THE IMPACT OF BOARD DIVERSITY ON THE PERFORMANCE OF PUBLIC LISTED COMPANIES IN MALAYSIA

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Listed Companies in Malaysia

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DECLARATION

I hereby declare that:

(1) This Research Project is the end result of my 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) The word count of this research report is _____.

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Date: 19 April 2019__

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LIST OF ABBREVIATIONS

MCCG	Malaysian Code of Corporate Governance
OECD	Organization for Economic Co-operation and Development
SPSS	Statistical Package for Social Science
ROA	Return on Assets
TOBINQ	Tobin's Q
GENDER	Gender Diversity
AGE	Age Diversity
ETHNIC	Ethnic Diversity
EDUCATION	Education Level
TENURE	Director's Tenure
ε	Error Term
p-value	Probability Value

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ABSTRACT

This study examines the relationship between board diversity and financial performance among the Top 50 public listed companies by market capitalization in Malaysia from 2013 to 2017. Board diversity includes gender diversity, age diversity, ethnic diversity, education level and director's tenure. The firm financial performance is measured return on assets (ROA) and Tobin's Q. Board size and company size are added in the research framework as control variables. This research uses Panel Data Analysis to examine the overall 5 years results, where the panel estimator approach applied is the random effect. Descriptive analysis is performed by SPSS.

The research outcomes show that age diversity is positively and significantly related to ROA, and ethnic diversity is positively and significantly related to Tobin's Q. Only these two results support the hypothesis. Even though gender diversity is significantly related to ROA, but it is negatively related to ROA, thus the hypothesis is rejected. Education level and director's tenure has no significant impact on both ROA and Tobin's Q. The results also indicate that board size has significant and negative impact on both ROA and Tobin's Q, but company size does not have any significant relationship with ROA and Tobin's Q.

CHAPTER 1

INTRODUCTION

1.1 Introduction and Background of Study

Corporate governance has received much world attention after the case of Enron and WorldCom back in in 2001 and 2002. To overcome this issue, governments in many countries started to implement laws and regulations by setting the best practice of corporate governance as a guideline. The guidelines include Sarbanes-Oxley Act 2002 from United States, the King's Report on Corporate Governance 2002 and 2009 from South Africa, Principles and Guidelines on Corporate Governance 2004 from New Zealand and Corporate Governance Code 2002 from Germany (Norwani, Mohamad, & Chek, 2011).

In Malaysia, Malaysian Code of Corporate Governance (MCCG) 2017 acts as the guideline for all companies regarding the corporate governance issues. MCCG 2017 adopts a hybrid approach. A hybrid approach is the mixture of prescriptive and non-prescriptive approach to the issue of corporate governance. Prescriptive approach refers to the disclosure of the corporate governance standard by the firms, while non-prescriptive approach refers to the disclosure of the actual governance practice by the firms which they do not follow the actual corporate governance set by the government. All Malaysian public listed companies are required to follow this guideline, but private companies are not necessary to follow.

According to MCCG 2017, all public listed companies must be led by a board, whose responsibility is to act as the company's leaders and to meet the goal and objectives of the company collectively. Board of directors is referred to a group of individuals, whose major responsibility is to speak on behalf of the shareholders and stakeholders of the

company. One of their roles is to decide the overall firm's direction, to make sure that resources are always available for the company, and to monitor the management's performance closely. In fact, the board of directors must ensure that they are well-understood and well-represent their shareholders and stakeholders' interest.

As the highest authority in the firm, the board shapes one of the pillars of a strong corporate governance framework. Organization for Economic Co-operation and Development (OECD) (2004) highlighted that board of directors should ensure the firm's proper direction, effective monitoring of the management performance, as well as the responsibilities owed to the firm and the shareholders through the principle of corporate governance framework. It is very crucial to have an effective board in the firm in order to fulfil its oversight responsibilities. As such, the importance of the effectiveness of board is stressed in MCCG 2017, where the code brings up that the inclusion of an appropriate board members that matches the firm's objectives and goals can help in diversifying the board with various aspects such as gender, age, experience, cultural background and skills.

The issue of board diversity has been seen increasingly important nowadays, especially in the aspect of corporate governance. The National Association of Corporate Directors Blue Ribbon Commission (2012) in United States has even raised this issue. The commission views diversity as a business issue which relates to the company competitiveness. The firm will not be capable and competent in the business world which yields sustainable long-term shareholder value, without including varieties perspectives and ideas, which can benefit the board in decision making and board monitoring. The U.S. Association further stresses that the race, age and nationality of the directors should be considered during the selection of board of directors.

It can be seen that board diversity has been emphasized by many scholars since last century but the evidence on the impact of board diversity towards the firm performance is rather mixed. Many researches have been done just to prove that board diversity and the firm performance is linked, and it will bring benefits to the company. As such, the scholars (Carter, Simkins, & Simpson, 2003; Erhardt, Werbel, & Shrader, 2003; Krishnan & Park, 2005; Marimuthu & Kolandaisamy, 2009; Zainal, Zulkifli, & Saleh,

2013) have proven the linkage between board diversity and firm performance, with a positive association between both variables. These researches encourage a better understanding on the investor and market, helping to improve the firm's creativity and innovation, as well as raise the effectiveness of the board of directors. However, some studies also show that it might bring a negative impact to the company. A negative relationship between the board diversity and firm financial performance is found by the scholars (Abdullah & Ku Ismail, 2013;Ali, Ng, & Kulik, 2014; Ilaboya & Ashafoke, 2017).

Therefore, the main attention in this research is board diversity. Board diversity's influence on the firm financial performance will be investigated in order to find whether there is a relationship between board diversity and financial performance of public listed companies in Malaysia.

1.2 Problem Statement

In recent years, Malaysian corporate governance has gained much judgement and criticism since the failure of corporate governance in a few companies during or after the financial crisis for instance, Malaysia Airline Systems (MAS), Technology Resources Industries Berhad (TRI), and Perwaja Steel Sdn. Bhd (Norwani et al., 2011). The issues of corporate governance has received great interest due to the rise of governance failures around the world such as Enron, HealthSouth, Arthur Anderson, and WorldCom. However, the role of corporate governance in companies is still being neglected (Sulaiman & Ahmad, 2017).

In this century, one of the most famous cases of governance failure in Malaysia is the case of 1Malaysia Development Berhad (1MDB). Although 1MDB is not a public listed company, this case has brought a serious impact to the corporate world in terms of its governance failure. 1MDB is set up with a capital of RM1 million but the capital ends up becoming mired in RM42-46 billion of debts and suspicious transactions, which resulted in at least RM28 billion unaccounted for. Moreover, there is an arbitration claim of RM26 billion from Abu Dhabi government, as well as a RM40

billion putting at risk or lost via doubtful methods, include theft, bond mispricing and overpayment for assets.

According to Transparency International (2016), the organization found that 1MDB has a short of diligence in the board of directors, the management and the Advisory Board. The company neglected to certify and embrace great corporate governance practice in the business basic leadership process. The board of directors has not been completely informed by the management administration on some choice made, and there are additionally a few situations where the management did not follow the directions given by the board. Lack of consistent polies, control procedures and mechanisms in the board due to short of diversification in the board can lead to a serious failure in corporate governance.

On the other hand, 45 of the Top 100 companies in Malaysia at present do not have boards with a majority of independent directors ("Enhancing boardroom diversity, independence," 2017). The information further shows female directors make up simply 16.8 percent of the boards and 25.6 percent of the top management. There are a total of 972 CEOs yet only 7.2 percent of them are female. In addition, there are at present 21 public listed companies with only male directors on board.

With the uncovering of the most recent MCCG 2017, three broad significant areas have been introduced, which include board composition, female directors on board and independent director's tenure. These areas make up a diversified board. MCCG 2017 highlights that a company should have the correct group of people, with a proper blend of abilities, information, experience and independent elements which suit the firm's targets and objectives to make a powerful and effective board.

To execute and fulfil board diversity, MCCG 2017 expects firms to uncover a gender diversity policy for delegating more female director to the board. The policy should include targets and mechanisms to meet the objectives. MCCG 2017 demands large companies to appoint at least 30 percent of female directors to the board. Furthermore, in MCCG 2012, securities commission introduced a guideline where the independent directors can only serve the board for nine years, extending tenure after nine years on board requires the shareholders' approval annually. However, in the most recent

MCCG 2017, the length of the tenure stays unaltered, yet shareholders' approval is needed annually from nine to twelve years. From the thirteenth year onwards, the firms are relied upon to apply the two-tier voting process. Under tier-1, the large shareholders will cast their votes; under tier-2, the other shareholders will cast their votes. An independent director will only be elected if there is a majority vote at both tiers.

In the light of the progression presented by MCCG 2017, it demands large companies to appoint at least 30 percent of female directors to the board, thus the requirement for independent directors will probably face an increment as opportunities become accessible after some time. With the restrictions introduced by MCCG 2017, it will likewise create extra demand for independent directors. These alterations have the purpose of improving unbiasedness in decision making and successful management monitoring, which unavoidably create extra interest for independent directors.

In addition, board diversity has been discussed frequently as one of the important issues around the world. Referring to Figure 1, it is said that there are diversity found in the board where the countries in orange region achieve 100% of boards with at least one female directors on board in every company; while the countries in grey region have not achieved that every board to have a minimum of one female in its board. Malaysia is one of the countries in grey region, with more that 80% of the board does not have a female board member.

