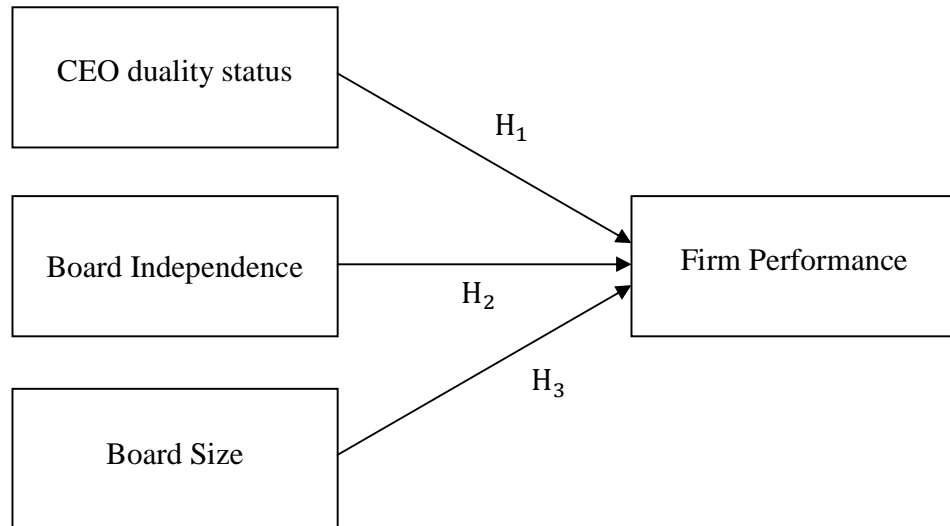


Adopted from source: Mashayekhi, B., & Bazaz, M. S. (2010). The effects of corporate governance on earning quality: Evidence from Iran. *Asian Journal of Business and Accounting*, *3*(2), 71-100.

The diagram above illustrates the proposed theoretical framework based on the relevant theoretical model. This study includes four variables which are three independent variables and one dependent variable. It shows the relationship between independent variables and dependent variable that is whether firm performance will be influenced by CEO duality status, board independence, and board size.

## 2.4 Hypotheses Development

### 2.4.1 The relationship between CEO duality status and firm performance

The survey by Brown and Caylor, (2005) proven that the ROE and dividend yields are positively correlated with CEO duality status. The measurement used for eight categories of corporate governance is Gov-Score. Gov-Score will increase with higher level of good governance. Gov-Scores for 2327 firms are computed as using data obtained from Institutional Shareholder Services.

Bai, Liu, Lu, Song, and Zhang (2004) discovered that in China, non-duality firms outperform duality firm. The study investigates the relationship between governance mechanisms and market valuation of publicly listed firms in China. The secondary data is obtained as the firm's annual reports for all publicly listed firms on the two stock markets in China between 1999 and 2001.

However, researches such as Chen, Lin, and Yi (2008) found thatno linkage between CEO duality status and firm performance. This survey compares the performance of 3 years (1999 to 2003) before and after the firms changes their leadership structure by switching from duality to non-duality and vice versa.

$H_1$: There is a significant relationship between CEO duality status and firm performance.

$H_{1a}$: There is a significant relationship between CEO duality status and ROE.

$H_{1b}$: There is a significant relationship between CEO duality status and EPS.

## 2.4.2 The relationship between board independence and firm performance

Ramdani and Witteloostuijn (2009) applied Quantile Regression and it pointed out percentage of board independence have an effect on firm performance only for firms with average performance. Firm performing below average are not affected by board independence due to some other more serious corporate governance issues are faced by the firm. The study observed the effect of board independence and CEO duality status on firm performance. The secondary data is collected from the annual report of a sample of 308 stock-listed enterprises from Indonesia, Malaysia, South Korea and Thailand.

Similarly, Byrd, Cooperman, and Glenn (2010) point out a significant positive effect of independent outside directors on firm performance. The study examined the effect of two different measures of board composition on firm performance and excessive CEO remuneration. Secondary data of 666 non-financial firms within Russell 1000 index in 2004 are used.

Bhagat and Black (2000) indicated that there is a negative relationship between board independence and firm's performance. The purpose of this study is to examine the effect of board independence on the long-term performance for large American firms. The secondary data on board composition in 1991 is obtained from Institutional Shareholder Services of 957 American public companies.

$H_2$: There is a positive relationship between board independence and firm performance.

    $H_{2a}$: There is a positive relationship between board independence and ROE.

    $H_{2b}$: There is a positive relationship between board independence and EPS.

### 2.4.3 The relationship between board size and firm performance

According to Mak and Kusnadi (2005)'s study, board size and firm performance do impart a negative relationship in both Malaysia and Singapore. Purpose of Mak and Kusnadi (2005)'s study is to examine the impact of corporate governance mechanisms towards the Singapore and Malaysia firms' value which is measured by Tobin's Q. Tobin's Q was defined as market value of equity plus book value of liabilities divided by asset (Mak and Kusnadi, 2005). The data that used in the study was secondary data which obtained from annual reports of firms, Datastream and the Bursa Malaysia on Disc CD-ROM that published by the Bursa Malaysia. Target respondent of Mak and Kusnadi (2005)'s research was board of directors and investors in both Malaysia and Singapore.

Besides, there were many past empirical studies such as O'Connell and Cramer (2010) found that board size showed a significant negative association with firm performance. O'Connell and Cramer (2010)'s study was to examine the impact of firm size on the relationship between firm performance and the aforementioned board characteristics. Their study was conducted in Ireland whereby the data used in their study was secondary data which taken from DataStream, and annual financial report as well as Primark Global Access. Their target respondent was board of director and investor in Ireland.

On top of that, Mashayekhi and Noravesh (2008) found that if the CEO is board chair, the larger the board size is, the higher the extent of earnings management will be. The purpose of Mashayekhi and Noravesh (2008)'s study was to examine the relationships between board characteristics and earnings management in Iranian companies. The secondary data used in their study were taken from TSE reports on CDs and web. Target respondent of

Mashayekhi and Noravesh (2008)'s study was board of directors and investors in Iran.

Next, Bennedsen, Kongsted and Nielsen (2008) also found a significantly negative effect on firm performance only if the size of boards with six or more members. Purpose of their study was to estimate the effect of board size on performance that can be given a causal interpretation. Secondary data used in their study were obtained from the annual reports which required submit to the Danish Ministry of Economic and Business Affairs. Target respondent of Bennedsen et al. (2008)'s study was board of directors and investors in Denmark.

$H_3$: There is a negative relationship between board size and firm performance.

$\qquad$ $H_{3a}$: There is a negative relationship between board size and ROE.

$\qquad$ $H_{3b}$: There is a negative relationship between board size and EPS.


## 2.5 Conclusion

In this research, firm performance of Malaysian public listed companies is focused and three conceptual dimensions which include CEO duality status, board independence, and board size are selected as the independent variables. The relationship between the dependent variable (firm performance) and independent variables (CEO duality status, board independence, and board size) had also been discussed.

Research methodology will be further discussed in the next chapter. It includes research design, sampling methods, data collection methods, data analysis technique and variables and measurement of variables.

# **CHAPTER 3 METHODOLOGY**

## **3.0 Introduction**

In this chapter, the study mainly discusses about the research methodologies that will be used in conducting the research include research design, data collection methods, sampling design, research instrument, data processing, data analysis carried out in this research. The purpose is to provide an overview of verifying the hypotheses that has been developed in the previous chapter.

## **3.1 Research Design**

This research is a quantitative research as the data analysis procedure generates numerical data. Quantitative research is a methodology that seeks to quantify the data, typically, applies some form of statistical analysis (Malhotra, 2007). The findings of quantitative research can be treated as conclusive and used to recommend a final course of action.

In order to provide an explanatory research, the data generated are used to establish the relationship between the board characteristics and the financial performance of Malaysian public listed companies. It is a cross-sectional study of financial data with the Malaysian public listed company as unit analysis. A sample period of one year is taken to examine the relationship between the variables in year 2010, which is closest to the research year. The analysis conducted includes Independent Sample T-Test, Pearson Correlation, and Multiple Linear Regression Analysis.

# 3.2 Data collection method

The secondary data is used in this research to answer the research question and test the hypotheses of this study. The purpose of data collection is to obtain information to make decision about important issues. With the combination of data, the sufficient information is gathered to investigate more in depth into these research areas. In this study, the financial data is taken from annual reports of the selected company which is downloaded from their official website and Bursa Malaysia.

### 3.2.1 Secondary Data

Financial data, board structure, and other relevant data are collected to run analysis of this research. The source for these data is mainly from annual reports of the selected firms. The financial variables used such as net profit after tax, total equity, and basic EPS. Annual report was chosen due to the fact that it is accessible by public and contains information needed. Besides, the level of disclosure made is important to the functioning of corporate governance (Keasey, Thompson & Wright, 1999), it enables management to communicate with the shareholders about the company's performance and practice (Healy & Palepu, 2001). In addition, it is more reliable because it was audited by external auditor before it is published.

Online databases such as ScienceDirect, Scopus, ProQuest, EBSCO-host, Emerald Management Plus and JSTOR are used in this study. Books and journal articles are also obtained as evidence to support the tenures and theories used.

## 3.3 Sampling Design

### 3.3.1 Target Population

The target population for this research project is the public listed companies in Malaysia. All of these public listed companies are listed in Bursa Malaysia. There are 811 companies listed in Bursa Malaysia in year 2010 exclude financial sector. The rationale for eliminating financial sector is due to different statutory requirements (Hashim & Devi, 2008). Financial sector is governed by Banking and Financial Institutions Act 1989 which is different from those governed by Companies Act 1965.

### 3.3.2 Sampling Frame and Sampling Location

The data will be collected from the companies listed in Bursa Malaysia. The list of the public listed companies will be focus on the Main Market of Bursa Malaysia and it can be obtained from the Bursa Malaysia website. The reason of choosing public listed companies is due to most investors carry out their investment within the list of public listed companies which serve as the investment community (Lim & Dallimore, 2002). Financial sector is excluded from the list of public listed companies.

### 3.3.3 Sampling Elements

The sampling population in this research is the public listed companies which listed in the main market of Bursa Malaysia. However, the sampling element excludes the financial sector due to the different statutory requirements. 205 companies from the main market are selected for the research purpose

(Sekaran, 2003). The reason of choosing the main market is because the investors are more active in main board and more details information provided.

### 3.3.4 Sampling Procedures

In this research, the companies are selected with simple random sampling method. Every listed company is getting the equal chance to be selected. The list of companies are numbered accordingly and picked by the number generated by Research Randomizer. It is using the "Math.random" method with JavaScript programming language to generate its random numbers.

## 3.4 Research Instrument

In this research study, the research instrument employed is annual report which can be downloaded from the selected companies' official website and Bursa Malaysia. It has been employed as all financial and non financial information of the company in a particular year are disclosed. In addition, it is also more reliable as it was audited by external auditor before it can be made available to the public.

In order to access to both independent variables and dependent variable of this research, the financial performance and information of board recorded in annual report are extracted. The profit after tax and shareholder funds are extracted from statements of comprehensive income and statements of financial position to calculate the company's ROE. Besides, EPS is also extracted from statements of comprehensive income. Meanwhile, the number of board's member, independent non executive directors and non executive directors are counted manually from the corporate information and extracted from the statement of corporate governance. Next, the board independence will be calculated according to formula. Lastly, CEO

duality status is determined by observing whether chairman and CEO position are held by the same person.

# 3.5 Constructs Measurement

## 3.5.1 Dependent Variable – Firm Performance

The dependent variable, firm performance is the best measured by ROE and EPS. According to Walther (2010), ROE enables the comparison of effectiveness of firm in utilizing capital. According to Lin, Chu and Liu (2005), in consistence with the goal of maximizing shareholders' wealth, firm performance is best measured by using return on equity. ROE is a profitability measure whereby calculation is profit after tax divided by Equity (Leckson-Leckey, Osei, & Harvey, 2011).

$$ROE \ = \ \frac{\text{Net Income}}{\text{Sales}} \ x \ \frac{\text{Sales}}{\text{Assets}} \ x \ \frac{\text{Assets}}{\text{Equity}} \ x \ \ 100\%$$
$$= \ \frac{\text{Net Income}}{\text{Equity}} \ x \ \ 100\%$$

The second measurement, EPS indicates how much earning is created on every share. Larger companies might have higher income. However, smaller company might be doing better per unit of ownership. In order to have a better picture on how efficient a firm in generating earning from each outstanding share, EPS is a better performance indicator (Walther, 2010).