Figure 1.1: Percentage Boards with Female Board Members
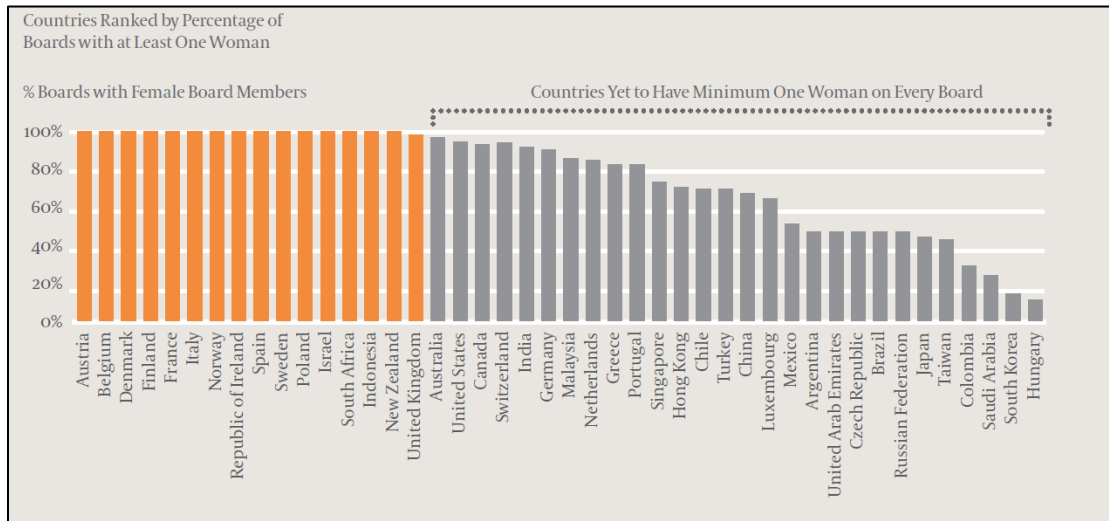
Note. From Egon Zehnder International. (2017). *2016 Global Board Diversity Analysis*. Retrieved from
https://30percentclub.org/assets/uploads/UK/Third_Party_Reports/2016_GBDA_DIGITAL_FIN
AL.pdf

Countries in orange region has started to implement board diversity few years back. This can be seen where quotas have been implemented in these countries. The first country that introduces quotas on board diversity quotas is Norway back in 2003. This board diversity quota was continually acknowledged by numerous countries in Western Europe. For example, Norway, France, Finland and Ireland, Brazil and Australia have 40% quota; Spain has 40% for publically traded companies with more than 250 workers. With all these quotas implemented, Malaysia falls back with just a requirement of 30% of female to be involved in the board since 2017, while other countries already implement it years ago.

In fact, it can be seen that many countries have started to pay attention on the board diversity and financial performance. However, there are conflicting results from all the researches. Researches from all around the world have mixed results, significant or insignificant impact, positive or negative association between board diversity and firm performance. Thus, it is crucial to determine whether board diversity has an influence on the firm performance. Moreover, there is only a handful of studies which investigate

the board diversity and firm financial performance with the companies selected for this study.

1.3 Research Objective

The main objective of this research is to investigate whether board diversity (gender, age, ethnics, education level, director's tenure) has an impact on the financial performance of the public listed companies in Malaysia from the period of 2013 to 2017.

1.4 Research Questions

The primary question following the research objective is how does the demographic diversity among the board of directors affect the financial performance of the public listed companies in Malaysia?

In line with the primary objectives, the following research questions will be answered:

i. Does gender diversity among board of directors have an impact on the financial performance of public listed companies in Malaysia?
ii. Does age diversity among board of directors have an impact on the financial performance of public listed companies in Malaysia?
iii. Does ethnic diversity among board of directors have an impact on the financial performance of public listed companies in Malaysia?
iv. Does education level among board of directors have an impact on the financial performance of public listed companies in Malaysia?
v. Does director's tenure have an impact on the financial performance of public listed companies in Malaysia?

1.5 Significance of Study

The findings of the research have significant value to the board of directors, shareholders, stakeholders, Bursa Malaysia, legislators and the government through an understanding on the effect of board diversity on the financial performance of public listed companies in Malaysia.

With regard to board of directors, the research results will provide them evidence and consideration before they blindly complying with the corporate governance requirements. They will be able to know that board diversity is meaningful to the company and thus determine the optimal person for the board, rather than recruiting a director just to fulfil the requirements.

In addition, this study provides a useful insights to the regulators and policy makers. The findings of the research will contribute information about the board composition of the company and the behaviour of the diversity regarding the financial performance of the companies. This information provides the regulators and policy makers to draw the right requirements to be complied by public listed companies.

As board diversity is a topic that is in the public interest, and good governance relies on an effective balanced board, this study may help to improve and enhance the governance of public listed companies. The results obtained from this research can be used to support the guidelines recommended to motivate board diversity as the best practice for corporate governance for the public listed companies to pursue with.

1.6 Chapter Layout

The arrangement of research report presentation is vital. A clear and systematic presentation is essential and easy to be understood. Thus the research report is dissected into five chapters as follows.

Chapter 1: Introduction

The introduction of the research report starts with the background and the problem statement, the objectives and questions of the research, significance of study and the overall chapter layout for the research report.

Chapter 2: Literature Review

This chapter delivers the review of literature followed by formulation of hypothesis and development of theoretical framework.

Chapter 3: Research Method

This chapter reveals how the study was taken place. It comprises research design, data collection method, sampling design, research instrument, construct instrument and method of analysis.

Chapter 4: Research Results

The descriptive analysis obtained from SPSS and panel data analysis from EViews are presented in chapter 4.

Chapter 5: Discussion and Conclusion

The last chapter presents the discussion of the investigation results. It provides the summary of hypothesis testing, conclusions, limitations and recommendations for future studies.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter delivers a comprehensive breakdown on the literatures of the research. Relevant literature is reviewed firstly, followed by the hypotheses development and the structure of conceptual framework. Conclusion will be the last part of this chapter.

2.2 Legal Requirement of Directors in Malaysia

Malaysian Companies Act 2016 has defined directors as the individual holding the position of CEO, CFO, COO or some other individual principally in charge of the management of the organization. Section 196 of Companies Act 2016 necessitates that private companies should have minimum one director and public companies minimum two directors. An individual can act as a director if he is a natural person not less eighteen years old. Other than that, an individual may be appointed as a director if he is not an undischarged bankrupt, not convicted an offence relating to the promotion, formation or management of a company and not convicted of an offence related to fraud, bribery and dishonesty.

As such, the main obligations of the board of directors is to make sure that the best performance of the organization is achieved. Since Malaysia practices the unitary board structure, the board is the highest component of a firm's internal corporate governance framework, thus the board of directors serves an oversight and advisory role, as well as

accountable for strategic planning, development of goals and direction, as well as the measurement of performance against the goals and objectives (Şener & Karaye, 2014).

Bursa Malaysia Listing Requirement requires at least 1/3 or two directors of the board to be independent directors. Additionally, MCCG 2017 recommends that at least half of the board ought to be independent directors. The board should also consist of majority of independent directors for large companies.

2.3 Board Diversity

Board diversity issue is increasingly gaining more consideration and attention particularly in countries which practice unitary board structure, where the board composition is biased towards a specific gender, age or ethnicity (Abdullah & Ku Ismail, 2013). Board diversity has been characterized by Van Der Walt, Ingley, Shergill and Townsend (2006) as the variety in the composition of the directorate. Two categories of board diversity have been classified which are demographic diversity and cognitive diversity. Demographic diversity refers to the observable or readily detectable attributes of directors (Zainal et al., 2013) that includes gender, age, race or ethnicity, and nationality, while cognitive diversity refers to the imperceptible attributes of directors (Zainal et al., 2013) such as educational, functional and occupational background, values, perception, affection and personality characteristics. In addition, Khan & Bari (2011) has divided board diversity into two perspectives which are the task-oriented diversity and the relations-oriented diversity. The task-oriented diversity includes the education, function and tenure of the directors, while the relations-oriented diversity includes the age, gender and ethnicity.

Board diversity provides substantial benefits to the organizations. Various researches have been carried out to document the advantages of a diverse board. Ferreira (2010) states that a diverse board encourages optimal decision making by providing different perspectives and resources to maximize business and governance performance. A diverse board is in a good position to address the demand of a diverse market, thus enhancing the financial performance of the organization. Furthermore, Carter, Simkins

and Simpson (2003) indicates that a diverse board upgrades better comprehension of the industry, expands innovativeness and development as well as improves problem solving effectiveness. A diverse board also illustrates various perspectives required by the organizations to confront the present complex business environment. For example, the firm reacts better to this technological business era if the board is equipped with a diverse board with various age and educational background, as the younger and skillful directors can provide functional ideas, while the older directors can assist with their experiences in the industry.

Despite the benefits it offers, board diversity has certain drawbacks. Forbes and Milliken (1999) has contended that every demogrphic characteristic of the board of directors provides numerous, complicated and differectiating consequences on the board performance. For instance, despite the fact that a different board has more available access to data sources, it may experience communication and correspondence issues because of the inability to acknowledge other directors' expertise in the problem solving process. The negative outcomes of having more relations-oriented diversity is also highlighted by Williams and O'Reilly (1998). This is because more relations-oriented diversity can prompt negative correspondence such as lower decision speed, errors and conflicts (Williams & O'Reilly, 1998), but a more task-related diversity are connected with positive consequences such as imagination and development.

Efforts have been done in other countries to introduce and improve diversity among the board of directors. Particularly, gender diversity receives the most attention from other countries. In UK, the government has come out with UK Corporate Governance Code 2012 to support board diversity. It was the first year where UK started to ask companies to report on their board diversity. The Code was then revised in 2016, where it requires the companies to provide a separate section in annual reports to describes the policy regarding board diversity, which includes gender diversity or other measurable objectives set for imposing this approach, and progress on accomplishing the targets. In 2018, the Code was revised, which further stresses on the vitality of board diversity, where it urges the boards to make sure the arrangement and progression are planned to promote board diversity.

Apart from that, India also promotes board diversity through its legal system. It is mandatory for companies in India to comply with the requirements to fulfil board diversity. As such, it is required by the Companies Act 2013 of India that every listed company must appoint at least one female director to the board. The vacancy is needed to be replaced before the next board meeting or three months from the vacancy of the director, whichever is later. This provision brings in the gender diversity in the board. Besides, India government makes board diversity policy as a mandatory compliance under the Indian Listing Agreement - New Clause 49 together with the Companies Act of India 2013.

Countries such as Australia, Finland, Germany, Hong Kong and Sweden use 'comply or explain' approach in their Code to promote board diversity, while United States and Norway require the listed companies to comply or else penalty will be imposed. In Malaysia, the government promotes board diversity in Malaysian Code on Corporate Governance, using 'apply or explain an alternative' approach.

2.3.1 Gender Diversity

Generally, women have not been highly presented in corporate world. However, this situation started to change marginally since 1990s. This improvement is noticed when there is a considerable increment of women serving on boards started to happen. There are many other characteristics of board diversity, but gender diversity has gotten the most attention contrasted with others.

Reports have been published to discuss the reasons why women should be on board. Often, the board is being censured for consisting comparable and similar directors, with comparative background, trainings and networks. The highly similarity among the board will ultimately create groupthink. Women on board may avoid this problem where they convey alternate points of views to discuss and decide. Consequently, better decision making occurs and this improves performance of the firm. Furthermore, female have turned into the new dominant part in the highly qualified talent pool. According to Department of Statistic Malaysia (2017), female accounts for 62.06% of

the university graduates in Malaysia and this represent almost half of the labor force. With this, the firm can access the widest talent pool by appointing women on board. Next, having women directors on board can achieve better corporate governance as female directors will in general provide more consideration to review and control the risk they may encounter (Abdullah & Ku Ismail, 2013). Moreover, female directors place extra focus on non-financial performance measures instead of just focus on the financial performance (Abdullah & Ku Ismail, 2013).

In addition, Galbreath (2011) argues that greater gender diversity would raise the confidence of investors, expecting an increase of accountability, transparency, and moral duty from the firm's directors. Investors believe that their interests are protected as women who are represented on board are able to ensure their investments not in conflict with managerial misappropriation, while at the same time code of ethical conduct is enforced. Capezio and Mavisakalyan (2016) further supports that expanding female's participation on board assists in alleviating extortion, thus strengthening the board monitoring function.

In this century, female representation on board stays low. Hassan and Marimuthu (2016) reflects that women involvement on board in only 12.4% in U.S. and 6.4% in the UK. Currently, there is only 11.2% of women involvement on board in all public listed companies in Malaysia according to Minority Shareholders Watchdog Group (2017). Therefore, initiatives have been taken by Malaysia to encourage more women participation on board. Securities Commission of Malaysia has set a diversity agenda in 2011 where the board should ensure that 30% of women participation is reached by 2016. MCCG 2017 has been enforced by Securities Commission of Malaysia that the board must have minimum 30% women directors for large companies. In fact, some European countries have imposed gender quotas to encourage more female participation on board. The first country to implement mandatory quota is Norway, with 40% of female to be appointed on board. This policy is acknowledged slowly by different countries such as Spain, Finland, Iceland and France which have implemented 40% quota. Countries such as Kenya, Italy and Belgium has a 33% quota for women to be on board.

2.3.2 Age Diversity

Age diversity is another vital board characteristic. According to Van Ness, Miesing, and Kang (2010), older board members tend to have more experience to generate a better and stronger firm performance. However, younger board members usually outperform the older board members. One possible reason is that the younger board members are more youthful and eagerly to take part in the monitoring procedure and function. Carter et al. (2003) describes that younger board members are most probably to incorporate female directors compared to the older board members. In other words, younger directors are progressively opened to new practice as compared to older directors who may just keen on keeping up the present state of affairs (Abdullah & Ku Ismail, 2013).

Generally, younger board members perform better in terms of the financial performance. Older board members are more likely to avoid risky decisions (Makhlouf, Laili, Basah, & Siam, 2015). It is argued that younger directors are risk takers, where they believe in high risk will get a high return. As such, younger board members will generate a higher profit compared to the older board members.

Furthermore, the firm might experience a biasness towards a specific segment of age in the market if the directors are mostly from the similar age group. This is because the directors are said to own similar data and encounters (Abdullah & Ku Ismail, 2013). Thus, appointing directors from a diverse age group will tend to assist the board with better understanding from the directors about the similar needs of the stakeholders at their age.

2.3.3 Ethnic Diversity

Notwithstanding the issue of age diversity, the ethnicity of board of directors additionally reflects board diversity. There are a few researches characterize ethnicity as the amount of minorities among the board, due to the reason that they are non-white.

Erhardt et al. (2003) and Lamers (2016) define minorities as the African, Asian, Hispanic, Native Americans and Mixed Race people.

However, the ethnicity in Malaysia is different. There are three primary ethnic groups in Malaysia which are the Malays, Chinese and Indians, as indicated by Department of Statistics Malaysia (2017). The Malays dominate Malaysia's population, trailed by Chinese and Indians. It is contended that the incorporation of different ethnic groups on board is vital, with the fact that every ethnic group has diverse culture different from each other. If there are all three main ethnic groups in the same board, it could be advantageous for the business. For instance, a director will understand more about his ethnic group, in this way it would be beneficial for the board in designing certain strategies to be adopted to attract clients from his ethnic group.

Different ethnic groups own different culture and tradition. However, inability to comprehend the sensitivities of every group may cause the firm being named as discourteous and could influence the firm's reputation and image. Additionally, Abdullah and Ku Ismail (2013) describes that the firm will be seen as an ethnical firm and hold good practice in their business if there are all three ethnic groups on the board. Moreover, it is trusted that different directors from diverse culture generally leads to a higher quality, increasingly compelling and effective compared to directors from the same culture in a group. Carter, Souza, Simkins and Simpson (2010) claims that directors will enhance the nature of the data by providing unique information to the firm if the directors are from diverse background.

Apart from this, firms with diverse cultures may react better in a dynamic environment, thus experiencing different organizational outcomes (Cheong & Sinnakkannu, 2014). Marimuthu (2008) reflects that heterogeneity in ethnicity is positively connected to enhance critical thinking and strengthened the problem-solving process. This is because heterogeneous members are less inclined to be controlled by their social identity due to the reason that they may have more colleagues with different social characters and may rather profit by a various pool of assets (Cheong & Sinnakkannu, 2014).

2.3.4 Education Level

Dahlin, Weingart and Hinds (2005) clarifies the education level of directors such as the skills, knowledge and abilities of the directors undertaking different tasks reflects their educational background. Carsen et al. (2003) underpins that the education background has critical effect on the firm financial performance. This is because the educational foundation of the directors gives a sign of director's knowledgeable and skillful act (Hambrick & Mason, 1984). The number and types of education of the directors gives an indication of his qualities and cognitive preference. Thus, based on the individual qualities, cognitive preference and specific trainings, it is expected that directors with formal and higher education level use distinctive cognitive models in decision making process (Hambrick &Mason, 1984).

Becker (1975) illustrates that formal education is a critical element of human capital. According to Pukthuanthong-Le and Sundaramurthy (2009), general education raises knowledge and capabilities of individuals, thus strengthens their cognitive abilities and gains empowerment. However, the higher the education level, the higher the possibility to create prevalent critical thinking. With greater formal education, individuals may gain more from their work experiences. When there are profitable opportunities, it is argued that the directors with higher formal education are bound to be better at grabbing and achieving them.

Adnan, Sabli, Hashim and Paino (2016) recommends that a board which comprises formal and highly educated individual will demonstrate extra interests and concerns about the environment compared to those who are less educated. This statement is supported by Dahlin et al. (2005), who studies the diversity among the MBA board members, and finds that the education background of the team generates positive impact on the range and depth of information used. Apart from that, directors with higher educational level are bound to embrace important changes in the corporate world (Wiersema & Bantel, 1992). The directors who holds MBAs are expected to fully utilize the learned strategies in evaluating the projects of the organization (Darmadi, 2013). Another investigation done by Graham and Harvey (2002) also reveals that

CFOs who holds MBAs are more likely to use those learned startegies and theories in ecaluating and analyzing the projects.

2.3.5 Director's Tenure

Director's tenure is referred to the number of years that a director has served the board (Van Ness et al., 2010). Recommendation regarding the limitation of the length of service of a director has been made by the authorities for two primary reasons. Firstly, they worry that the independent directors may lose the independence and the external viewpoint that they are expected to convey to the board in the event that they continually stay on the board. Besides, some argue that long-servicing director's contribution may wind down or become less applicable to the future of the organization such that they might run out of new ideas. Long-tenured directors may be less likely to connect and reach outside the firm for information and ideas, avoid debate with one another, which lead to groupthink. In addition, they argue that long-tenured directors are unconcerned with the investor interest (Huang & Hilary, 2017).

Inexperienced and unpracticed directors might be inadequate to perform their role. A short-tenured director may encounter lesser governance issues compared to a long-tenured director, but he does not have a comprehensive understanding of the organization's history and operation environment. This may diminish the effectiveness of board monitoring and thus it will be difficult for them to advise the board (Pozen and Hamacher, 2015). Therefore, the ideal director's tenure remains an uncertain issue among authorities.

However, according to Huang and Hilary (2017), when the director's tenure reaches approximately nine years, the firm experiences the highest value, as summarized in Figure 1 below, where the highest Tobin's Q occurs when the tenure is around nine years.

Figure 2.1 Board Tenure and Firm Value
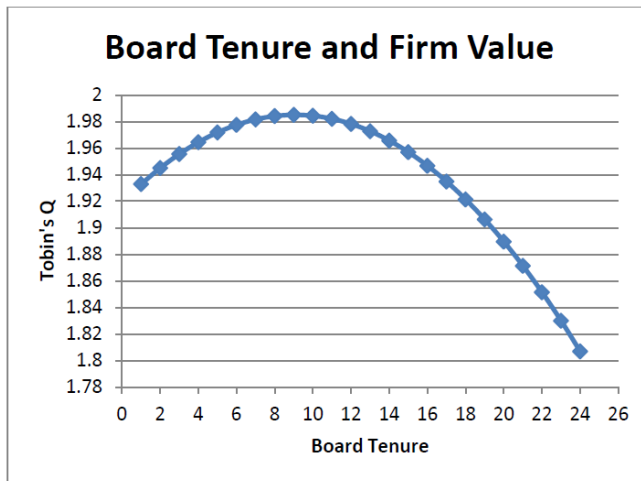
Note: From Huang, S. (2013). *Board tenure and firm performance*. https://doi.org/10.1111/1475 679X.12209

2.3.6 Malaysia's Practice on Board Diversity

Given the increasing significance of board diversity, Malaysia currently has rules, guidelines and recommendation, which encourage female director's participation on boards in the public listed companies. Before this quota has been implemented, Malaysia government has taken effort to bring in board diversity. In 2011, Securities Commission Malaysia has established a diversity agenda with a goal of 30 percent female participating on board. Malaysia wishes to achieve this goal by the year 2016 and the pace towards this objective will be observed and evaluated regularly by Securities Commission Malaysia. This goal is established in the Corporate Governance Blueprint 2011.

Apart from the blueprint, MCCG 2012 and MCCG 2017 also emphasize board diversity. Under MCCG 2012, the board is required to reveal the policy on gender diversity in the annual reports for every company. The disclosure on the policies and targets should be made, as well as the methods to achieve the goal. The latest MCCG 2017 introduced in April 2017 adopts on another strategy to enhance better corporate governance culture. It weighs on the requirement where the firms must reveal their policy in naming more

female directors on board. At least 30 percent of female must be appointed on the board of large companies as specified in MCCG 2017.

Besides, MCCG 2012 and MCCG 2017 also provide certain recommendation in terms of director's tenure. An independent directors should not exceed nine-year tenure limit, as recommended by MCCG 2012. If the limit has reached, the independent director can choose the serve the board in the position of non-independent director. However, if the board has the intention to keep the directors more than the nine-year limit, shareholders' approval must be obtained. MCCG 2017 also has similar recommendation of a nine-year tenure limitation, but it further improvises that shareholders' approval annually must be sought through two-tire voting process if the independent director wishes to maintain on board after twelfth year.