Singhvi and Bodhanwala (2006) defined earning per share as net income divided by the number of shares outstanding. According to Pagach, Norton, and Diamond (2007) the earning per share is calculated as follow:

$$EPS \ = \ \frac{\text{Net income - preferred Stock Dividends}}{\text{Weighted-Average Number of Common Shares Outstanding}}$$

### 3.5.2 Independent Variables

Board characteristics that influence efficiency of board of directors the most are board size, board independence and CEO duality status (Gillan, Hartzell, & Starks, 2007).

#### 3.5.2.1 CEO Duality Status

CEO duality status is nominal data as there are only two categories which is 'yes' or 'no'. If the roles of chairman and CEO are separated (CEO≠CHAIR), dummy variable will be defined as '1', otherwise (CEO=CHAIR) it takes '0' (Davidson, Goodwin-Stewart, & Kent, 2005). Nominal scale is a non-parametric and therefore Independent Sample T-Test will be used to measure this variable. The similar method was used in Davison et al. (2005) and Hashim and Devi (2008).

#### 3.5.2.2 Board Independence

For public listed companies in Malaysia, there are three types of directors which are independent non-executive director, non-independent non-executive director and executive director. Board independence is the proportion of Independent Non Executive director to Non Executive director (include independent and non-independent non-executive director) in percentage (Hashim & Devi, 2008). Similarly, exact number of directors will be obtained from year 2010 annual report. Pearson Correlation Analysis will be used for this variable. The proportion is calculated by using:

$$\frac{\text{Number of Independent Non-Executive Director}}{\text{Number of Non Executive Director}} \times 100\%$$

### 3.5.2.3 Board Size

Board size is a ratio data. Total number of board of directors (include three types of directors) will be extracted from the firm's annual report in year 2010 (Abdul Rahman & Mohamed Ali, 2006). Pearson Correlation Analysis will be used for this variable.

## 3.6 Data Processing

### 3.6.1 Data Checking

Data checking is a process of screening the data which can identify and eliminate illegible, incomplete, inconsistent, or ambiguous responses (Malhotra, 2007). Financial data collected from Bursa Malaysia are checked for completeness and validity by comparing manually with annual reports collected for each sample company.

### 3.6.2 Data Editing

Data editing is a process of reviewing the raw data acquired during data collection activities with the objective of increase accuracy and precision of the data (Hair, Bush, & Ortinau, 2005). After entering all actual figures completely into the Excel file, data is being checked for any missing or typing error manually.

### 3.6.3 Data Coding

Data coding is a process that involves assigning a code, normally a number, to represent it. The code assigned is to facilitate the data processing and ensure the whole process is sequential managed. In this study, CEO duality status is coded with "1" as yes and "0" as no.

### 3.6.4 Data Transcription

Data transcription is a process that transfers the coded data into computers (Malhotra, 2007). The data collected is coded into Statistic Package for Social Science (SPSS) program correctly. The variable name, data type, measurement scale, decimals and others are inserted into "variable view", whereas the data are inserted into "date view". These data are re-examined to ensure there are no input errors.

### 3.6.5 Data Cleaning

Data Cleaning is the process whereby consistency checks and treatment of missing response will be carried out (Malhotra, 2007). For this study, the entire information is collected from the Annual Report of 205 companies. Therefore, data that is out of range, logically inconsistent, or have extreme values was identified by the SPSS software.

### 3.6.6 Selecting a Data Analysis Strategy

Selecting an appropriate data strategy is to select a proper data analysis strategy base on the previous steps which are problem definition, develop an approach and research design (Malhotar, 2007). A suitable strategy should be chosen properly since it may influences the reliability of the analysis result.

# 3.7 Data Analysis Techniques

SPSS software version 16.0 is used to analyse the collected data from 205 companies chosen based on the criteria set. All the analyse results will be illustrated by using tables and charts.

### 3.7.1 Descriptive Statistics

Descriptive statistics provide simple summaries for different sectors of the public listed companies. Simple graphics such as pie charts and central tendencies which include mean, median, mode, standard deviation and range are explored to summarise and analyse the characteristics of the samples. Besides, frequency and percentage distribution are used to analyse the characteristics.

### 3.7.2 Scale Measurement

### 3.7.2.1 Reliability Test

Reliability test is to the test degree of error-free and yield consistent result (Zikmund, 2003). The higher the degree of association between the results derived through this repeated measurement, the more reliable the scale.

The most common measurement is Cronbach alpha. It can be indicated by the range of the reliability coefficient (alpha), which 0.0 representing no meaning and 1.0 representing complete consistency (Sekaran, 2003).

Table 3.1: Rule of Thumb about Croncach's Alpha Coefficient Size

| Alpha Coefficient Range | Strength of Association |
|---|---|
| < 0.60 | Poor |
| 0.60 to < 0.70 | Moderate |
| 0.70 to < 0.80 | Good |
| 0.80 to < 0.90 | Very Good |
| 0.90 | Excellent |

Source: Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2003). *Multivariate data analysis. Upper Saddle River, NJ: Prentice Hall*.

### 3.7.3 Inferential Statistics

### 3.7.3.1 Independent Sample T-Test

Independent Sample T-Test is used to test the relationship between the non-parametric independent variables which is CEO duality status and the dependent variable which is the firm performance.

### 3.7.3.2 Pearson Correlation Analysis

Pearson Correlation Analysis is suitable to measure in linear relationship between two interval-scale variables or two ratio-scale variables (Malhotra & Peterson, 2006). It is used to test the relationship between the parametric independent variables including board independence and board size and the parametric dependent variable which is the firm performance.

Moreover, Pearson Correlation Coefficient analysis is subordinating to brivariate correlation, which has a range of possible values from -1 to +1. The value indicates the strength of the relationship, while the sign (+ or -) indicates the direction (Malhotra & Peterson, 2006).

The existence of multicollinearity is checked by looking at the magnitude of correlation between the independent variables to avoid highly correlated variables that will affect the overall outcome (Garson, 2006).

Table 3.2: Level of association of Pearson Correlation Coeffiecient

| Coefficient Range | Strength |
|---|---|
| ±0.91 to ±1.00 | Very Strong |
| ±0.71 to ±0.90 | High |
| ±0.41 to ±0.70 | Moderate |
| ±0.21 to ±0.40 | Small but definite relationship |
| 0.00 to ±0.20 | Slight, almost negligible |

Adapted from: Sekaran, U. (2003). Research methods for business: A skill building approaches (4[th]ed.). *New York: Wiley & Sons, Inc*.

### 3.7.3.3 Multiple Linear Regression Analysis

Lastly, Multiple Linear Regression Analysis will be used to analyse the strength of the relationship between the independent variables and dependent variable (Hair et al., 2003; Weir, 1997). The following are the regression models used for testing hypotheses (Mashayekhi & Bazaz, 2010).

$$ROE = \beta_0 + \beta_1 \, DUAL + \beta_2 BIND + \beta_3 BSIZ$$
$$EPS = \beta_0 + \beta_1 \, DUAL + \beta_2 BIND + \beta_3 BSIZ$$

whereby ROE is return on equity; EPS is earning per share; DUAL is 1 if the CEO is also a chairman of board and 0 otherwise; BIND is the proportion of the independent directors among the board of directors; and BSIZ is the numbers of directors in the company.

If the p-value is less than 0.05, accept $H_1$ and reject $H_0$, whereas if the p-value is more than 0.05, accept $H_0$ and reject $H_1$. It helps to identify the percentage of variable that explained by the independent variables.

## 3.8 Conclusion

The research design and methods are explained in this chapter to collect and analyse the data. Besides, the procedures of data coding and editing are carried out after the data collection. The data will be analysed by descriptive data analysis, reliability test, Independent Sample T-Test, Pearson Correlation Analysis and Multiple Linear Regression Analysis.

Last but not least, the result of the analysis for this research will be explained in the next two chapters.

# CHAPTER 4 DATA ANALYSIS

## 4.0 Introduction

Several statistical tools are used to organize and process the data that have been collected. Moreover, this chapter includes the result from descriptive statistics, reliability test, Independent Sample T-Test, Pearson Correlation Analysis, and Multiple Linear Regression Analysis.

## 4.1 Descriptive Analysis

### 4.1.1 Demographic Profile of the Respondents

Table 4.1: Respondent Demographic Profile

| | Sector | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Construction | 15 | 7.30 | 7.30 | 7.30 |
| | Consumer products | 33 | 16.10 | 16.10 | 23.40 |
| | Hotels | 1 | 0.50 | 0.50 | 23.90 |
| | Industrial products | 72 | 35.10 | 35.10 | 59.00 |
| | IPC | 2 | 1.00 | 1.00 | 60.00 |
| | Mining | 1 | 0.50 | 0.50 | 60.50 |
| | Plantation | 10 | 4.90 | 4.90 | 65.40 |
| | Properties | 26 | 12.70 | 12.70 | 78.00 |
| | Technology | 6 | 2.90 | 2.90 | 81.00 |
| | Trading/Services | 39 | 19.00 | 19.00 | 100.00 |
| | Total | 205 | 100.00 | 100.00 | |

Sources: Developed for the research

Figure 4.1: Summary of Respondent Demographic Profile

Table 4.1 shows the data result after analysis had been done. There are ten different sectors for data collection which are construction, consumer products, hotels, industrial products, IPC, mining, plantation, properties, technology and trading/services. Based on the Figure 4.1, the sector of industrial products takes up highest portion which is 35.1%. In the contrast, two sectors are taking the lowest portion which are hotels and mining.

Among the ten sectors, there six sectors contribute less than 10% which are construction (7.30%), hotels (0.5%), IPC (1.00%), mining (0.5%), plantation

(4.90%) and technology (2.90%). Others are contributed above 10% which are consumer products (16.10%), industrial product (35.10%), properties (12.70%) and trading/services (19.00%).

## 4.1.2 Central Tendencies Measurement of Constructs

Table 4.2: Central Tendencies Measurement
for ROE, EPS, CEO duality status, board independence, and board size

|  |  | ROE | EPS | CEO | BIND | BSIZE |
|---|---|---|---|---|---|---|
| N | Valid | 205 | 205 | 205 | 205 | 205 |
|  | Missing | 0 | 0 | 0 | 0 | 0 |
| Mean |  | 10.41 | 15.62 | 0.13 | 0.68 | 7.34 |
| Median |  | 7.85 | 10.30 | 0.00 | 0.67 | 7.00 |
| Mode |  | 5.87[a] | 4.00[a] | 0.00 | 0.67 | 7.00 |
| Std. Deviation |  | 1.19 | 1.91 | 0.34 | 0.16 | 1.88 |
| Minimum |  | -24.74 | -19.50 | 0.00 | 0.40 | 3.00 |
| Maximum |  | 83.62 | 126.85 | 1.00 | 1.00 | 15.00 |

a. Multiple modes exist. The smallest value is shown

Source: Developed for the research

Based on the Table 4.2, the 205 public listed Companies are valid and no missing. The mean for ROE is 10.4123 while the median is 7.85 and the standard deviation is 1.18897E1. Besides, the mean for EPS is 15.6245 while the median is 10.3000 and standard deviation is 1.91263E1. The means of ROE and EPS indicate that good firm performance is present in most public listed companies. Moreover, the mean of CEO is 0.13 while median is 0.00 and standard deviation is 0.339. The mode of CEO is zero. The board

independent's mean is 0.6785; median is 0.6700 while the standard deviation is 0.15657. The mean of board size is 7.34 while the median is 7.00 and standard deviation is 1.881.

Table 4.3 Frequency for CEO duality status

**CEO**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No | 178 | 86.8 | 86.8 | 86.8 |
| | Yes | 27 | 13.2 | 13.2 | 100.0 |
| | Total | 205 | 100.0 | 100.0 | |

Source: Developed for the research

Figure 4.2 Summary for CEO duality status
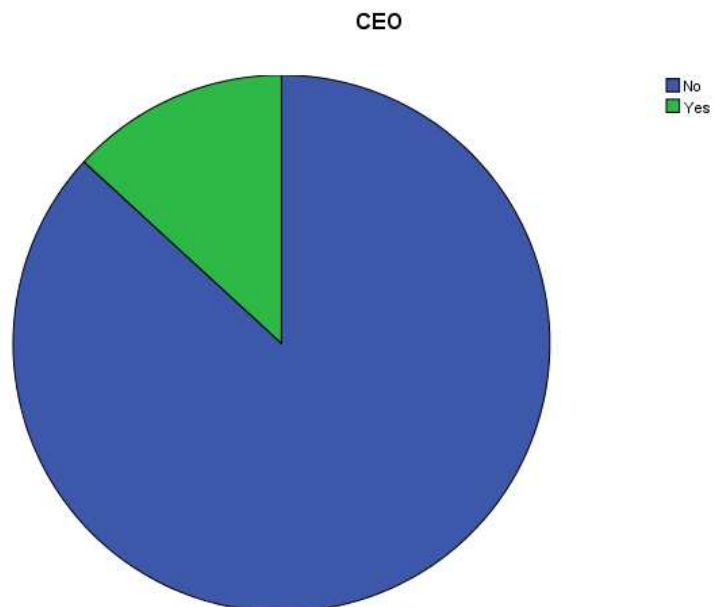


Source: Developed for the research

Based on the Table 4.3, most of the public listed companies' CEO do not hold the position as the chairman of the board at the same time. There are only 13.2% of CEO is the chairman of the board.

## 4.2 Scale Measurement

### 4.2.1 Reliability Test

Table 4.4: Result of Reliability Test

| Cronbach's Alpha | N of Items |
| --- | --- |
| 0.420 | 5 |

Source: Developed for the research

Cronbach's Alpha is used to measure of the internal consistency of a scale. Internal consistency is connected to the inter-relatedness of the items within the test. Since, it expresses the degree of the items in a test measure the same concept (Tavakol & Dennick, 2011). According to Garson (2008), alpha should be not less than 0.7 or higher to keep an item in a sufficient scale.

The Cronbach's alpha in this study is 0.420 which signifies that the internal consistency of items in a scale is not reliable. This is due to fewer items in the scale and lack of homogeneity of variances among the items. The number of items in the scale of this study is five which consists ROE, EPS, CEO duality status, board size and board independence. Reliability test result does not provide useful information in this study due to the nature of secondary data that collected from each sample company's annual report is constant and not amendable.

## 4.3 Inferential Analysis

### 4.3.1 Independent Sample T-Test

Table 4.5: Independent Sample T-test

|  | CEO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| ROE | Yes | 27 | 12.0533 | 11.14716 | 2.14527 |
|  | No | 178 | 10.1636 | 12.00844 | .90007 |
| EPS | Yes | 27 | 19.5448 | 21.41987 | 4.12226 |
|  | No | 178 | 15.0299 | 18.74892 | 1.40529 |

Source: Developed for the research

Table 4.6: Result of Independent Sample T-Test

|  |  | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|---|---|---|
|  |  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| ROE | Equal variances assumed | .210 | .648 | .769 | 203 | .443 | 1.88974 | 2.45805 |
|  | Equal variances not assumed |  |  | .812 | 35.796 | .422 | 1.88974 | 2.32644 |
| EPS | Equal variances assumed | 3.472 | .064 | 1.144 | 203 | .254 | 4.51493 | 3.94719 |
|  | Equal variances not assumed |  |  | 1.037 | 32.330 | .308 | 4.51493 | 4.35521 |

*Significance at the level of 0.05 (two-tailed).

Source: Developed for the research

**$H_1$: There is a significant relationship between CEO duality status and firm performance.**

> **$H_{1a}$ : There is a significant relationship between CEO duality status and ROE.**

> **$H_{1b}$ : There is a significant relationship between CEO duality status and EPS.**

The independent variables in this study consist a nominal variable which is the CEO duality status. It contains two categories of answer, yes and no. Besides, the dependent variable of this research is the firm performance which measured in ratio value. As a parametric dependent variable is investigated, its relationship with the non parametric independent variable is being examined and tested using a parametric test, Independent Sample T-Test.

In Table 4.6, the Independent Sample T-Test shows the Levene's test for equality of variances for ROE and EPS are assumed equal variances as the significant value of 0.648 and 0.064 are larger than 0.05. The test for equality of means shows there are no significance difference found between CEO duality status and the firm performance. The significance value for ROE and EPS are 0.443 and 0.254 which are larger than 0.05. It shows that there is no significant difference is found between CEO duality status and ROE and EPS. In a conclusion, the existence or inexistence of CEO duality has no effects on the firm performance, $H_0$ is accepted and $H_1$ is rejected.

## 4.3.2 Pearson Correlation Analysis

Table 4.7: Pearson Correlation Analysis

between ROE, EPS, board independence and board size

| | | ROE | EPS | BIND | BSIZE |
|---|---|---|---|---|---|
| ROE | Pearson Correlation | 1 | .542** | .483** | .034 |
| | Sig. (2-tailed) | | .000 | .000 | .628 |
| | N | 205 | 205 | 205 | 205 |
| EPS | Pearson Correlation | .542** | 1 | .764** | .040 |
| | Sig. (2-tailed) | .000 | | .000 | .568 |
| | N | 205 | 205 | 205 | 205 |
| BIND | Pearson Correlation | .483** | .764** | 1 | -.037 |
| | Sig. (2-tailed) | .000 | .000 | | .603 |
| | N | 205 | 205 | 205 | 205 |
| BSIZE | Pearson Correlation | .034 | .040 | -.037 | 1 |
| | Sig. (2-tailed) | .628 | .568 | .603 | |
| | N | 205 | 205 | 205 | 205 |

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

Source: Developed for the research

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Whereby,

> N= 205
>
> ROE = Return on Equity
>
> EPS = Earning per Share
>
> BIND = Board independence
>
> BSIZE = Board size

To interpret the correlation coefficient, researchers examine the coefficient (R) and the associated significant value. The strength of association between two variables is showed in Table 3.2. Board independence and board size as the nominal independent variable, and ROE and EPS which are the indicators of firm performance as the numerical dependent variables are included in Pearson Correlation Analysis.

According to the Table 4.7, the correlation between the independent variables which are board independence and board size is -0.37. The existence of multicollinearity is checked by looking at the magnitude of correlation between the independent variables to avoid highly correlated variables that will affect the overall outcome (Garson, 2006). There is no existence of multicolleniearity in this study since the correlation between the independent variables is lower than 0.9.

## 4.3.2.1 The relationship between Board Independence and Firm Performance

Table 4.8: Person Correlation Analysis

between ROE, EPS, and board independence

**Correlations**

|  |  | ROE | EPS | BIND |
|---|---|---|---|---|
| ROE | Pearson Correlation | 1 | .542** | .483** |
|  | Sig. (2-tailed) |  | .000 | .000 |
|  | N | 205 | 205 | 205 |
| EPS | Pearson Correlation | .542** | 1 | .764** |
|  | Sig. (2-tailed) | .000 |  | .000 |
|  | N | 205 | 205 | 205 |
| BIND | Pearson Correlation | .483** | .764** | 1 |
|  | Sig. (2-tailed) | .000 | .000 |  |
|  | N | 205 | 205 | 205 |

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

Source: Developed for the research.

**$H_{2a}$: There is a positive relationship between board independence and ROE**.

Pearson correlation analysis indicates that there is a **positive** relationship between board independence and ROE as the Person

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Correlation, r-value is positive value. In the other words, the higher board independence will lead to higher ROE. According to the Rules of Thumb, Pearson correlation, r-value of 0.483 falls under the category of $\pm0.41$ to $\pm0.70$ which means board independence is **moderately** correlated with ROE. The relationship between board independence and ROE is moderate but definite.

Based on the significant value of 0.000 which is less than 0.05 ($p<0.05$), it is concluded that there is a perfectly **significant relationship** between board independence and ROE. Therefore, null hypotheses ($H_0$) is rejected and alternative hypotheses ($H_1$) is accepted.

**$H_{2b}$: There is a positive relationship between board independence and EPS.**

Based on the Person Correlation Analysis, it indicates that there is a **positiv**e relationship between board independence and EPS which shows the higher board independence will leads to higher EPS. The r-value of 0.764 indicates that the board independence is **highly associated** with EPS according to the Rules of Thumb.

Significant value of 0.000 ($p<0.005$) shows that there is a **significant relationship** between board independent and EPS. Therefore, $H_0$ is rejected and $H_1$ is accepted.

## 4.3.2.2 The relationship between Board Size and Firm Performance

Table 4.9: Person Correlation Analysis

between ROE, EPS, and board size

**Correlations**

| | | ROE | EPS | BSIZE |
|---|---|---|---|---|
| ROE | Pearson Correlation | 1 | .542$^{**}$ | .034 |
| | Sig. (2-tailed) | | .000 | .628 |
| | N | 205 | 205 | 205 |
| EPS | Pearson Correlation | .542$^{**}$ | 1 | .040 |
| | Sig. (2-tailed) | .000 | | .568 |
| | N | 205 | 205 | 205 |
| BSIZE | Pearson Correlation | .034 | .040 | 1 |
| | Sig. (2-tailed) | .628 | .568 | |
| | N | 205 | 205 | 205 |

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

Source: Developed for the research

**H$_{3a}$: There is a negative relationship between board size and ROE.**

Based on Table 4.9, r-value shows that there is a **positive** relationship between board size and ROE. In the other words, higher board size will leads to higher ROE. R-value of 0.034 falls under the range of

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$\pm 0.00$ to $\pm 0.20$ based on the Rules of Thumb and therefore the relationship between board size and ROE is **weak and almost negligible**.

Significant value of 0.628 (p>0.05) shows that there is **no significant relationship** between board size and ROE. Therefore, $H_0$ is accepted and $H_1$ is rejected.

**$H_{3b}$: There is a significant relationship between board size and EPS.**

There is a **positiv**e relationship between board size and EPS as there is a positive r-value. In the other words, higher board size will leads to higher EPS. Correlation coefficient of 0.040 which falls under the category of $\pm 0.00$ to $\pm 0.20$ shows a **slight and almost negligible** relationship between board size and EPS based on the Rules of Thumb.

Significant value of 0.568 shows that board size is **highly irrelevant** with EPS as the significant value is more than 0.05. Therefore, $H_0$ is accepted and $H_1$ is rejected.

### 4.3.3 Multiple Linear Regression Analysis

#### 4.3.3.1 Return on Equity (ROE)

Table 4.10: Model Summary of Multiple Linear Regression Analysis
for ROE

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .487[a] | .237 | .226 | 10.45991 |

a. Predictors: (Constant), Size, Independence, CEO

Source: Developed for this research

The R value in the model summary represents the correlation coefficient between the dependent variable and independent variables. Based on the Table 4.10, the value of correlation coefficient (R value) is 0.487 for ROE in this study. It indicates that there is a positive relationship between the independent variables (CEO duality status, board independence, and board size) and one of the indicators of the firm performance (ROE). The regression line significantly explains 48.7% of the total variation of ROE.

On the other hand, the R square for this study is 0.237. It explains that the independent variables (CEO duality status, board independence, and board size) can explain 23.7% of the variations in one of the indicators of the firm performance (ROE). However, it still leaves 76.3% unexplained in this study. In other word, there are other additional variables which are important in explaining firm performance that has not been considered in this study.

Table 4.11: ANOVA[b] of Multiple Linear Regression Analysis

for ROE

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6846.972 | 3 | 2282.324 | 20.860 | .000[a] |
| | Residual | 21991.357 | 201 | 109.410 | | |
| | Total | 28838.329 | 204 | | | |

a. Predictors: (Constant), Size, Independence, CEO

b. Dependent Variable: ROE

Source: Developed for the research

**$H_1$: There is a significant relationship between all the independent variables (CEO duality status, board independence, and board size) and ROE.**

Based on the table 4.11, ANOVA shows that the F-value of 20.860 is significantly at the 0.05 level. The p-value of 0.000 which is lesser than the significant level of 0.05, therefore $H_1$ is accepted. The model for this study with the predictors of CEO duality status, board independence, and board size has work well in explaining the variation in ROE.