As per Michael Page (2017), the top 3 focus point for diversity and inclusion programmes in Malaysia is gender (47 per cent), age (40 per cent) and ethnicity (25 per cent). There are various companies which have set their board diversity policy. For gender diversity, large companies will set a target of 30 percent but other companies generally do not fix a specific target for female directors in the board. Majority of these companies also do not plan a particular target for age and ethnic diversity. However, they mention that they will march towards to have proper age and ethnic diversity in the board. For the director's education level, the companies also do not fix any specific target regarding their education backgrounds.

2.4 Comparison of Malaysian Code on Corporate Governance 2012 and 2017 on Board Diversity

Board diversity has been emphasized on MCCG 2012 and MCCG 2017. There are certain differences between these two codes regarding board diversity. The differences are summarized in the table below:

Table 2.1: Comparison of MCCG 2012 and 2017 on Board Diversity

Board Composition	MCCG 2012	MCCG 2017
Independent Directors	Majority of the independent directors must be included in the board, the chairman must not be an independent director.	Independent directors must represent half of the board, while the board of large companies should include a majority of independent directors.
Gender Diversity	A policy about board diversity is recommended to be set in the firms.	Mandatory disclosure of the policies regarding the appointment of female directors to the board, as well as the methods to meet the goals set. Large companies must consist of at least 30 percent of female participation on board.
Director's Tenure	Independent directors can only serve the board not exceeding nine years. Shareholders' approval is needed annually if their service exceeds nine years.	Independent directors can only serve the board not exceeding nine years. Shareholders' approval is needed annually from the ninth to twelfth year, after the twelfth year an annual two-tier voting process is required to decide whether to maintain the independent directors on board.

Source: Developed for the research

2.5 Agency Theory

Figure 2.2: The Agency Model
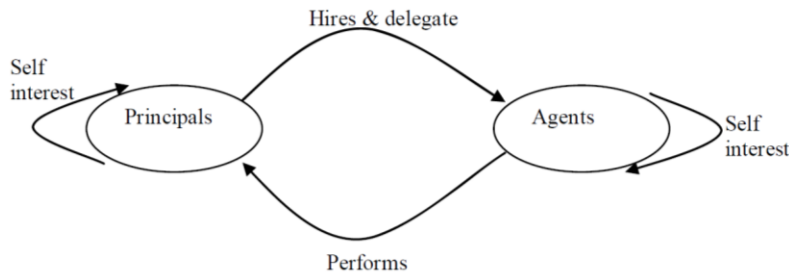
The fundamental theory in corporate governance, agency theory was exploited by Jensen and Meckling (1976), as cited in Abdullah and Valentine (2009). This theory explains the association between the principals and agents in the organization, where principals are investors or shareholders, agents are managers of the organization (Abdallah & Valentine, 2009).

The agency theory addresses the agency problem which illiustrates separation of ownership and control. The shareholders hire executives and managers to handle and administer the companies. Thus, the managers act for the interest of the shareholders. There are issues when the shareholders are not informed whether the managers will handle and deal with the assets and business properly. In this situation, the board arises to solve this issue. The board is chosen by the shareholders to act in their best interest and ensure their personal stake in the organization (Ercan, 2017). They act as the monitoring and advisory function towards the managers. Therefore, the roles of the board are said to be the most important internal watchdog. So as to satisfy these roles, the board must be diversified. Diversified board has multiple viewpoints to oversee and do undertakings viably and accomplish a better board performance. Thus, a diversified board should consist of different foundations and attributes to accomplish a blending of talents and skills.

Other than solving the agency problem, this theory recommends that diversity among the board of directors is advantageous in the board independence (Abdullah & Ku Ismail, 2013; Arena, Cirillo, Mussolino, Pulcinelli, Saggese, & Sarto, 2015). A diversified board will increase its independence, which will prompt the enhancement in board monitoring and thus align with the interests of management and shareholders. This is most probably due to the reason that diverse directors are more averse to escape from their obligation from the managers as indicated by this theory (Carter et al., 2003).

Additionally, a diverse board ultimately prompts better decision making and better competitive advantage. In this way, a board that can make better choices and grab opportunities as well as work as the highest authority is assumed to be more readily in monitoring the condition of the organization according to Erhardt et al. (2003).

2.6 Resource Dependency Theory

Accoding to Pfeffer and Salancik (1978), resource dependency theory regards the external environment of a firm which affects its performance. The board of directors acts as the linking mechanism between the organization and the external shareholders. The linkage is necessary for good corporate governance and enhances the firm performance.
This theory discusses about the undertaking of the board in facilitating the procurement and the utilization of assets to enhance firm performance. The board acts as the linkage of the firm with external factors by acquiring the resources required by the company. These resources may include skills and knowledge from experience and involvement of the directors, data and information gathered from the various networks, as well as the assistance from other organizations that the board are connected to (Singh, 2007).

Gallego, García and Rodríguez (2010) recommends that the diversity among the board of directors provides certain pathway to crucial and rare resources. Board diversity such as gender, age and ethnicity brings positive effect to the firm, as proposed by Gallego, García and Rodríguez (2010). This is because a diverse board provide various resources to the firm. They help to create connections with the stakeholders such as creditors,

distributors and customers. For example, a more differentiated board can have a more comprehensive understanding on its clients or other shareholders, based on the broaden knowledge and experience in the industry.

Diverse board provides more information sources to the firm. However, the board can be indecisive due to overloading of information (Randoy, Oxelheim, & Thomsen, 2006). Thus, it is important to get board members with various experience, background and gender as they are more likely to benefit the firm. In addition, the absence of women on board could be regarded as discrimination, which could give the public an image of problematic and exploitative.

Board with gender diversity provides the firm with continuous competitive advantage (Barney, 2001). It is based on the grounds that gender diversity improves innovativeness which is valuable and irreplaceable by the firm. Similarly, Jhunjhunwala and Mishra (2012) argues that board with younger directors possesses higher education, who know well about the latest technology. Moreover, boards age diversity help to boost the firm performance (Mahadeo, Soobaroyen, & Hanuman, 2012). In addition, boards tenure diversity strengthen a sound debate and communication; while boards with high educational level provide distinctive perspectives to make a good decision (Bantel, 1993).

Nevertheless, there are four benefits provided by resource dependence theory (Hillman & Dalziel, 2003). Firstly, the linkage provides useful resources to the organization with useful information sources and their experience. Secondly, it provides a channel for communication purpose. Next, it acts as an important step in getting supports from the crucial organizations in the external environment. Lastly, it creates a value in legitimizing the firms.

Other than these primary benefits, Pfeffer and Salancik (1978) reflects that the linkage will help the firm to reduce dependencies and uncertainties. As such, board with gender diversity reduces the ambiguity through an access to a more diverse network (Ali et al., 2014), where the firm can have less reliance on the small amount of distributors. The firm could find for better resources and produce better products for a bigger and differentiated customer base. Other than that, board with young directors may have

better connection and networks with rising entrepreneurs, while older directors have connections with more experienced networks. This indeed helps to reduce uncertainties by providing the firm wider networks for suppliers.

2.7 Human Capital Theory

Carter, D'Souza, Simkins and Simpson (2010) demonstrates that human capital theory addresses the role of one's education, expertise, and abilities that could be utilized for the advantages of a firm. OECD (2004) defines human capital as "the knowledge, skills, competences and other attributes typified in human that are significant to economic activity". Education and experience contribute to human capital, while on the other hand schooling and on-job-training is also one of the main focuses of human capital (Becker, 1975).

Diverse board brings special human capital to the firm as the directors have distinctive levels of education backgrounds and different encounters (Kesner, 1988). According to Johnson, Schnatterly, & Hill (2013), the knowledge and encounters of the board which lead the decision making of the organization are the human capital qualities (Johnson, Schnatterly, & Hill, 2013).

Based on human capital experience, Hillman and Dalziel (2003) develop a scientific classification of four roles of directors which are the insiders, business experts, specialists, and community influential. The board of directors help to convey remarkable human capital to the board since they have distinctive dimension of education and encounters. Remarkable human capital diversifies the board of directors. This can enhance and improve decision making due to the special and new points of views and information of the board of directors, as well as extensive abilities and ideas contributed to the board. Thus, human capital theory contends that performance of the organization is influenced by the board diversity because of the unique human capital among the board of directors (Carter et al., 2003).

Human capital theory has been stretched out in other important methods. Directors with various educational foundations and qualification, knowledge, abilities, and encounters

give their remarkable and special human capital to the board, which provide more advantages to the firm performance. Miller and Triana (2009) contends that functional and educational diversity of board of directors increase the board's innovativeness due to the diverse and special human capital. When they make decisions, they are influenced by their past experiences and demographic characteristics.

2.8 Financial Performance

A firm financial performance refers to the extent of monetary estimation that the firm utilizes its resources to generate profits through its essential mode of operation. It allows the firm to determine the organization's profits and knows where the firm stands in the market via the financial and accounting statements of the firm every year. A good financial performance allows above-average profitability to persist over time (Huiselid, 1995). In fact, financial performance can be measured in three categorizations which are accounting returns, investor returns and perpetual (Orlitzky, Schmidt, & Rynes, 2003).

2.8.1 Accounting Returns

Assessments can be made by the firms in short term or long term to determine their financial position in the market, with regards of the profitability, liquidity and also solvency. Earnings per share (EPS), return on asset (ROA) and return on investment (ROI) are some well-known accounting returns. According to Cochran and Wood (1984), the firms can determine how well their earnings react to the internal envionments such as various policies and decision making functions in the firms rather than focusing on the responses from external matket.

2.8.1.1 Return on Asset (ROA)

ROA is commonly used to measure the firm performance in researches. Heikal, Khaddafi and Ummah (2014) uses ROA to measure the extent of the firm's assets which have been utilized to bring in revenues. ROA gives an idea to the investors the efficiency of the managers in using the company assets to generate returns and earnings for the firm. Investors prefer high value of ROA. Moreover, ROA is based on the past performance, which is appropriate to be used in this research. In fact, ROA is widely used in earlier researches on board diversity and firm financial performance. It is calculated by net income divided by total assets of the firm (Marimuthu, 2008; Zainal, Zulkifli, & Saleh, 2013; Diepen, 2015).