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Table 4.12: Multiple Linear Regression Analysis for ROE

**Coefficients[a]**

| | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -17.092 | 4.415 | | -3.872 | .000 |
| | CEO | -1.365 | 2.205 | -.039 | -.619 | .536 |
| | BIND | 37.390 | 4.770 | .492 | 7.839 | .000 |
| | BSIZE | .316 | .390 | .050 | .809 | .419 |

a. Dependent Variable: ROE

Source: Developed for the research

Based on the Table 4.12, unstandardized coefficients (B) shows the relationship can be denoted as following equation:

$$ROE = -17.092 - 1.365\,DUAL + 37.390\,BIND + 0.316\,BSIZ$$

where ROE is return on equity; DUAL is 1 if the CEO is also a chairman of board and 0 otherwise; BIND is the proportion of the independent directors among the board of directors; and BSIZ is the numbers of directors in the company.

**$H_{1a}$ : There is a significant relationship between CEO duality status and ROE.**

Table 4.11 indicates that CEO duality status is not significant influence on ROE, because the p-value for CEO duality status is 0.536 which is more than the significant value of 0.05. When other variables

are held constant, for every one unit increase in CEO duality status, ROE will decrease by 1.365 units.

### $H_{2a}$: There is a positive relationship between board independence and ROE.

Moreover, the board independence was found to exert a significant positive influence on ROE because the p-value for board independence is 0.000 which is less than the alpha value 0.05. When other variables are held constant, for every one unit increase in board independence, the ROE will increase by 37.390 units.

### $H_{3a}$: There is a negative relationship between board size and ROE.

Lastly, board size is not significant influence on ROE, because the p-value for board size is 0.419 which is more than the alpha value 0.05. When other variables are held constant, for every one unit increase in board size, the ROE will increase by 0.390 units.

**4.3.3.1 Earning per Share (EPS)**

Table 4.13: Model Summary of Multiple Linear Regression Analysis
for EPS

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .770[a] | .593 | .587 | 12.29368 |

a. Predictors: (Constant), Size, Independence, CEO

Source: Developed for the research

The R value in the model summary represents the correlation coefficient between the dependent variable and independent variables. Based on the Table 4.13, the value of correlation coefficient (R value) is 0.770 for EPS in this study. It indicates that there is a positive relationship between the independent variables (CEO duality status, board independence, and board size) and one of the indicators of firm performance (EPS). The regression line significantly explains 77.0% of the total variation of EPS.

On the other hand, the R square for this study is 0.593. It explains that the independent variables (CEO duality status, board independence, and board size) can explain 59.3% of the variations in one of the indicators of firm performance (EPS). However, it still leaves 40.7% unexplained in this study. In other word, there are other additional variables which are important in explaining firm performance that has not been considered in this study.

Table 4.14: ANOVA[b] of Multiple Linear Regression Analysis

for EPS

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 44248.346 | 3 | 14749.449 | 97.592 | .000[a] |
| | Residual | 30378.040 | 201 | 151.135 | | |
| | Total | 74626.386 | 204 | | | |

a. Predictors: (Constant), Size, Independence, CEO

b. Dependent Variable: EPS


Source: Developed for the research


**$H_1$: There is a significant relationship between all the independent variables (CEO duality status, board independence, and board size) and EPS.**


Based on the table 4.14, ANOVA shows that the F-value of 97.592 is significantly at the 0.05 level. The p-value of 0.000 which is less than the significant level of 0.05, therefore $H_1$ is accepted. The model for this study with the predictors of CEO duality status, board independence, and board size has work well in explaining the variation in EPS.

Table 4.15: Multiple Linear Regression Analysis for EPS

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -53.336 | 5.189 | | -10.279 | .000 |
| | CEO | -3.820 | 2.591 | -.068 | -1.474 | .142 |
| | Independence | 95.238 | 5.606 | .780 | 16.989 | .000 |
| | Size | .661 | .458 | .065 | 1.441 | .151 |

a. Dependent Variable: EPS

Source: Developed for the research

Based on Table 4.15, unstandardized coefficients (B) shows that the relationship can be denoted as following equation:

$$EPS = -53.336 - 3.820\,DUAL + 95.238\,BIND + 0.661\,BSIZ$$

where EPS is earning per share; DUAL is 1 if the CEO is also a chairman of board and 0 otherwise; BIND is the proportion of the independent directors among the board of directors; and BSIZ is the numbers of directors in the company.

**$H_{1b}$: There is a significant relationship between CEO duality status and EPS.**

Table 4.15 indicates that CEO duality status is not significant influence on EPS, because the p-value for CEO duality status is 0.142 which is more than the alpha value of 0.05. When other variables are

held constant, for every one unit increase in CEO duality, the EPS will decrease by 3.820 units.

**H$_{2b}$: There is a positive relationship between board independence and EPS.**

Moreover, the board independence was found to exert a significant positive influence on EPS because the p-value for board independence is 0.000 which is less than the alpha value of 0.05. When other variables are held constant, for every one unit increase in board independence, the EPS will increase by 95.238 units.

**H$_{3b}$: There is a negative relationship between board size and EPS.**

Lastly, board size is not significant influence on EPS, because the p-value for board size is 0.151 which is more than the alpha value 0.05. When other variables are held constant, for every one unit increase in board size, the EPS will increase by 0.661 units.

## 4.4 Conclusion

Analysis of the research is mainly focused in this chapter, the further explanation is presented to provide more understanding of this research. These results are analysed by using charts, figures, and tables. The relationship between the independent variables (CEO duality status, board independence, and board size) and dependent variables are explained based on the results.

In the next chapter, the summary of statistical analysis, discussion of major findings, managerial implications, limitations of the study and recommendation will be discussed.

# CHAPTER 5 DISCUSSION, CONCLUSION AND IMPLICATION

## 5.0 Introduction

All the data and hypotheses were justified and analysed in the previous chapter. A more detail interpretation of research results will be explained to determine whether the hypotheses is supported by the data or not. This chapter consists of discussion on major findings, implications of the statistical analysis, limitation of the study and the recommendation for future research. Lastly, an overall conclusion of the entire study aligned with the research objectives will be presented.

## 5.1 Summary of Statistical Analysis

### 5.1.1 Descriptive Analysis

In this research, a total 205 public listed companies are chosen and analysed. The public listed companies are classified into ten different sectors industrial which are construction, consumer products, hotels, industrial products, IPC, mining, plantation, properties, technology and trading/services. Among the 205 companies, the majority of the data collection from the industrial products (35.10 percent or 72 samples) followed by trading/services (19 percent or 39 samples), consumer products (16.10 percent or 33 samples) and properties (12.70 percent or 26 samples).

Table 5.1: The Central Tendencies Measurement of Constructs

for ROE, EPS, CEO duality status, board independence, and board size

| | ROE | EPS | CEO | BIND | BSIZE |
|---|---|---|---|---|---|
| N      Valid | 205 | 205 | 205 | 205 | 205 |
|         Missing | 0 | 0 | 0 | 0 | 0 |
| Mean | 10.41 | 15.62 | 0.13 | 0.68 | 7.34 |
| Median | 7.85 | 10.30 | 0.00 | 0.67 | 7.00 |
| Mode | 5.87[a] | 4.00[a] | 0.00 | 0.67 | 7.00 |
| Std. Deviation | 1.19 | 1.91 | 0.34 | 0.16 | 1.88 |
| Minimum | -24.74 | -19.50 | 0.00 | 0.40 | 3.00 |
| Maximum | 83.62 | 126.85 | 1.00 | 1.00 | 15.00 |

Source: Developed for the research

Based on Table 5.1, it is found that the three independent variables will affect
the firm performance. The data analysis of ROE and EPS are going to
interpret how well the firm performances of the public listed companies. The
means of ROE and the mean of EPS are 10.41 and 15.62 respectively. Others
data are also analysed with firm performance. The others data are CEO duality
status, board independence and board size. Among these three data, board size
has highest mean (7.34) and the highest median and standard deviation which
7.00 and 1.88 respectively.

## 5.1.2 Inferential Analysis

### 5.1.2.1 Independent Sample T-Test

Table 5.2: Summary of Independent Sample T-Test

| Alternative Hypothesis | Significant (2-tailed) | Result |
|---|---|---|
| $H_{1a}$: There is a significant relationship between CEO duality status and ROE. | 0.443 (>0.05) | Accept $H_0$ & Reject $H_{1a}$ |
| $H_{1b}$: There is a significant relationship between CEO duality status and EPS. | 0.254 (>0.05) | Accept $H_0$ & Reject $H_{1b}$ |

Source: Developed for the research

Levene's test for equality of variances for both ROE and EPS are 0.648 and 0.064 respectively which are higher than 0.05 and it shows that ROE and EPS are assumed equal variances.

The significant value of 0.443 for ROE proves that there is no significant difference between CEO duality status and ROE. Significant value of 0.254 for EPS also shows that there is no significant difference between CEO duality status and EPS. Therefore, it is conclude that the CEO duality status does not influence the firm performance.

### 5.1.2.2 Pearson Correlation Analysis

Table 5.3: Summary of Pearson Correlation Analysis

| Alternative Hypothesis | Pearson Correlation | Direction & Strength | Significant p-value | Significance of correlation | Result |
|---|---|---|---|---|---|
| $H_{2a}$:<br>There is a positive relationship between board independence and ROE. | 0.483 | Positive & Moderate | 0.000 | Significant | Reject $H_0$ & Accept $H_{2a}$ |
| $H_{2b}$:<br>There is a positive relationship between board independence and EPS. | 0.764 | Positive & High | 0.000 | Significant | Reject $H_0$ & Accept $H_{2b}$ |
| $H_{3a}$:<br>There is a negative relationship between board size and ROE. | 0.034 | Positive & Slight and almost negligible | 0.628 | Not Significant | Accept $H_0$ & Reject $H_{3a}$ |
| $H_{3b}$:<br>There is a negative relationship between board size and EPS. | 0.040 | Positive & Slight and almost negligible | 0.568 | Not Significant | Accept $H_0$ & Reject $H_{3b}$ |

Source: Developed for the research

Table 5.3 showed the significant relationship between the independent variables and the dependent variable according to Pearson Correlation Analysis. These independent variables include board independence and board size while Dependent variables are ROE and EPS.

Based on the computed result, it can be concluded that board independence has a positive relationships with both indicators of firm performance which are ROE and EPS. Board independence has high association with ROE and moderate association with EPS. However, board size has slight association with ROE and EPS.

Based on the both significant value, board independence has significant relationship with both ROE and EPS while board size has no significant relationship with both ROE and EPS.

In the absent of high correlation value, it is concluded that there is no existence of multicollinearity between independent variables since all the r value is below 0.9.

## 5.1.2.3 Multiple Linear Regressions

### 5.1.2.3.1 Return on Equity

Table 5.4: Multiple Linear Regression Analysis for ROE

| R value | R Square | F-statistic | Significance value |
|---------|----------|-------------|--------------------|
| 0.487   | 0.237    | 20.860      | 0.000              |

Source: Developed for the research

The R value based on the Multiple Linear Regression Analysis is 0.487 which indicates that the regression line significantly explains 48.7% of the total variation of ROE. It also shows that

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there is a positive relationship between all the independent variables and ROE.

R Square of 0.237 shows the independent variables (CEO duality status, board independence, and board size) can explain 23.7% of dependent variables (ROE). Based on ANOVA's significant value of 0.000 which is less than the significant level of 0.05, $H_1$ is accepted.

Table 5.5: Summary of Multiple Linear Regression Analysis
for ROE

| Alternative Hypothesis | Significant p-value | Results |
|---|---|---|
| $H_{1a}$: There is a significant relationship between CEO duality status and ROE. | 0.536 | Accept $H_0$ & Reject $H_{1a}$ |
| $H_{2a}$: There is a positive relationship between board independence and ROE. | 0.000 | Reject $H_0$ & Accept $H_{2a}$ |
| $H_{3a}$: There is a negative relationship between board size and ROE. | 0.419 | Accept $H_0$ & Reject $H_{3a}$ |

Source: Developed for the research

Both CEO duality status and board size has no significant influence on ROE as the p-value are 0.536 and 0.419 respectively which are higher than 0.05. Boards independence is significantly influence ROE as the p-value is lower than 0.05 which is 0.000.

**5.1.2.3.2 Earning per Share**

Table 5.6: Multiple Linear Regression for EPS

| R-value | R Square | F-statistic | Significance value |
|---------|----------|-------------|--------------------|
| 0.770 | 0.593 | 97.592 | 0.000 |

Source: Developed for the research

The R value based on the Multiple Linear Regression Analysis is 0.770 which indicates that the regression line significantly explains 77.0% of the total variation of EPS. It also shows that there is a positive relationship between all the independent variables and EPS.

R Square of 0.593 shows the independent variables (CEO duality status, board independence, and board size) can explain 59.3% of dependent variables (EPS). Based on ANOVA's significant value of 0.000 which is less than the significant level of 0.05, $H_1$ is accepted.

Table 5.7: Summary of Multiple Linear Regression for EPS

| Alternative Hypothesis | Significant p-value | Significance |
|------------------------|---------------------|--------------|
| $H_{1b}$: There is a significant relationship between CEO Duality status and EPS. | 0.142 | Accept $H_0$ & Reject $H_{1b}$ |
| $H_{2b}$: There is a positive relationship between Board Independence and EPS. | 0.000 | Reject $H_0$ & Accept $H_{2b}$ |

| | | |
|---|---|---|
| $H_{3b}$: <br><br> There is a negative relationship between <br><br> Board Size and Earning per Share. | 0.151 | Accept $H_0$ <br> & <br> Reject $H_{3b}$ |

Source: Developed for the research

Both CEO duality status and board size has no significant influence on EPS as the p-value are 0.536 and 0.419 respectively which are higher than 0.05. Boards independence is significantly influence EPS as the p-value is lower than 0.05 which is 0.000.

## 5.2 Discussions of major findings

### 5.2.1 CEO duality status

Results in this research found that the CEO duality status has no relationship with firm performance as shown in the Independent Sample T-Test where significant value is higher than 0.05. Based on the Multiple Linear Regression Analysis, it also signifies that CEO duality status does not affect firm performance as the significant p-value is higher than 0.05.

This is supported in the studies of Chen et al. (2008) and Ramdani and Witteloostuijin (2009) which showed that there is no linking between CEO duality status and firm performance.

## 5.2.2 Board independence

Based on the data collected, it is proven that the board independence does affect the firm performance. The result of Pearson Correlation Analysis and Multiple Linear Regression Analysis prove that board independence is positively and significantly affects the firm performance (ROE and EPS). Thus, $H_0$ is rejected.

This result is in line with the findings of researches such as Hutchinson and Gul (2004), Byrd et al (2010) and Guest, Gosh and Hughes (as cited in Arslan, Karan, & Eksi, 2010) that show a positive relationship between board independence and firm performance.

## 5.2.3 Board size

In this research, it is evident that the board size has no influence on firm performance. Pearson Correlation Analysis shows the relationship is positive but only slight and almost negligible. Significant value in the Multiple Linear Regression Analysis shows that board size and firm performance has no significant relationship. Therefore, $H_0$ is accepted.

The result that board size has a positive relationship with firm performance which is supported by Mashayekhi and Bazaz (2010). In contrast, most research such as Hermalin and Wiesbach (2003), Mak and Kusnadi (2005), O'Connell and Cramer (2010) and Bennedsen et al. (2008) found negative relationship between board size and firm performance. The explanation provided in past research include large board will result in less meaningful discussion, large board is more difficult to control and more time consuming in decision making.

# 5.3 Implications of the Study

## 5.3.1 Managerial Implication

This research examines the impact of corporate governance on firm's performance. In overall, this research provides the important implications for the shareholders, stakeholders, managements and potential investors to make the decision. The result of the study shows the effect of CEO duality status, board independence, and board size on the firm performance.

The result of the study for CEO duality status shows that there is no relationship between CEO duality status and firm performance. According to Chen et al. (2008), the conclusion of finding is CEO duality status does not have any linkage with firm performance. The empirical results show there is no significant relationship between CEO duality status and firm performance. Besides, there are 86.8% of CEOs do not hold the position as chairman of the board in the same period. However, it will not affect the firm performance.

Furthermore, the result is showing a positive relationship between board independence with the firm performance. In others word, the board independent significantly affect the firm performance. According to Ramdani and Witteloostuijin (2009), the effective of independent board is important to protect shareholders' interest. The decision making and managing whole operation are responsible by different people from the board will increase the firm's value. Based on the researcher Lefort and Urzue (2007), the proportion of outside director positively and significantly correlated with firm performance. Besides, it is similarly happened in the study of Byrd et al. (2010) which points out a significant positive effect of independent outside directors on firm performance.

Lastly, the board size has no relationship with firm performance based on the result. It is supported by the study of Bhagat and Black (2002) which found no evidence on the relationship between board size and firm performance, even though there are hints of an inverse correlation between two.

## 5.4 Limitations of the Study

There are several limitations found in this research study. Firstly, the data used in this study is covered one year period of 2010 only. The practices of corporate governance are a long term effect. They might affect the firm performance in later years. Thus, the result may different when the data cover more than one year. The actual correlation between the corporate governance and firm performance is not showed in this research.

Secondly, the target respondent in this study is only public listed companies which listed in Main Market of Bursa Malaysia. Therefore, it is only suitable for local listed firm and could not generalize to broad cross-section of firms and also to other countries. Local non-listed firm might not fit in the situation of this research as well.

Besides, there are limited supports from locally published journal database regarding the corporate governance in Malaysia public listed companies. In addition, most of the articles are require to be purchased by the viewers. Moreover, most of the past studies were conducted in foreign countries which may not compatible with our country's culture.

Furthermore, many corporate governance components are investigated by the researchers. There are many factors can affect firm performance other than board characteristics. Nevertheless, not all board characteristics are analysed in this research study. The practices and characteristics that have not considered in this research study could have a possibility to affect our results.

Finally, the actual independency level of the independent non-executive directors (INEDs) is questionable. Their independence status and effectiveness is determined base on their designation and the company's firm performance of the year which is measured by ROE and EPS rather than the duties and responsibilities that they have actually performed.

## 5.5 Recommendations for Future Research

The future researchers who wish to conduct their research on the area of corporate governance are recommended to extend their sample period. The sample period should be covered more than one year as the practices of corporate governance are a long term effect. Hence, the effects of the corporate governance to the firm performance will be examined more accurately.

Besides, future researchers are recommended to broaden their sample frame to other regions if the result is to be contributed globally. The target respondent should incorporate other public listed companies in the Asia region, such as companies listed in Hong Kong Stock Exchange and Singapore Exchange. Thus, the results of the research are able to be used and referred by the Asia's researchers.

Furthermore, more journals, articles and researches based on Malaysia are encouraged to be referred instead of foreign country as the cultures, religions, behavior and lifestyle of Malaysia is different with other countries if the research is mainly targeted Malaysian.

In order to attain a greater accuracy of results generated, future researchers are advised to incorporate more independent variables or corporate governance practices that been suggested and supported by past studies in their research study. For example, the board characteristics of ownership concentration and proportion of insiders. Besides, there are many other factors or independent variables that may influence the

firm performance, such as corporate social responsibility disclosures and managerial ownership. In addition, other proxies for firm valuation such as return on asset (ROA) and annual stock return (RET) should be incorporated.

Finally, a better approach should be conducted to examine the independency and the effectiveness of the independent non-executive directors. An investigation of their oversight duties to the top management such as the participation in the advisory, strategic and monitoring duties should be undertaken. Nevertheless, the subsequent contribution of the duties carried out to firm performance should also be investigated.

## 5.6 Conclusion

This study is to examine the relationship of the firm performance and board characteristics which includes CEO duality status, board independence, and board size in Malaysian public listed companies. In this research, the result shows that the board independence have a positive significant relationship with the firm performance. However, the other two variables which are CEO duality status and board size have no significant relationship with firm performance.

The result of this research also indicated that the variable that has high influence towards the firm performance in Malaysian public listed companies is board independence. It is more preferable in determining the firm performance according to the result from this research. However, other approaches of board characteristic can be included to enhance the firm performance.

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**APPENDIX**

Appendix 2.1: Summary of Literature Review

| Study | Country | Data | Major Findings |
|---|---|---|---|
| Brown & Caylor, 2005 | Atlanta | Secondary data of sample consists 2,327 firms as of February 1, 2003 and using the data obtained from Institutional Shareholder Service (ISS). | i. Firm with relatively low governance level are less profitable. <br> ii. Independent BOD, nominating committees and compensation committees leads to better firm performance. |
| Bai, Liu, Lu, Song, & Zhang, 2004 | China | Secondary data from annual report total 2905 firms for the year 1999 to 2001. | i. CEO duality status will reduce the company's valuation. <br> ii. The ration of outside directors in the Board has no significant effect on firm's market valuation <br> iii. Increase the shareholdings of top managers will not enhance the firm's value. <br> iv. Smaller firms will have higher valuation. |
| Chen, Lin, & Yi, 2008 | Taiwan | Secondary data from Standard and Poor's ExecuComp database (1999 to 2003). | i. Recent trend shows increased number for firms converting to non duality CEO structure. <br> ii. CEO duality status has no significant effect on firm performance. |

| Bhagat & Black, 2000 | United State | Secondary data on board composition in 1991 from Institutional Shareholder Services of 957 US public corporation. | i. Firm performing poorly tend to adopt more independent boards<br>ii. However, firms do not achieve better (even worse) performance as a result of the change. |
|---|---|---|---|
| Byrd, Cooperman, & Glenn, 2010 | United State | Secondary data of 666 non-financial firms from Rusell's 1000 index. | i. Larger portion of independent non-executive directors has positive effect on firm performance.<br>ii. Excessive CEO compensation will significantly and negatively affect company performance. |
| Ramdani & Witteloostuijn, 2009 | Belgium | Secondary data of sample consists of 66 Indonesian, 111 Korean, 75 Malaysia and 61 Thai firms for the year 1997 to 2002. | CEO duality status and ratio of independent directors will affect performance of firms with average performance and not for firms performing below or above average. |
| Mak & Kusnadi, 2005 | Singapore | Secondary data of 230 firms listed on the Singapore Stock Exchange(SGX) and 230 firm listed on Kuala Lumpur Stock Exchange(KLSE). | Board size are inversely related to firm value in Malaysia and Singapore. |
| O'Connell & Cramer, 2010 | Ireland | Secondary data of 44 listed firms from Irish Stock Exchange | i. Board size is significant negative related to firm performance,<br>ii. Board size is significantly less negative related to |

| | | | |
|---|---|---|---|
| | | | smaller firms' firm performance<br><br>iii. A positive and significant association between firm performance and the percentage of non-executives on the board is apparent |
| Mashayekhi & Bazaz, 2008 | Iran | Secondary data from companies listed in the Tehran Stock Exchange (TSE) for the year 2005 to 2006 which consists 240 firm years. | i. Smaller boards are likely to be more efficient in monitoring management.<br><br>ii. There is a positive and significant relationship between board size and financial performance.<br><br>iii. There is a positive relationship between INED and firm performance.<br><br>iv. There is not significantly negative impact between CEO duality status and firm performance. |
| Bennedsen, Kongsted, & Nielsen, 2008 | Denmark | Secondary data of 7496 joint stock companies in Denmark | size of boards with six or more members is significantly negative related to firm performance |

Appendix 3.1: List of public listed companies in Main Market exclude financial
sector from Bursa Malaysia


1. A & M REALTY BHD
2. ABF MALAYSIA BOND INDEX FUND
3. ABRIC BHD
4. ACOUSTECH BHD
5. ADVANCE SYNERGY BHD
6. ADVANCED PACKAGING TECHNOLOGY (M) BHD
7. ADVENTA BHD
8. AE MULTI HOLDINGS BHD
9. AEON CO. (M) BHD
10. AHB HOLDINGS BHD
11. AHMAD ZAKI RESOURCES BHD
12. AIC CORPORATION BHD
13. AIKBEE RESOURCES BHD
14. AIRASIA BHD
15. AJINOMOTO (M) BHD
16. AJIYA BHD
17. AKN TECH BHD
18. AL-AQAR KPJ REIT
19. AL-HADHARAH BOUSTEAD REIT
20. ALAM MARITIM RESOURCES BHD
21. ALIRAN IHSAN RESOURCES BHD
22. ALUMINIUM COMPANY OF MALAYSIA BHD
23. AMALGAMATED INDUSTRIAL STEEL BHD
24. AMANAH HARTA TANAH PNB
25. AMANARAYA REITS
26. AMFIRST REITS
27. AMOB BHD
28. AMTEK HOLDINGS BHD
29. AMTEL HOLDINGS BHD
30. AMWAY (M) HOLDINGS BHD
31. ANALABS RESOURCES BHD
32. ANCOM BHD
33. ANN JOO RESOURCES BHD
34. APB RESOURCES BHD
35. APEX EQUITY HOLDINGS BHD
36. APEX HEALTHCARE BHD
37. APM AUTOMOTIVE HOLDINGS BHD
38. APOLLO FOOD HOLDINGS BHD
39. APP INDUSTRIES BHD
A- RANK BHD
40. ARK RESOURCES BHD
41. ASAS DUNIA BHD