2.8.2 Investor Returns

Investor returns is a market-based measurement which is based on the perspectives of shareholders (Cochran & Wood, 1984). The examples for this market-based measure of financial performance are share price, dividend income and Tobin's Q. Investors depend on their perspectives from the past, present and future returns and risk of stocks to decide a firm's share price and its market value (Orlitzky et al., 2003).

2.8.2.1 Tobin's Q

Tobin's Q is an estimation of the organization's performance by measuring the importance of the industry, its focus and stock impacts (Wernerfelt & Montgomery, 1988). Wolfe and Sauaia (2003) describes Tobin's Q as a measure to indicate the degree of effectiveness of the firms from the perspectives of an investment. Tobin's Q exceeds 1 means that the firms are in a stronger position to gain investement opportunities. It provides a measurement to the management that the assets under their command has performed well (Wolfe & Sauaia, 2003). As such, Tobin's Q is calculated with the sum of the market value of equity and book value of total debts divided by the book value of total assets (Abdullah & Ku Ismail, 2013; Yap, Chan, & Zainudin, 2017). Prior

studies use Tobin's Q to measure the firm's market performance (Darmadi, 2011; Abdullah & Ku Ismail, 2013; Hassan & Marimuthu, 2016; Yap et al., 2017).

2.8.3 Perpetual

According to Orlitzky et al. (2003), perpetual measures are used when collecting subjective opinion of the firm performance. It is usually done using surveys. Some of the examples for perpetual measure is the soundness of financial position, financial achievement compared to competitors or well utilization of the firms' assets (Orlitzky et al., 2003). Perpetual measure is more on estimation and rather subjective compared to the previous measures mentioned.

2.9 Hypothesis Development

2.9.1 Relationship between Gender Diversity among Board of Directors and Financial Performance of Public Listed Companies

Even though studies have relatively paid attention on the association between board gender diversity and firm financial performance, the empirical evidence is mixed. Previous researches mostly focus their attention in pondering the relationship in the developed economies which include the United States and German, only a few studies have been done in the emerging economies such as India, Indonesia, Nigeria and China. Female board representation remains a hot issue in the governance issue. With this, resource dependence theory views gender diversity as a rare, valuable and irreplaceable resource that improves the innovativeness of the firm. Continuous competitive advantage can be gained by the firm given that gender diversity is socially complicated and intangible resource to the firm. This statement is supported by several researchers (Carter, Simkins, & Simpson, 2003; Erhardt et al., 2003; Yap, Chan, & Zainudin, 2017), where they find there is a positive impact between gender diversity and firm performance.

Women on board diversifies the board. In Malaysia context, Yap, Chan and Zainudin (2017) failed to find any association between gender diversity and ROA using FTSE 100 companies from 2009-2013. However, when tested with the Blau index, it was positively significantly related to the firm performance. This gives a meaning that at least a female director on board do not have any effect on the performance, but a higher degree of female participation increases Tobin's Q. In U.S., research done by the scholars (Carter et al., 2003; Erhardt et al., 2003) show a positive association between gender diversity and Tobin's Q. Furthermore, Adam and Ferreira (2008) found a significant positive relation between gender diversity and ROA, which is in line with the univariate test result. It indicates that a higher gender diversity is positively associated with higher firm performance. In other words, female representation on board will enhance the firm performance. Erhardt et al. (2003), Krishnan and Park (2005) and Zainal, Zulkifli and Saleh (2013) indicate a positive association between gender diversity and ROA.

Nevertheless, there are studies which show gender diversity is negatively associated with firm performance. Letting, Machuki and Aosa (2012) and Ilaboya and Ashafoke (2017) found that gender diversity and ROA is negatively related, while Abdullah and Ku Ismail (2013) found that gender diversity and Tobin's Q is negatively related. Apart from that, studies also indicate that no significant relationship is found between gender diversity and firm performance. Marimuthu and Kolandaisamy (2009), Van Ness, Miesing and Kang (2010), Ali, Ng and Kulik (2014) and Ercan (2017) fail to detect a significant association between gender diversity and ROA, while Rose (2007) and Kagzi and Guha (2018) fail to detect a significant association between gender diversity and Tobin's Q.

Most studies of board gender diversity for developed economies indicate that greater percentage of female directors lead to higher financial performance. However, the results from Indonesia is different due to the reason that most of the listed companies are family controlled (Darmadi, 2013). Therefore, the results may be affected as the presence of female on board is driven by the family relationships with the controlling shareholder instead of their occupational expertise and experiences (Darmadi, 2013).

Hence, it is proposed that gender diversity positively significantly influences the firm financial performance. Hence, the hypothesis is formulated as follows:

H1$_{1A}$: Gender diversity among the board of directors is positively and significantly related to ROA.

H1$_{1B}$: Gender diversity among the board of directors is positively and significantly related to Tobin's Q.

2.9.2 Relationship between Age Diversity among Board of Directors and Financial Performance of Public Listed Companies

Comparing to gender diversity, there are lesser scholars who have investigated the impact of board age diversity with the financial performance, and they come into different conclusions. A few researchers have indicated that no relationship is found between age diversity and firm performance. Van Ness, Miesing and Kang (2010), Hassan and Marimuthu (2016) and Ercan (2017) found an insignificant association between age diversity and ROA, while Abdullah and Ku Ismail (2013) found an insignificant association between age diversity and Tobin's Q. A hyperbolic association between age diversity and firm performance is found by Engelen, Berg and Laan (2012), where it indicates that age diversity will only increase the financial performance until a certain extent. After that, increase in age diversity will reduce the firm performance.

However, some studies have different results which indicate a positive relationship between age diversity and firm performance. Letting et al. (2012) covered 40 firms in Nairobi Stock Exchange has indicated a significant positive relationship between age diversity and ROA. Moreover, Ararat, Aksu & Cetin (2010) found that there is a positive association between board age diversity and ROA in Istanbul, as well as Darmadi (2011) indicates a positive association between age diversity and both ROA and Tobin's Q in Indonesia. Hassan and Marimuthu (2017) and Kagzi and Guha (2018) also find a positive association between age diversity and Tobin's Q. Hence, the hypothesis is formulated as follows:

H1$_{2A}$: Age diversity among the board of directors is positively and significantly related to ROA.

H1$_{2B}$: Age diversity among the board of directors is positively and significantly related to Tobin's Q.

2.9.3 Relationship between Ethnic Diversity among Board of Directors and Financial Performance of Public Listed Companies

Ethnic diversity has been supported by resource dependence theory in connecting heterogeneity among board of directors with firm performance. Studies have been done in the foreign context. In Turkish, Ararat, Aksu and Cetin (2010) shows the evidence that higher ethnic diversity on the boards will lead to a higher Tobin's Q. Erhardt et al. (2003) again shows ethnic diversity is significantly positively related to ROA. Apart from that, previous studies conducted in Malaysia have shown a positive and significant relationship. Marimuthu (2009) investigated the extent to which ethnic diversity in board of directors affects the firm financial performance (ROA). This study gives an evidence regarding the association between ethnic diversity and financial performance with 100 firms from 2000-2005. Furthermore, Cheong and Sinnakkannu (2014) conducted a research in Malaysia also finds that ethnic diversity has positive influence on both ROA and Tobin's Q.

However, Carter et al. (2010), Hassan and Marimuthu (2016) and Hassan and Marimuthu (2017) find different results, where the ethnicity diversity has no significant link with the firm financial performance, both ROA and Tobin's Q. Therefore, the hypothesis is formulated as follows:

H1$_{3A}$: Ethnic diversity among the board of directors is positively and significantly related to ROA.

H1$_{3B}$: Ethnic diversity among the board of directors is positively and significantly related to Tobin's Q.

2.9.4 Relationship between Educational Level among Board of Directors and Financial Performance of Public Listed Companies

Carsen et al. (2003) underpins that the education background has critical effect on the firm financial performance. Thus, a higher level of education background is expected to increase firm financial performance. Studies (Hambrick, Cho, & Chen, 1996; Darmadi, 2013) have shown that higher educational level is positively associated with both ROA and Tobin's Q. Also, according to Gîrbină, Albu and Albu (2012), the directors who are holding postgraduate degrees is associated with better financial performance (Tobin's Q). This refers to the appreciation of market towards the board members which have a higher education level Moreover, Letting et al. (2012) also indicates that education level has a positive impact on firm performance (ROA).

However, there is one study done by Adnan, Sabli, Hashim and Paino (2016) in Malaysia shows that the education diversity among the directors is insignificantly associated with the firm performance for government linked companies and non-government linked companies for ROA, from 2007-2010. Hassan and Marimuthu (2017) and Kagzi and Guha (2018) both show a negative association between education level of directors and Tobin's Q. Hence, the hypothesis is formulated as follows:

H14A: Education level among the board of directors is positively and significantly related to ROA.

H14B: Education level among the board of directors is positively and significantly related to Tobin's Q.

2.9.5 Relationship between Director's Tenure and Financial Performance of Public Listed Companies

The directors' tenure has similarly received much attention regard to firm performance but there is only a handful studies in this area. The effect of director's tenure has overall mixed results. Hassan and Marimuthu (2017) studied on 125 companies from plantation and energy sector has showed that director's tenure has no significant

influence on Tobin's Q. Diepen (2015) also indicates that the director's tenure does not have significant influence on both ROA and Tobin's Q.

Besides, a study done by Huang and Hilary (2017) found an inverted U-shaped relation between director's tenue and Tobin's Q. It indicates that the marginal effect of a short-tenured board learning dominates the entrenchment effect, while the entrenchment effect of a long-tenured boards dominates the learning effect. This has encouraged the firms to replace and hire new blood to the board to bring in more positive changes to the firms as time passes. Apart from that, Van Ness, Miesing and Kang (2010) finds that the director's tenure is positively and significantly associated with ROA. Hence, the hypothesis is formulated as follows:

$H1_{5A}$: Director's tenure is positively and significantly related to ROA.
$H1_{5B}$: Director's tenure is positively and significantly related to Tobin's Q.