42.  ASIA FILE CORPORATION BHD
43.  ASIA PACIFIC LAND BHD
44.  ASIAN PAC HOLDINGS BHD
45.  ASTINO BHD
46.  ASTRAL ASIA BHD
47.  ASTRAL SUPREME BHD
48.  ATIS CORPORATION BHD
49.  ATLAN HOLDINGS BHD
50.  ATRIUM REITS
51.  ATURMAJU RESOURCES BHD
52.  AUTOAIR HOLDINGS BHD
53.  AUTOV CORPORATION BHD
54.  AWC BHD
55.  AXIATA GROUP BHD
56.  AXIS INCORPORATION BHD
57.  AXIS REITS
58.  AYER MOLEK RUBBER CO BHD, THE
59.  B.I.G. INDUSTRIES BHD
60.  BANDAR RAYA DEVELOPMENTS BHD
61.  BANENG HOLDINGS BHD
62.  BASWELL RESOURCES BHD
63.  BATU KAWAN BHD
64.  BCB BHD
65.  BERJAYA ASSETS BERHAD
66.  BERJAYA CORPORATION BHD
67.  BERJAYA FOOD BHD
68.  BERJAYA LAND BHD
69.  BERJAYA MEDIA BHD
70.  BERJAYA SPORTS TOTO BHD
71.  BERTAM ALLIANCE BHD
72.  BHS INDUSTRIES BHD
73.  BIMB HOLDINGS BHD
74.  BINA DARULAMAN BHD
75.  BINA GOODYEAR BHD
76.  BINA PURI HOLDINGS BHD
77.  BINTAI KINDEN CORPORATION BHD
78.  BINTULU PORT HOLDINGS BHD
79.  BIO OSMO BHD
80.  BIOSIS GROUP BHD
81.  BLD PLANTATION BHD
82.  BOLTON BHD
83.  BONIA CORPORATION BHD
84.  BOON KOON GROUP BHD
85.  BORNEO OIL BHD
86.  BOUSTEAD HEAVY INDUSTRIES CORP BHD
87.  BOUSTEAD HOLDINGS BHD

88.  BOX-PAK (MALAYSIA) BHD
89.  BP PLASTICS HOLDING BHD
90.  BREM HOLDINGS BHD
91.  BRIGHT PACKAGING INDUSTRY BHD
92.  BRITISH AMERICAN TOBACCO (M) BHD
93.  BSL CORPORATION BERHAD
94.  BTM RESOURCES BHD
95.  C.I. HOLDINGS BHD
96.  CAB CAKARAN CORPORATION BHD
97.  CAELY HOLDINGS BHD
98.  CAHYA MATA SARAWAK BHD
99.  CAM RESOURCES BHD
100. CAN-ONE BHD
101. CAPITAMALLS MALAYSIA TRUST
102. CARLSBERG BREWERY MALAYSIA BHD
103. CB INDUSTRIAL PRODUCT HOLDING BHD
104. CBSA BHD
105. CCK CONSOLIDATED HOLDINGS BHD
106. CCM DUOPHARMA BIOTECH BHD
107. CHANGHUAT CORPORATION BHD
108. CENTRAL INDUSTRIAL CORPORATION BHD
109. CENTURY BOND BHD
110. CENTURY LOGISTICS HOLDINGS BHD
111. CENTURY SOFTWARE HOLDINGS BHD
112. CEPATWAWASAN GROUP BHD
113. CHEE WAH CORPORATION BHD
114. CHEETAH HOLDINGS BHD
115. CHEMICAL COMPANY OF MALAYSIA BHD
116. CHIN TECK PLANTATIONS BHD
117. CHIN WELL HOLDINGS BHD
118. CHINA OUHUA WINERY HOLDINGS LIMITED
119. CHOO BEE METAL INDUSTRIES BHD
120. CHUAN HUAT RESOURCES BHD
121. CLASSIC SCENIC BHD
122. CME GROUP BHD
123. CN ASIA CORPORATION BHD
124. CNI HOLDINGS BHD
125. COASTAL CONTRACTS BHD
126. COCOALAND HOLDINGS BHD
127. COMINTEL CORPORATION BHD
128. COMPLETE LOGISTIC SERVICES BHD
129. COMPUGATES HOLDINGS BHD
130. COMPUTER FORMS (M) BHD
131. CONCRETE ENGINEERING PRODUCTS BHD
132. COUNTRY HEIGHTS HOLDINGS BHD
133. COUNTRY VIEW BHD

134. CRESCENDO CORPORATION BHD
135. CREST BUILDER HOLDINGS BHD
136. CSC STEEL HOLDINGS BHD
137. CYCLE & CARRIAGE BINTANG BHD
138. CYL CORPORATION BHD
139. CYMAO HOLDINGS BHD
140. CYPARK RESOURCES BHD
141. D & O GREEN TECHNOLOGIES BHD
142. D.B.E. GURNEY RESOURCES BHD
143. DAIBOCHI PLASTIC & PACKAGING INDS BHD
144. DAIMAN DEVELOPMENT BHD
145. DAMANSARA REALTY BHD
146. DATAPREP HOLDINGS BHD
147. DAYA MATERIALS BHD
148. DAYANG ENTERPRISE HOLDINGS BHD
149. DEGEM BHD
150. DELEUM BHD
151. DENKO INDUSTRIAL CORPORATION BHD
152. DFZ CAPITAL BHD
153. DIALOG GROUP BHD
154. DIGI.COM BHD
155. DIJAYA CORPORATION BHD
156. DKLS INDUSTRIES BHD
157. DKSH HOLDINGS(M)BHD
158. D'NONCE TECHNOLOGY BHD
159. DNP HOLDING BHD
160. DOLOMITE CORPORATION BHD
161. DOMINANT ENTERPRISE BHD
162. DPS RESOURCES BHD
163. DRB-HICOM BHD
164. DUFU TECHNOLOGY CORP. BHD
165. DUTALAND BHD
166. DUTCH LADY MILK INDUSTRIES BHD
167. DXN HOLDINGS BHD
168. EASTERN & ORIENTAL BHD
169. EASTERN PACIFIC INDUSTRIAL CORP. BHD
170. ECM LIBRA FINANCIAL GROUP BHD
171. ECOFIRST CONSOLIDATED BHD
172. ECS ICT BHD
173. EDARAN BHD
174. EDEN INC BHD
175. EFFICIENT E-SOLUTIONS BHD
176. EG INDUSTRIES BHD
177. EKOVEST BHD
178. EKOWOOD INTERNATIONAL BHD
179. EKSONS CORPORATION BHD

180. EMAS KIARA INDUSTRIES BHD
181. EMICO HOLDINGS BHD
182. EMIVEST BHD
183. ENCORP BHD
184. ENG KAH CORPORATION BHD
185. ENG TEKNOLOGI HOLDINGS BHD
186. ENGTEX GROUP BHD
187. EONMETALL GROUP BHD
188. EP MANUFACTURING BHD
189. EQUINE CAPITAL BHD
190. ESSO MALAYSIA BHD
191. ESTHETICS INTERNATIONAL GROUP BHD
192. ETI TECH CORPORATION BHD
193. EUPE CORPORATION BHD
194. EURO HOLDINGS BHD
195. EUROSPAN HOLDINGS BHD
196. EVERGREEN FIBREBOARD BHD
197. EWEIN BHD
198. EXCEL FORCE MSC BHD
199. FABER GROUP BHD
200. FACB INDUSTRIES INCORPORATED BHD
201. FAJARBARU BUILDER GROUP BHD
202. FAR EAST HOLDINGS BHD
203. FARLIM GROUP (M) BHD
204. FARM'S BEST BHD
205. FAVELLE FAVCO BHD
206. FCW HOLDINGS BHD
207. FEDERAL FURNITURE HOLDINGS (M) BHD
208. FIAMMA HOLDINGS BHD
209. FIBON BHD
210. FIMA CORPORATION BHD
211. FITTERS DIVERSIFIED BHD
212. FOCAL AIMS HOLDINGS BHD
213. FORMIS RESOURCES BHD
214. FORMOSA PROSONIC INDUSTRIES BHD
215. FRASER & NEAVE HOLDINGS BHD
216. FREIGHT MANAGEMENT HLDGS BHD
217. FRONTKEN CORPORATION BHD
218. FSBM HOLDINGS BHD
219. FTSE BURSA MALAYSIA KLCI ETF
220. FURNIWEB INDUSTRIAL PRODUCTS BHD
221. FURQAN BUSINESS ORGANISATION BHD
222. FUTUTECH BHD
223. GADANG HOLDINGS BHD
224. GAMUDA BHD
225. GEFUNG HOLDING  BHD

226. GENERAL CORPORATION BHD
227. GENTING BHD
228. GENTING MALAYSIA BHD
229. GENTING PLANTATIONS BHD
230. GEORGE KENT (M) BHD
231. GE-SHEN CORPORATION BHD
232. GHL SYSTEMS BHD
233. GLENEALY PLANTATIONS (M) BHD
234. GLOBAL CARRIERS BHD
235. GLOBETRONICS TECHNOLOGY BHD
236. GLOMAC BHD
237. GOH BAN HUAT BHD
238. GOLDEN FRONTIER BHD
239. GOLDEN LAND BHD
240. GOLDEN PHAROS BHD
241. GOLDIS BHD
242. GOLSTA SYNERGY BHD
243. GOODWAY INTEGRATED INDUSTRIES BHD
244. GOPENG BHD
245. GPA HOLDINGS BHD
246. GRAND CENTRAL ENTERPRISES BHD
247. GRAND HOOVER BHD
248. GREEN PACKET BHD
249. GROMUTUAL BHD
250. GSB GROUP BHD
251. GUAN CHONG BHD
252. GUH HOLDINGS BHD
253. GUINNESS ANCHOR BHD
254. GUNUNG CAPITAL BERHAD
255. GUOCOLAND (MALAYSIA) BHD
256. GW PLASTICS HLDGS BHD
257. HAI-O ENTERPRISE BHD
258. HAISAN RESOURCES BHD
259. HALEX HOLDINGS BHD
260. HANDAL RESOURCES BHD
261. HAP SENG CONSOLIDATED BHD
262. HAP SENG PLANTATIONS HOLDINGS BHD
263. HARBOUR-LINK GROUP BHD
264. HARN LEN CORPORATION BHD
265. HARRISONS HOLDINGS (M) BHD
266. HARTALEGA HOLDINGS BHD
267. HARVEST COURT INDUSTRIES BHD
268. HEITECH PADU BHD
269. HEKTAR REITS
270. HELP INTERNATIONAL CORPORATION BHD
271. HEVEABOARD BHD

272. HEXAGON HOLDINGS BHD
273. HEXZA CORPORATION BHD
274. HIAP TECK VENTURE BHD
275. HIL INDUSTRIES BHD
276. HING YIAP GROUP BHD
277. HIROTAKO HOLDINGS BHD
278. HO HUP CONSTRUCTION COMPANY BHD
279. HO WAH GENTING BHD
280. HOCK HENG STONE INDUSTRIES BHD
281. HOCK LOK SIEW CORPORATION BHD
282. HOCK SENG LEE BHD
283. HOCK SIN LEONG GROUP BHD
284. HONG LEONG INDUSTRIES BHD
285. HOVID BHD
286. HPI RESOURCES BHD
287. HUA YANG BHD
288. HUAT LAI RESOURCES BHD
289. HUBLINE BHD
290. HUNZA PROPERTIES BHD
291. HUP SENG INDUSTRIES BHD
292. HWA TAI INDUSTRIES BHD
293. HYTEX INTEGRATED BHD
294. I-BHD
295. IBRACO BHD
296. ICAPITAL.BIZ BHD
297. IGB CORPORATION BHD
298. IJM CORPORATION BHD
299. IJM LAND BHD
300. IJM PLANTATIONS BHD
301. IMASPRO CORPORATION BHD
302. INCH KENNETH KAJANG RUBBER PLC
303. INGRESS CORPORATION BHD
304. INNOPRISE PLANTATIONS BHD
305. INTEGRATED LOGISTICS BHD
306. INTEGRATED RUBBER CORPORATION BHD
307. INTEGRAX BHD
308. IOI CORPORATION BHD
309. IPMUDA BHD
310. IQ GROUP HOLDINGS BHD
311. IREKA CORPORATION BHD
312. INDUSTRONICS BHD
313. IRE-TEX CORPORATION BHD
314. IRM GROUP BHD
315. IVORY PROPERTIES GROUP BHD
316. JADI IMAGING HOLDINGS BHD
317. JAKS RESOURCES BERHAD

318. JASA KITA BHD
319. JAVA BHD
320. JAYA TIASA HOLDINGS BHD
321. JAYCORP BHD
322. JCY INTERNATIONAL BHD
323. JERASIA CAPITAL BHD
324. JOBSTREET CORPORATION BHD
325. JOHAN HOLDINGS BHD
326. JOHORE TIN BHD
327. JOTECH HOLDINGS BHD
328. JPK HOLDINGS BHD
329. JT INTERNATIONAL BHD
330. K. SENG SENG CORPORATION BHD
331. K-STAR SPORTS LIMITED
332. KAMDAR GROUP (M) BHD
333. KARAMBUNAI CORP BHD
334. KAWAN FOOD BHD
335. KBB RESOURCES BHD
336. KBES BHD
337. KECK SENG (M) BHD
338. KEIN HING INTERNATIONAL BHD
339. KEJURUTERAAN SAMUDRA TIMUR BHD
340. KELADI MAJU BHD
341. KEN HOLDINGS BHD
342. KENCANA PETROLEUM BHD
343. KESM INDUSTRIES BHD
344. KEY ASIC BERHAD
345. KFC HOLDINGS (M) BHD
346. KHEE SAN BHD
347. KHIND HOLDINGS BHD
348. KIA LIM BHD
349. KIAN JOO CAN FACTORY BHD
350. KIM HIN INDUSTRY BHD
351. KIM LOONG RESOURCES BHD
352. KIMLUN CORPORATION BHD
353. KINSTEEL BHD
354. KKB ENGINEERING BHD
355. KLCC PROPERTY HOLDINGS BHD
356. KLUANG RUBBER CO (M) BHD
357. KNM GROUP BHD
358. KNUSFORD BHD
359. KOBAY TECHNOLOGY BHD
360. KOMARKCORP BHD
361. KONSORTIUM LOGISTIK BHD
362. KONSORTIUM TRANSNASIONAL BHD
363. KOSSAN RUBBER INDUSTRIES BHD

364. KOTRA INDUSTRIES BHD
365. KPJ HEALTHCARE BHD
366. KPS CONSORTIUM BHD
367. KRETAM HOLDINGS BHD
368. KRISASSETS HOLDINGS BHD
369. KSL HOLDINGS BHD
370. KUALA LUMPUR KEPONG BHD
371. KUANTAN FLOUR MILLS BHD
372. KUB MALAYSIA BHD
373. KUCHAI DEVELOPMENT BHD
374. KULIM (M) BHD
375. KUMPULAN EUROPLUS BHD
376. KUMPULAN FIMA BHD
377. KUMPULAN H&L HIGH-TECH BHD
378. KUMPULAN HARTANAH SELANGOR BHD
379. KUMPULAN JETSON BHD
380. KUMPULAN PERANGSANG SELANGOR BHD
381. KUMPULAN POWERNET BHD
382. KWANTAS CORPORATION BHD
383. KYM HOLDINGS BHD
384. LAFARGE MALAYAN CEMENT BHD
385. LAND & GENERAL BHD
386. LANDMARKS BHD
387. LATEXX PARTNERS BHD
388. LATITUDE TREE HOLDINGS BHD
389. LAY HONG BHD
390. LB ALUMINIUM BHD
391. LBI CAPITAL BHD
392. LBS BINA GROUP BHD
393. LCTH CORPORATION BHD
394. LEADER STEEL HOLDINGS BHD
395. LEADER UNIVERSAL HOLDINGS BHD
396. LEBAR DAUN BHD
397. LEE SWEE KIAT GROUP BHD
398. LEN CHEONG HOLDING BHD
399. LEONG HUP HOLDINGS BHD
400. LEWEKO RESOURCES BHD
401. LFE CORPORATION BHD
402. LIEN HOE CORPORATION BHD
403. LII HEN INDUSTRIES BHD
404. LINEAR CORPORATION BHD
405. LINGKARAN TRANS KOTA HOLDINGS BHD
406. LINGUI DEVELOPMENT BHD
407. LION CORPORATION BHD
408. LION DIVERSIFIED HOLDINGS BHD
409. LION FOREST INDUSTRIES BHD

410. LION INDUSTRIES CORPORATION BHD
411. LIPO CORPORATION BHD
412. LKT INDUSTRIAL BHD
413. LONDON BISCUITS BHD
414. LTKM BHD
415. LUSTER INDUSTRIES BHD
416. LUXCHEM CORPORATION BHD
417. LYSAGHT GALVANIZED STEEL BHD
418. MAGNA PRIMA BHD
419. MAGNI-TECH INDUSTRIES BHD
420. MAH SING GROUP BHD
421. MAHAJAYA BHD
422. MAJOR TEAM HOLDINGS BHD
423. MAJUPERAK HOLDINGS BHD
424. MALAYAN FLOUR MILLS BHD
425. MALAYAN UNITED INDUSTRIES BHD
426. MALAYSIA AICA BHD
427. MALAYSIA AIRPORT HOLDINGS BHD
428. MALAYSIA PACIFIC CORP BHD
429. MALAYSIA PACKAGING INDUSTRY BHD
430. MALAYSIA SMELTING CORPORATION BHD
431. MALAYSIA STEEL WORKS (KL) BHD
432. MALAYSIAN AE MODELS HOLDINGS BHD
433. MALAYSIAN AIRLINE SYSTEM BHD
434. MALAYSIAN BULK CARRIERS BHD
435. MALAYSIAN PACIFIC INDUSTRIES BHD
436. MALAYSIAN RESOURCES CORPORATION BHD
437. MALPAC HOLDINGS BHD
438. MALTON BHD
439. MAMEE-DOUBLE DECKER (M) BHD
440. MANULIFE HOLDINGS BHD
441. MARCO HOLDINGS BHD
442. MASTER-PACK GROUP BHD
443. MASTERSKILL EDUCATION GROUP BHD
444. MAXBIZ CORPORATION BHD
445. MAXIS BHD
446. MAXTRAL INDUSTRY BHD
447. MAXWELL INTERNATIONAL HOLDINGS BHD
448. MBM RESOURCES BHD
449. MEDA INC. BHD
450. MEDIA CHINESE INTERNATIONAL LTD
451. MEDIA PRIMA BHD
452. MEGA FIRST CORPORATION BHD
453. MELEWAR INDUSTRIAL GROUP BHD
454. MENANG CORPORATION (M) BHD
455. MENTIGA CORPORATION BHD

456. MERCURY INDUSTRIES BHD
457. MERGE ENERGY BHD
458. MERGE HOUSING BHD
459. MESB BHD
460. MESINIAGA BHD
461. METAL RECLAMATION BHD
462. METECH GROUP BHD
463. METRO KACANG HOLDINGS BHD
464. METROD (M) BHD
465. METRONIC GLOBAL BHD
466. MHC PLANTATIONS BHD
467. MIECO CHIPBOARD BHD
468. MILUX CORPORATION BHD
469. MINETECH RESOURCES BHD
470. MINHO (M) BHD
471. MINTYE INDUSTRIES BHD
472. MISC BHD
473. MITHRIL BHD
474. MITRAJAYA HOLDINGS BHD
475. MK LAND HOLDINGS BHD
476. MMC CORPORATION BHD
477. MTD ACPI ENGINEERING BHD
478. MUAR BAN LEE GROUP BHD
479. MUDA HOLDINGS BHD
480. MUDAJAYA GROUP BHD
481. MUHIBBAH ENGINEERING (M) BHD
482. MUI PROPERTIES BHD
483. MULPHA INTERNATIONAL BHD
484. MULPHA LAND BHD
485. MULTI SPORTS HOLDINGS LTD
486. MULTI-CODE ELECTRONICS INDS. (M) BHD
487. MULTI-PURPOSE HOLDINGS BHD
488. MULTI-USAGE HOLDINGS BHD
489. MULTI VEST RESOURCES BHD
490. MUTIARA GOODYEAR DEVELOPMENT BHD
491. MWE HOLDINGS BHD
492. MY E.G. SERVICES BHD
493. MYCRON STEEL BHD
494. MyETF DJISLAMICMKTMSIATITANS25
495. NAGAMAS INTERNATIONAL BHD
496. NAIM HOLDINGS BHD
497. NAIM INDAH CORPORATION BHD
498. NAKAMICHI CORPORATION BHD
499. NARRA INDUSTRIES BHD
500. NATURAL BIO RESOURCES BHD
501. NCB HOLDINGS BHD

502. NEGRI SEMBILAN OIL PALMS BHD
503. NESTLE (M) BHD
504. NEW HOONG FATT HOLDINGS BHD
505. NGIU KEE CORPORATION (M) BHD
506. NI HSIN RESOURCES BHD
507. NILAI RESOURCES GROUP BHD
508. NOTION VTEC BHD
509. NPC RESOURCES BHD
510. NTPM HOLDINGS BHD
511. NV MULTI CORPORATION BHD
512. NWP HOLDINGS BHD
513. NYLEX (M) BHD
514. OCB BHD
515. OCI BHD
516. OCTAGON CONSOLIDATED BHD
517. OGAWA WORLD BHD
518. OKA CORPORATION BHD
519. OLYMPIA INDUSTRIES BHD
520. ORIENTAL FOOD INDUSTRIES HOLDINGS BHD
521. ORIENTAL HOLDINGS BHD
522. ORIENTAL INTEREST BHD
523. ORNAPAPER BHD
524. OSK PROPERTY HOLDINGS BHD
525. P.A. RESOURCES BHD
526. P.I.E. INDUSTRIAL BHD
527. PADIBERAS NASIONAL BHD
528. PADINI HOLDINGS BHD
529. PAHANCO CORPORATION BHD
530. PAN MALAYSIA CORPORATION BHD
531. PAN MALAYSIA HOLDINGS BHD
532. PAN MALAYSIAN INDUSTRIES BHD
533. PANASONIC MANUFACTURING MALAYSIA BHD
534. PANTECH GROUP HOLDINGS BHD
535. PAOS HOLDINGS BHD
536. PARAGON UNION BHD
537. PARAMOUNT CORPORATION BHD
538. PARKSON HOLDINGS BHD
539. PASDEC HOLDINGS BHD
540. PATIMAS COMPUTERS BHD
541. PBA HOLDINGS BHD
542. PCCS GROUP BHD
543. PDZ HOLDINGS BHD
544. PELANGI PUBLISHING GROUP BHD
545. PELIKAN INT.CORPORATION BHD
546. PLS PLANTATIONS BHD
547. PENSONIC HOLDINGS BHD