2.10 Conceptual Framework

Figure 2.3: Conceptual Framework

Independent Variable   **Dependent Variable**

Board Diversity
- Gender
- Age
- Ethnic
- Educational level
- Director's tenure

Financial Performance
- ROA
- Tobin's Q

Company size
Board size
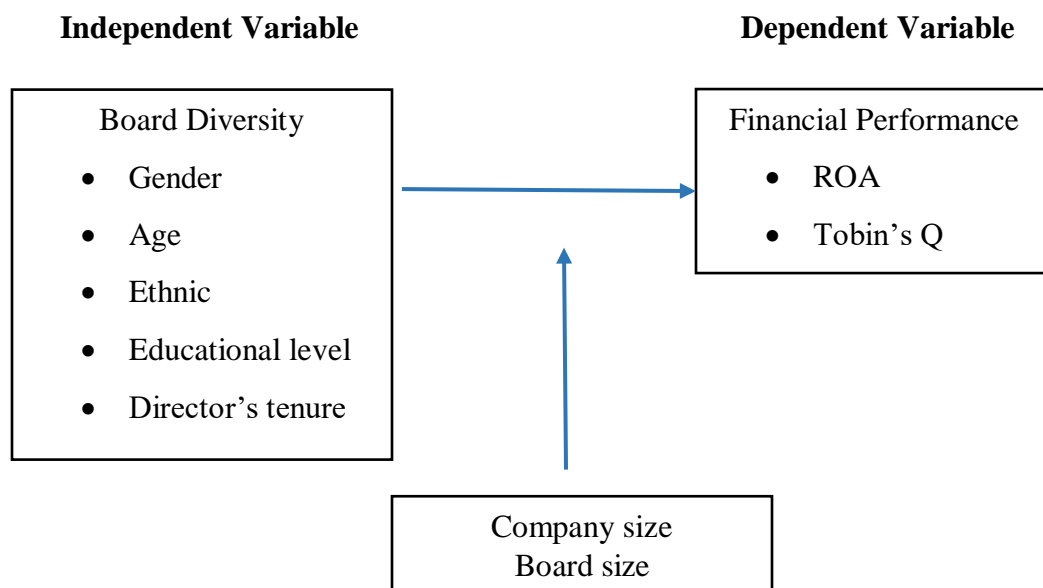
Source: Developed for the research

The theoretical framework is developed to answer the research question and satisfy the research objectives. The independent variable is board diversity (gender, age, ethnics, educational level, director's tenure), while the financial performance which is measured ROA and Tobin's Q as dependent variable.

2.11 Conclusion

In this study, board diversity components which include gender, age, ethnics, education level and director's tenure are selected as independent variable with ROA and Tobin's Q as dependent variable to examine the firm financial performance. The relationship between independent variables and dependent variables are illustrated in the chapter.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Chapter 3 outlines the research methodology applied in this investigation. This chapter also defines the research design, data collection method as well as the sampling design. It also discusses about the research instrument, construct instrument and data analysis for this research. This chapter is crucial as it provides a pathway to collect data and information to continue our research.

3.2 Research Design

A research design gives an overall structure or action plan for the research (Zikmund, Babin, Carr & Griffin, 2013). After identifying the problem statement and develop proposed theoretical framework, the researcher needs to design the research so that all data can be collected and interpreted and an interpretation can be reached (Sekaran & Bougie, 2012). Research is categorized into two different types, which are the qualitative research and quantitative research; while the types of business research can be categorized into three types, which are exploratory, descriptive and causal research.

This research is aimed to investigate the impact of board diversity on financial performance of the public listed companies in Malaysia based on ROA and Tobin's Q from 2013 to 2017. Quantitative research is being conducted. Zikmund et al. (2013) delivers that the quantitative research conveys research objectives through experimental assessments which include numerical estimation and examination

approaches. The information gathered in this investigation is evaluated and numerical model will be utilized in the research methodology. Also, this investigation will pursue the historical pattern of leading a quantitative research, which starts with structuring a research, collection of data following the hypothesis, followed by the using of descriptive or inferential statistics, thus it is classified as quantitative research.

Exploratory, descriptive and causal research are the three types of researches. For this investigation, descriptive research is used. The purpose of descriptive research is to portray the attributes of objects, individuals, groups, organizations and environments. The questions of who, what, when, and how are addressed. Descriptive research is used extensively in social science and business studies, where the researcher can directly research towards the specific issues from the part developed in experimental research. As the purpose of the research is to investigate the influence of board diversity on firm financial performance in this current state, descriptive statistic is reasonable and suitable to be applied and the outcomes acquired will be helpful in decision making process.

3.3 Data Collection Method

According to Sekaran and Bougie (2012), data collection is a crucial element in which the data gathered could make a major effect to the thoroughness and viability of the investigation. Data can be acquired from primary or secondary sources. Primary data is the information acquired first hand by the researcher, while secondary data is the information collected from existing sources. In this research, secondary data is used where annual reports are gathered and analysed in the research process.

Companies' annual reports can be easily accessed and downloaded from the website of Bursa Malaysia or the respective companies' website. The annual reports downloaded are from 2013 to 2017 to get the information needed on independent variables of the research. The year 2013 to 2017 is chosen for this study as to determine whether there is an effect after MCCG 2012 and MCCG 2017 have been introduced in which board diversity has been emphasized in these codes.

Besides, data such as ROA and Tobin's Q are extracted from Bloomberg database. In addition, journals and articles are studied through the Internet, Universiti Tunku Abdul Rahman's e-databases such as Emerald Management eJournals Collection, SAGE Journals and EBSCOhost as well as Google Scholar. Using secondary data sources is rather time consuming but cost saving in acquiring the information.

3.4 Sampling Design

3.4.1 Target Population and Sampling Frame

This investigation wishes to investigate the influence of board diversity towards financial performance among the public listed companies in Malaysia from 2013 to 2017. Thus, the population of this study are drawn from the companies listed on Bursa Malaysia. As at 20 February 2019, there are an aggregate of 799 companies listed on the Main Market of Bursa Malaysia. Therefore, the target population of this investigation is 799 companies.

Sampling frame refers to a list of items drawn from a sample. The sample is chosen from a full list of population elements. The 799 companies will also be the sampling frame for this research in which a sample will be drawn. The complete list of companies listed on Bursa Malaysia can be viewed through Bursa Malaysia website at http://www.bursamalaysia.com/market/listed-companies/list-of-companies/main-market/.

3.4.2 Sampling Element

Sampling element is a unit in a specific population. Each unit, either a person, a group, an organization or others will have the equal chances to be chosen and measured in the study. Since there is a short of time and budget limit, it is impracticable to examine the whole population of 799 public listed companies (Saunders, Lewis, & Thornhill, 2009). With respect to this, 50 pubic listed are picked for this investigation. These companies

selected are based on the Top 50 public listed companies by market capitalization, which are extracted from Star Newspaper on 18 February 2019.

3.4.3 Sampling Technique

Non-probability sampling is applied in this research. The samples in this research come together in such a process that disallow all participants in the population to have equal chances of being chosen (Etikan, Musa, & Alkassiim, 2016). Quota sampling, purposive sampling, snowball sampling and convenience sampling are some of the types of non-probability sampling method. Purposive sampling is used in this research.

According to Sekaran and Bougie (2012), purposive sampling collects data from a specific targeted group, rather than collecting data from those who are readily accessible. Purposive sampling is limited to specific kinds of individuals who can give the ideal data, either due to the fact that they are the main people who own it, or comply with certain criteria set by the researcher (Sekaran & Bougie, 2012).

In this study, purposive sampling is applied because there was a requirement to fulfil certain criteria in selecting the 50 companies. The sample companies are chosen according to their market capitalization ranks. Thus, the top 50 public listed companies are chosen as sample according to their market capitalization.

3.4.4 Sampling Size

A sample size of 50 public listed companies based on the Top 50 public listed companies by market capitalization are included in this study, from 2013 to 2017, arriving at 2500 observations.

The rationale behind to choose the Top 50 public listed companies by market capitalization is because these companies contribute towards the economy of Malaysia. This is in light of the fact that larger firms are more probably involved in complicated

dealings and transactions that need more diverse boards with an assortment of their experience, skill and knowledge (Zainal et al., 2013).

3.5 Research Instrument

The data from the annual reports of the respective public listed companies are obtained. The annual reports are downloaded from Bursa Malaysia or the companies' website. ROA and Tobin's Q are extracted from Bloomberg database. All the variables are then shifted to Statistical Package for Social Science (SPSS) Version 21 for descriptive analysis, as well as EViews Version 8 for the panel data analysis based on generalized least square (GLS). Similar method has also been applied in past studies (Hassan & Marimuthu, 2016; Yap, Chan, & Zainudin, 2017).

3.6 Construct Instrument

3.6.1 Origin of Construct

The origin of construct of this study is originated from the past researches. The tables below show the independent variables, dependent variables and control variables.

Table 3.1: Independent Variable Table

Independent Variable	Formula	Sources
Gender Diversity	Percentage of female directors on board	(Taghizadeh & Saremi, 2003; Hassan & Marimuthu, 2016; Yap, Chan, & Zainudin, 2017)

Age Diversity	"1" = Average age below 60 years old "0" = Average age 60 years old and above	(Abdullah & Ku Ismail, 2013; Hassan & Marimuthu, 2016)
Ethnic Diversity	"1" = 3 main ethnics group on board (Malay, Chinese, Indian) "0" = No 3 main ethnic group on board	(Abdullah & Ku Ismail, 2013)
Education Level	Percentage of directors with master degree or advanced level	(Graham & Harvey, 2002; Pukthuanthong-Le & Sundaramurthy, 2009; Adnan, Sabli, Hashim, & Paino, 2016)
Director's Tenure	Average tenure of directors	(Van Ness, Miesing, & Kang, 2010; Huang & Hilary, 2017)

Source: Developed for the research

Table 3.2: Dependent Variable Table

Dependent Variable	Formula	Sources
Return on Assets (ROA)	$\dfrac{\text{Net Income}}{\text{Total Assets}}$	(Marimuthu, 2008; Zainal, Zulkifli, & Saleh, 2013;

		Adnan et al., 2016)
Tobin's Q	$\dfrac{\text{Market Value of Equity} + \text{Book Value of Total Debts}}{\text{Book Value of Total Assets}}$	(Darmadi, 2011; Abdullah & Ku Ismail, 2013; Hassan & Marimuthu, 2016; Yap et al., 2017)

Source: Developed for the research

Table 3.3: Control Variable Table

Control Variable	Formula	Sources
Board Size	Total Numbers of Directors on Board	(Marimuthu, 2008; Ararat, Aksu, & Cetin, 2010; Zainal, Zulkifli, & Saleh, 2013; Hassan & Marimuthu, 2016
Company Size	Firm 's Total Assets	(Marimuthu, 2008; Darmadi, 2011; Lamers, 2016)

Source: Developed for the research

3.7 Control Variables

The independent and dependent variables can be influenced or clarified by other third parties, which are likewise called spuriousness. Thus, it is critical to incorporate and control for third variables or factors to determine whether they effect the variables of this model (Ercan, 2017). Board size and company size are the control variables in this research.

3.7.1 Board Size

Board size has been included as one of the control variables. It is measured as the total number of directors on board (Marimuthu, 2008; Ararat, Aksu, & Cetin, 2010; Zainal, Zulkifli, & Saleh, 2013; Hassan & Marimuthu, 2016). Board size is controlled as it is said that the smaller the board size, the higher the financial performance. This is supported by (Carter, Simkins, & Simpson, 2003; Darmadi, 2011; Hassan & Marimuthu, 2016).

3.7.2 Company Size

Company size is the most commonly used control variable in earlier studies on the association between board diversity and financial performance. Company size is measured as the firm's total assets (Marimuthu, 2008; Darmadi, 2011; Lamers, 2016). Company size is chosen as one of the control variables because larger firms generally have larger profits, greater competitive power and enjoy the advantage of economies of scale, thus a positive impact is predicted towards the firm financial performance (Darmadi, 2011; Frijling, 2016; Yap et al., 2017).

3.8 Data Analysis

3.8.1 Descriptive Analysis

Descriptive analysis lists out the mean and standard deviation for the independent, dependent and control variables in this study. For age diversity and ethnic diversity which involve using dummy variables, a frequency table is used to describe the number and percentage of the companies which have applied it. For others variables, the mean and standard deviation is shown. Descriptive analysis is run by SPSS.

3.8.2 Panel Data Analysis

Panel data is also called longitudinal data or cross-sectional time-series data (Park, 2011). Panel data gives more data information, greater variability, less collinearity among the variables, more degrees of opportunity and more efficient (Park, 2011). Panel data is systematic, its models are attractive and engaging since they furnish methods for managing heterogeneity and investigate the fixed and random effects in the longitudinal data (Park, 2011).

A panel data set is relied to deliver regression results based on the fixed effect or random effect. In this research, Hausman Test is used to test whether the fixed effect or random effect estimators are more relevant and significant in panel data. If p-value in Hausman Test is less than 0.05, fixed effect is used; if p-value is more than 0.05, random effect is used. The fixed and random effect model is proposed as below:

$$ROA_{it} = \beta 0_{it} + \beta 1(GENDER)_{it} + \beta 2(AGE)_{it} + \beta 3(ETHNICS)_{it} + \beta 4(EDUCATION)_{it} + \beta 5(TENURE)_{it} + \beta 6(BOARD\_SIZE)_{it} + \beta 7(COMPANY\_SIZE)_{it} + \varepsilon_{it}$$

$$TOBINQ_{it} = \beta 0_{it} + \beta 1(GENDER)_{it} + \beta 2(AGE)_{it} + \beta 3(ETHNICS)_{it} + \beta 4(EDUCATION)_{it} + \beta 5(TENURE)_{it} + \beta 6(BOARD\_SIZE)_{it} + \beta 7(COMPANY\_SIZE)_{it} + \varepsilon_{it}$$

where:

ROA is return on assets

TOBINQ is Tobin's Q

GENDER is gender diversity

AGE is age diversity

ETHNIC is ethnic diversity

EDUCATION is education level

TENURE is director's tenure

ε is the error term

CHAPTER 4

RESEARCH RESULTS

4.1 Introduction

Chapter 4 displays the outcomes of the study from SPSS and EViews. A descriptive analysis is discussed first followed by the panel data analysis. The last part of this chapter is the conclusion.

4.2 Descriptive Analysis

4.2.1 Descriptive Analysis for Dependent Variables

Table 4.1: Descriptive Analysis for ROA and Tobin's Q

Year	Sample	ROA		Tobin's Q	
		Mean	Standard Deviation	Mean	Standard Deviation
2013	50	0.0920	0.1146	3.1552	4.9984
2014	50	0.0931	0.1259	3.0336	4.6960
2015	50	0.0841	0.1257	2.4944	2.5294
2016	50	0.0838	0.0838	2.3524	2.1785

2017	50	0.0770	0.0955	2.5156	2.4281
Average	250	0.0860	0.1091	2.7102	3.3661

Source: Developed for the research

The table above summarized the mean and standard deviation for ROA and Tobin's Q for the years 2013 to 2017. The firm financial performance is measured by accounting return, ROA and investor's return, Tobin's Q. Generally, both ROA and Tobin's Q has been decreasing steadily over the five years period.

For ROA, its mean decreases from 9% to 7%, the highest mean is 9.31% on 2014 and the lowest mean is 7.70% on 2017. The average mean for ROA is 8.6%. The standard deviation of ROA also decreases from 11% to 9%. The highest standard deviation is 12.59% on 2014 and the lowest standard deviation is 8.38% on 2016. The average standard deviation over the five years period is 10.91%.

For Tobin's Q, its mean decreases from 3.1552 to 2.5156. The highest mean is 3.1552 and the lowest mean is 2.3524. The average mean for Tobin's Q is 2.7102. The standard deviation of Tobin's Q also decreases from 4.9984 to 2.4281. The highest standard deviation is 4.9984 and the lowest standard deviation is 2.1785. The average standard deviation is 3.3661.

4.2.2 Descriptive Analysis for Independent Variables

Table 4.2: Descriptive Analysis for Gender Diversity, Age Diversity, Ethnic Diversity, Education Level and Director's Tenure

Year	Sample	Gender Diversity		Age Diversity		Ethnic Diversity		Education Level		Director's Tenure	
		Mean	SD	Yes (%)	No (%)	Yes (%)	No (%)	Mean	SD	Mean	SD
2013	50	0.1266	0.1001	26 (52)	24 (48)	20 (40)	30 (60)	0.3586	0.1602	8.2232	5.7060
2014	50	0.1426	0.1029	27 (54)	23 (46)	21 (42)	29 (58)	0.3481	0.1539	8.4735	5.8681
2015	50	0.1519	0.1195	26 (52)	24 (48)	18 (36)	32 (64)	0.3472	0.1812	8.6009	5.8560
2016	50	0.1808	0.1267	18 (36)	32 (64)	17 (34)	33 (66)	0.3599	0.1849	8.7987	5.8035
2017	50	0.2177	0.1172	19 (38)	31 (62)	20 (40)	30 (60)	0.3743	0.1838	9.0740	5.7633
Average	250	0.1639	0.1133	23.2 (46.4)	26.8 (53.6)	19.2 (38.4)	30.8 (61.6)	0.3576	0.1728	8.6341	5.7994

Source: Developed for the research

According to the descriptive analysis of gender diversity, female directors on board experience an improvement over the years. The percentage of female directors on board is increasing gradually over the five years, from 12.66% in 2013 to 21.77% in 2017. The average percentage of female directors on board is 16.39%. For the standard deviation, it increases from 10.01% to 11.72% from 2013 to 2017, and the average standard deviation is 11.33%

For age diversity, more than 50% of the company has directors with an average age of below 60 years for 2013, 2014 and 2015. However, the percentage has reduced in 2016 and 2017 with 36% and 38%. The average percentage that the company has directors with an average age of below 60 years is 46.4%.

For ethnic diversity, the percentage of company which has three main ethnics on their board, which are Malay, Chinese and Indian, does not change significantly. There are 40% of the company which has three main ethnics on their boards on 2013 and 2017, while there are 42%, 36% and 34% respectively for 2014, 2015 and 2016. There is an average of 38.4% of company that has three main ethnics of directors on their board.

For the education level of directors, there are more than 30% of the companies whose directors have a master degree or advanced level education qualification. The average mean of companies that have directors with a master degree or advanced level is 35.76%. For standard deviation, it shows similar results with around 15% to 18%. The standard deviation for 2015 to 2018 has similar results with 18%. The average standard deviation for education level is 17.28%.

The descriptive statistics above also reports that the average director's tenure on board is around 8 years to 9 years, with an average of 8.6 years. The standard deviation shows similar results with about 5 years from year 2013 to 2017. The average standard deviation for director's tenure is 5.8 years.

4.2.3 Descriptive Analysis for Control Variables

Table 4.3: Descriptive Analysis for Company Size and Board Size

Year	Sample	Company Size		Board Size	
		Mean	SD	Mean	SD
2013	50	54612.33	108283.10	9.2800	2.1857
2014	50	60251.74	122048.30	9.3400	2.0860
2015	50	65248.55	131619.01	9.1600	2.0737
2016	50	68407.01	136916.98	9.2600	2.2571
2017	50	70946.76	142411.81	9.1200	2.1726
Average	250	63893.28	128255.84	9.2320	2.1550

Source: Developed for the research

According to the analysis above, the company size has been increasing gradually since 2013, from RM54612.33 million to RM70946.76 million. The average mean for company size is RM63893.28 million. The standard deviation for company size also increases gradually, from RM108283.10 million to RM142411.81 million. The average standard deviation is RM128255.84 million.

On the other hand, the mean of board size for the five years does not change significantly, with 9 members on the board. Thus, the average mean for board size is 9. The standard deviation also shows similar results for all the five years with the value of 2. The average standard deviation for the board size is also 2.

4.3 Panel Data Analysis

4.3.1 Random Effect Model for ROA

Table 4.4: Random Effect Model for ROA

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 03/25/19   Time: 20:11

Sample: 2013 2017

Periods included: 5

Cross-sections included: 50

Total panel (balanced) observations: 250

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GENDER	-0.064569	0.031543	-2.047029	**0.0417**
AGE	0.019600	0.007729	2.535871	**0.0118**
ETHNICS	-4.79E-05	0.008993	-0.005324	0.9958
EDUCATION	-0.032565	0.028612	-1.138168	0.2562
TENURE	-0.000140	0.001606	-0.086976	0.9308
BOARD_SIZE	-0.004563	0.002698	-1.691157	**0.0921**
COMPANY_SIZE	-1.23E-07	9.17E-08	-1.339078	0.1818
C	0.150278	0.035001	4.293523	0.0000

Effects Specification				
			S.D.	Rho
Cross-section random			0.103911	0.9263
Idiosyncratic random			0.029309	0.0737
Weighted Statistics				

R-squared	**0.068085**	Mean dependent var	0.010761
Adjusted R-squared	**0.041129**	S.D. dependent var	0.030188
S.E. of regression	0.029561	Sum squared resid	0.211471
F-statistic	**2.525763**	Durbin-Watson stat	1.196972
Prob(F-statistic)	0.015918		

Unweighted Statistics			
R-squared	0.118745	Mean dependent var	0.085983
Sum squared resid	2.893217	Durbin-Watson stat	0.087489

Source: Developed for the research.