548. PENTAMASTER CORPORATION BHD
549. PERAK CORPORATION BHD
550. PERDANA PETROLEUM BHD
551. PERDUREN (M) BHD
552. PERISAI PETROLEUM TEKNOLOGI BHD
553. PERMAJU INDUSTRIES BHD
554. PERUSAHAAN SADUR TIMAH M'SIA (PERSTIMA) BHD
555. PERWAJA HOLDINGS BERHAD
556. PETALING TIN BHD
557. PETRA PERDANA BHD
558. PETRONAS CHEMICALS GROUP BHD
559. PETRONAS DAGANGAN BHD
560. PETRONAS GAS BHD
561. PHARMANIAGA BHD
562. PINTARAS JAYA BHD
563. PJ DEVELOPMENT HOLDINGS BHD
564. PJBUMI BHD
565. PJI HOLDINGS BHD
566. PLB ENGINEERING BHD
567. PLENITUDE BHD
568. PLUS EXPRESSWAYS BHD
569. PMB TECHNOLOGY BHD
570. PNE PCB BHD
571. POH HUAT RESOURCES HOLDINGS BHD
572. POH KONG HOLDINGS BHD
573. POLY GLASS FIBRE (M) BHD
574. POS MALAYSIA BHD
575. PPB GROUP BHD
576. PREMIUM NUTRIENTS BHD
577. PRESS METAL BHD
578. PRESTAR RESOURCES BHD
579. PRICEWORTH INTERNATIONAL BHD
580. PRINSIPTEK CORPORATION BHD
581. PROGRESSIVE IMPACT CORPORATION BHD
582. PROLEXUS BHD
583. PROTASCO BHD
584. PROTON HOLDINGS BHD
585. PUBLIC PACKAGES HOLDINGS BHD
586. PULAI SPRINGS BHD
587. PUNCAK NIAGA HOLDINGS BHD
588. PW CONSOLIDATED BHD
589. PWE INDUSTIRES BHD
590. QL RESOURCES BHD
591. QSR BRANDS BHD
592. QUALITY CONCRETE HOLDINGS BHD
593. QUILL CAPITA TRUST

594. RALCO CORPORATION BHD
595. RAMUNIA HOLDINGS BHD
596. RANHILL BHD
597. RAPID SYNERGY BHD
598. RELIANCE PACIFIC BHD
599. RESINTECH BHD
600. REX INDUSTRY BHD
601. RIMBUNAN SAWIT BHD
602. RIVERVIEW RUBBER ESTATES BHD
603. ROCK CHEMICAL INDUSTRIES (M) BHD
604. RUBBEREX CORPORATION (M) BHD
605. SAAG CONSOLIDATED (M) BHD
606. SALCON BHD
607. SAMCHEM HOLDINGS BHD
608. SANBUMI HOLDINGS BHD
609. SAPURA RESOURCES BHD
610. SAPURACREST PETROLEUM BHD
611. SARAWAK CABLE BHD
612. SARAWAK CONSOLIDATED INDUSTRIES BHD
613. SARAWAK OIL PALMS BHD
614. SARAWAK PLANTATION BHD
615. SATANG HOLDING BHD
616. SBC CORPORATION BHD
617. SCANWOLF CORPORATION BHD
618. SCGM BHD
619. SCICOM (MSC) BHD
620. SCIENTEX BHD
621. SCOMI ENGINEERING BHD
622. SCOMI GROUP BHD
623. SCOMI MARINE BHD
624. SEACERA TILES BERHAD
625. SEAL INCORPORATED BHD
626. SEALINK INTERNATIONAL BHD
627. SEE HUP CONSOLIDATED BHD
628. SEG INTERNATIONAL BHD
629. SELANGOR DREDGING BHD
630. SELANGOR PROPERTIES BHD
631. SELOGA HOLDINGS BHD
632. SENI JAYA CORPORATION BHD
633. SEREMBAN ENGINEERING BHD
634. SERN KOU RESOURCES BHD
635. SHANGRI-LA HOTELS (M) BHD
636. SHELL REFINING CO (F.O.M.) BHD
637. SHH RESOURCES HOLDINGS BHD
638. SHIN YANG SHIPPING CORPORATION BHD
639. SHL CONSOLIDATED BHD

640. SIG GASES BHD
641. SIGNATURE INTERNATIONAL BHD
642. SILK HOLDINGS BHD
643. SILVER BIRD GROUP BHD
644. SIME DARBY BHD
645. SIN HENG CHAN (MALAYA) BHD
646. SINARIA CORPORATION BHD
647. SINDORA BHD
648. SINO HUA-AN INTERNATIONAL BHD
649. SINOTOP HOLDINGS BHD
650. SITT TATT BHD
651. SKB SHUTTERS CORPORATION BHD
652. SKP RESOURCES BHD
653. SLP RESOURCES BHD
654. SMIS CORPORATION BHD
655. SMPC CORPORATION BHD
656. SOUTH MALAYSIA INDUSTRIES BHD
657. SOUTHERN ACIDS (M) BHD
658. SOZO GLOBAL LIMITED
659. SP SETIA BHD
660. SPK-SENTOSA CORPORATION BHD
661. SPRITZER BHD
662. STAMFORD COLLEGE BHD
663. STAR PUBLICATIONS (M) BHD
664. STARHILL REITS
665. STONE MASTER CORPORATION BHD
666. SUBUR TIASA HOLDINGS BHD
667. SUCCESS TRANSFORMER CORP BHD
668. SUIWAH CORPORATION BHD
669. SUMATEC RESOURCES BHD
670. SUNCHIRIN INDUSTRIES (M) BHD
671. SUNGEI BAGAN RUBBER CO (M) BHD
672. SUNRISE BHD
673. SUNWAY CITY BHD
674. SUNWAY HOLDINGS BHD
675. SUPER ENTERPRISE HOLDINGS BHD
676. SUPERLON HOLDINGS BHD
677. SUPERMAX CORPORATION BHD
678. SUPPORTIVE INTERNATIONAL HOLDINGS BHD
679. SURIA CAPITAL HOLDINGS BHD
680. SWEE JOO BHD
681. SYARIKAT KAYU WANGI BHD
682. SYCAL VENTURES BHD
683. SYF RESOURCES BHD
684. SYMPHONY HOUSE BHD
685. TA ANN HOLDINGS BHD

686. TA ENTERPRISE BHD
687. TA GLOBAL BHD
688. TA WIN HOLDINGS BHD
689. TAFI INDUSTRIES BHD
690. TAHPS GROUP BHD
691. TAKASO RESOURCES BHD
692. TALAM CORPORATION BHD
693. TALIWORKS CORPORATION BHD
694. TAMADAN BONDED WAREHOUSE BHD
695. TAMBUN INDAH LAND BHD
696. TAN CHONG MOTOR HOLDINGS BHD
697. TANJONG PUBLIC LIMITED COMPANY
698. TANJUNG OFFSHORE BHD
699. TASCO BHD
700. TASEK CORPORATION BHD
701. TAS OFFSHORE BHD
702. TATT GIAP GROUP BHD
703. TDM BHD
704. TEBRAU TEGUH BHD
705. TECK GUAN PERDANA BHD
706. TECNIC GROUP BHD
707. TEK SENG HOLDINGS BHD
708. TEKALA CORPORATION BHD
709. TELEKOM MALAYSIA BHD
710. TENAGA NASIONAL BHD
711. TEO GUAN LEE CORPORATION BHD
712. TEO SENG CAPITAL BHD
713. TEXCHEM RESOURCES BHD
714. TH PLANTATIONS BHD
715. THE NOMAD GROUP BHD
716. THE STORE CORPORATION BHD
717. THETA EDGE BHD
718. THONG GUAN INDUSTRIES BHD
719. THREE-A RESOURCES BHD
720. TIEN WAH PRESS HOLDINGS BHD
721. TIGER SYNERGY BHD
722. TIMBERWELL BHD
723. TIME DOTCOM BHD
724. TIME ENGINEERING BHD
725. TIONG NAM LOGISTICS HOLDINGS BHD
726. TOMEI CONSOLIDATED BHD
727. TOMYPAK HOLDINGS BHD
728. TONG HERR RESOURCES BHD
729. TOP GLOVE CORPORATION BHD
730. TOWER REITS
731. TOYO INK GROUP BHD

732. TRACOMA HOLDINGS BHD
733. TRADEWINDS (M) BHD
734. TRADEWINDS CORPORATION BHD
735. TRADEWINDS PLANTATION BHD
736. TRANSMILE GROUP BHD
737. TRANSOCEAN HOLDINGS BHD
738. TRC SYNERGY BHD
739. TRIPLC BHD
740. TRIUMPHAL ASSOCIATES BHD
741. TSH RESOURCES BHD
742. TSM GLOBAL BHD
743. TSR CAPITAL BHD
744. TURBO-MECH BHD
745. UAC BHD
746. UCHI TECHNOLOGIES BHD
747. UDS CAPITAL BHD
748. UEM LAND HOLDINGS BHD
749. UMS HOLDINGS BHD
750. UMS-NEIKEN GROUP BHD
751. UMW HOLDINGS BHD
752. UNICO-DESA PLANTATIONS BHD
753. UNIMECH GROUP BHD
754. UNISEM (M) BHD
755. UNITED BINTANG BHD
756. UNITED KOTAT BHD
757. UNITED MALACCA BHD
758. UNITED MALAYAN LAND BHD
759. UNITED PLANTATIONS BHD
760. UNITED U-LI CORPORATION BHD
761. UOA REITS
762. UPA CORPORATION BHD
763. UTUSAN MELAYU (M) BHD
764. UZMA BHD
765. V.S INDUSTRY BHD
766. VASTALUX ENERGY BERHAD
767. VERSATILE CREATIVE BHD
768. VITROX CORPORATION BHD
769. VOIR HOLDINGS BHD
770. VTI VINTAGE BHD
771. WAH SEONG CORPORATION BHD
772. WANG-ZHENG BHD
773. WARISAN TC HOLDINGS BHD
774. WATTA HOLDING BHD
775. WAWASAN TKH HOLDINGS BHD
776. WCT BHD
777. WEIDA (M) BHD

778. WELLCALL HOLDINGS BHD
779. WHITE HORSE BHD
780. WIJAYA BARU GLOBAL BHD
781. WILLOWGLEN MSC BHD
782. WONG ENGINEERING CORPORATION BHD
783. WOODLANDOR HOLDINGS BHD
784. WTK HOLDINGS BHD
785. WZ STEEL BHD
786. XIAN LENG HOLDINGS BHD
787. XIDELANG HOLDINGS LTD
788. XINQUAN INTERNATIONAL SPORTS HOLDINGS LTD
789. Y&G CORP BHD
790. Y.S.P.SOUTHEAST ASIA HOLDING BHD
791. YA HORNG ELECTRONIC (M) BHD
792. YEN GLOBAL BHD
793. YEE LEE CORPORATION BHD
794. YEO HIAP SENG (M) BHD
795. YI-LAI BHD
796. YINSON HOLDINGS BHD
797. YLI HOLDINGS BHD
798. YNH PROPERTY BHD
799. YOKOHAMA INDUSTRIES BHD
800. YONG TAI BHD
801. YOONG ONN CORPORATION BHD
802. YTL CEMENT BHD
803. YTL CORPORATION BHD
804. YTL LAND & DEVELOPMENT BHD
805. YTL POWER INTERNATIONAL BHD
806. YUNG KONG GALVANISING INDUSTRIES BHD
807. ZECON BHD
808. ZELAN BHD
809. ZHULIAN CORPORATION

Appendix 3.2: Summary of Variable Measurement for the relationship between board characteristics and firm performance in public listed companies.

| Independent Variables | Description | References | Measurement |
|---|---|---|---|
| CEO duality status | Agency theory suggests that CEO duality status create conflict. | Davidson, Goodwin-Stewart, & Kent, 2005 | Nominal data. Firms that separate chairman and CEO will be numbered as '1', otherwise it takes '0'. |
| Board Independence | Proportion of Independent Non Executive director to Non Executive director in percentage | Hashim & Devi, 2005 | Ratio data. Proportion is calculated: $$\frac{number\ of\ independent\ non-executive\ director}{total\ number\ of\ director} \times 100\%$$ |
| Board size | Board size is the total amount of directors in a company | Davidson, Goodwin-Steward, & Kent, 2005 | Ratio data. Exact number of board no matter it is independent or non-independent board of director will be collected from annual report. |

| Dependent variable | Description | References | Measurement |
|---|---|---|---|
| Firm Performance | Firm's performance measured in terms of Earning per Share (EPS) and Return on Equity (ROE) | - Pagach, Norton, & Diamond, 2007 <br> - Leckson-Leckey, Osei, & Harvey, 2011 | - Ratio data. Firms that perform better will have higher EPS and ROE. <br> - $EPS = \frac{net\ income-preferred\ stock\ dividends}{weighted-average\ number\ of\ common\ shares\ outstanding}$ <br> - $ROE = \frac{net\ income}{equity}$ |