Based on the results above, the equation is formed as below:

ROA = 0.150278 - 0.064569 (GENDER) + 0.019600 (AGE) - 4.79E-05 (ETHNICS) - 0.032565 (EDUCATION) - 0.000140 (TENURE) - 0.004563 (BOARD_SIZE) – 1-.23E-07 (COMPANY_SIZE) + 0.035001ε

The test statistics indicate that both gender diversity and age diversity are statistically significant at the level of 0.05. This indicates that for every 1% increase in the female directors on board, the firm performance in terms of ROA will drop by 6.4%, ceteris paribus. Besides, for every 1% increase in the age diversity, the ROA will increase by 1.96%, ceteris paribus. For board size which is the control variable, it is statistically significant at the level of 0.1. This shows that for every 1% increase in the board size, ROA will reduce by 0.46%.

The other three independent variables which are ethnics diversity, education level and director's tenure, are not statistically significant to explain ROA, ceteris paribus, as their probability values exceed 0.1. For company size, which is one of the control variables, is also not statistically significant to explain ROA, ceteris paribus. Moreover, there is negative relationship between gender diversity, ethnic diversity, education level, director's tenure, board size, company size and ROA. Only age diversity has a positive relationship with ROA.

The R-square for this fixed random model for ROA is 0.068085, indicating that the five independent variables and the two control variables could explain a 6.81% variation in the dependent variable. The adjusted R-square is 0.041129 and the F-statistic is 2.525763.

4.3.2 Hausman Test for ROA

Table 4.5: Hausman Test Result for ROA

Correlated Random Effects - Hausman Test
Equation: ROARANDOMEFFECT
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.176227	7	0.1311

Source: Developed for the research.

Hausman Test is used to decide either fixed effect model or random effect model is to be used for this research, thus the Hausman Test is done with the following hypothesis:

H_0: Fixed effect model

H_1: Random effect model

As shown in the table above, the Hausman Test result has shown a probability of 0.1311, which is more than alpha of 0.05, thus H_0 is rejected. Random effect model is more appropriate and relevant to explain ROA.

4.3.3 Random Effect Model for Tobin's Q

Table 4.6: Random Effect Model for Tobin's Q

Dependent Variable: TOBIN_S_Q
Method: Panel EGLS (Cross-section random effects)
Date: 03/25/19   Time: 20:17
Sample: 2013 2017
Periods included: 5
Cross-sections included: 50
Total panel (balanced) observations: 250
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GENDER	-1.219617	1.974225	-0.617770	0.5373
AGE	0.441430	0.495380	0.891094	0.3738
ETHNICS	1.466657	0.533441	2.749428	**0.0064**
EDUCATION	-1.773595	1.638054	-1.082746	0.2800
TENURE	-0.099246	0.069429	-1.429469	0.1542
BOARD_SIZE	-0.285814	0.142272	-2.008933	**0.0457**
COMPANY_SIZE	-4.71E-06	3.07E-06	-1.531266	0.1270
C	6.570419	1.740168	3.775738	0.0002

Effects Specification

			S.D.	Rho
Cross-section random			2.697765	0.6308
Idiosyncratic random			2.064001	0.3692

Weighted Statistics

R-squared	**0.068062**	Mean dependent var	0.877382
Adjusted R-squared	**0.041105**	S.D. dependent var	2.112754
S.E. of regression	2.068876	Sum squared resid	1035.820
F-statistic	**2.524852**	Durbin-Watson stat	0.802396
Prob(F-statistic)	0.015954		

Unweighted Statistics

R-squared	0.119759	Mean dependent var	2.710240

| Sum squared resid | 2786.359 | Durbin-Watson stat | 0.298288 |

Source: Developed for the research.

Based on the results above, the equation is formed as below:

TOBIN'S Q = 6.570419 - 1.219617 (GENDER) + 0.441430 (AGE) + 1.466657 (ETHNICS) - 1.773595 (EDUCATION) - 0.099246 (TENURE) - 0.285814 (BOARD_SIZE) - 4.71E-06 (COMPANY_SIZE) + 1.740168ε

The test statistics indicate that only ethnic diversity is statistically significant at the level of 0.01. This indicates that for every 1% increase in the ethnic diversity, the firm performance in terms of Tobin's Q will increase by 146.67%, ceteris paribus. Board size which is the control variable, is also statistically significant at the level of 0.05. This shows that for every 1% increase in the board size, Tobin's Q will reduce by 28.58%, ceteris paribus.

The other four independent variables which are gender diversity, age diversity, education level and director's tenure, are not statistically significant to explain Tobin's Q, ceteris paribus, as their probability values exceed 0.1. For company size, which is one of the control variables, is also not statistically significant to explain Tobin's Q, ceteris paribus. In addition, there is positive relationship between age diversity and ethnic diversity between Tobin's Q, while gender diversity, education level, director's tenure, board size and company size show a negative relationship with Tobin's Q.

The R-square for this fixed random model for ROA is 0.068062, indicating that the five independent variables and the two control variables could explain a 6.81% variation in the dependent variable. The adjusted R-square is 0.041105 and the F-statistic is 2.524852.

4.3.4 Hausman Test for Tobin's Q

Table 4.7: Hausman Test Result for Tobin's Q

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.144482	7	0.3200

Source: Developed for the research.

Hausman Test is used to decide either fixed effect model or random effect model is to be used for this research, thus the Hausman Test is done with the following hypothesis:

H_0: Fixed effect model

H_1: Random effect model

From the table above, the Hausman Test result showed a probability of 0.3200, which is more than alpha of 0.05, thus H_0 is rejected. Random effect model is more appropriate and relevant to explain Tobin's Q.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

The last chapter presents the findings of the research results. Limitations and recommendations of the study will also be presented for the reference of future researchers to take into consideration in their studies.

5.2 Hypotheses Testing

5.2.1 Summary of Significance Value

Table 5.1: Hypothesis Testing Summary for ROA and Tobin's Q Results

	ROA	Tobin's Q
	Overall 5 years	Overall 5 years
	Prob.	Prob.
Gender Diversity	0.0417**	0.5373
Age Diversity	0.0118**	0.3738
Ethnic Diversity	0.9958	0.0064***
Education level	0.2562	0.2800
Director's Tenure	0.9308	0.1542
Board Size	0.0921*	0.0457**
Company Size	0.1818	0.1270

| Constant | 0.0000 | 0.0002 |

***Correlation is significant at the 0.01 level

**Correlation is significant at the 0.05 level

*Correlation is significant at the 0.1 level

Source: Developed for this research

Table 5.2: Decision in selecting the tested model- Hausman Test

Model	The Hausman Specification Test
ROA	Random Effect Model
Tobin's Q	Random Effect Model

Source: Developed for this research

5.2.2 Summary of Hypothesis Tests

Table 5.3: Summary of the results

Hypothesis	Results
$H1_{1A}$: Gender diversity among the board of directors is positively and significantly related to ROA.	A (-ve)
$H1_{1B}$: Gender diversity among the board of directors is positively and significantly related to Tobin's Q.	R
$H1_{2A}$: Age diversity among the board of directors is positively and significantly related to ROA.	A (+ve)
$H1_{2B}$: Age diversity among the board of directors is positively and significantly related to Tobin's Q.	R
$H1_{3A}$: Ethnic diversity among the board of directors is positively and significantly related to ROA.	R
$H1_{3B}$: Ethnic diversity among the board of directors is positively and significantly related to Tobin's Q.	A (+ve)

H1$_{4A}$: Education level among the board of directors is positively and significantly related to ROA.	R
H1$_{4B}$: Education level among the board of directors is positively and significantly related to Tobin's Q.	R
H1$_{5A}$: Director's tenure is positively and significantly related to ROA.	R
H1$_{5B}$: Director's tenure is positively and significantly related to Tobin's Q.	R

A = Accept, R = Reject

Source: Developed for this research

Hypothesis 1

H1$_{1A}$: Gender diversity among the board of directors is positively and significantly related to ROA.

H1$_{1B}$: Gender diversity among the board of directors is positively and significantly related to Tobin's Q.

The panel data indicates that gender diversity is significant towards ROA, but it is negatively related to ROA. Thus, there is insufficient evidence to reject the null hypothesis H0$_{1A.}$ It is concluded that gender diversity among the board of directors is negatively and significantly affects ROA. This is consistent with the previous study (Darmadi, 2011; Letting et al., 2012; Abdullah & Ku Ismail, 2013; Diepen, 2015; Ilaboya and Ashafoke, 2017). Moreover, there is no significant evidence to reject the null hypothesis H0$_{1B.}$ Thus, it is said that gender diversity among the board of directors does not affect Tobin's Q. This result is in line with previous studies (Rose, 2007; Carter et al (2010); Hassan & Marimuthu, 2016; Kagzi & Guha, 2018).

Hypothesis 2

H1$_{2A}$: Age diversity among the board of directors is positively and significantly related to ROA.

H1$_{2B}$: Age diversity among the board of directors is positively and significantly related to Tobin's Q.

Results from panel data indicates that there is sufficient evidence to reject H0$_{2A}$. Thus, it can be concluded that age diversity among the board of directors is positively and significantly affects ROA. This indicates that if the average age of board of directors is below 60, it will lead to a higher ROA. This is consistent with the study (Ararat, Aksu, & Cetin, 2010; Darmadi, 2011; Letting, Machuki, & Aosa, 2012). However, there is no significant evidence to reject the null hypothesis H0$_{2B}$. Thus, it is said that age diversity among the board of directors does not affect Tobin's Q. This result is confirmed with studies (Abdullah & Ku Ismail, 2013; Diepen, 2015).

Hypothesis 3

H1$_{3A}$: Ethnic diversity among the board of directors is positively and significantly related to ROA.

H1$_{3B}$: Ethnic diversity among the board of directors is positively and significantly related to Tobin's Q.

Results from panel data shows that there is inconclusive evidence to reject the null hypothesis H0$_{3A}$. Hence, it is concluded that ethnic diversity among the board of directors does not affect ROA. This is consistent with the study (Marimuthu, 2008; Carter, Souza, Simkins, & Simpson, 2010; Hassan & Marimuthu, 2016; Hassan & Marimuthu, 2017; Ilaboya & Ashafoke, 2017). However, there is sufficient evidence to reject H0$_{3B}$. It is concluded that ethnic diversity among the board of directors has a positive and significant impact on Tobin's Q. This indicates that if the board has Malay,

Chinese and Indian director on board, it will lead to a higher Tobin's Q. This is in line with the study (Cheong & Sinnakkannu, 2014)**.**

Hypothesis 4

$H1_{4A}$: Education level among the board of directors is positively and significantly related to ROA.

$H1_{4B}$: Education level among the board of directors is positively and significantly related to Tobin's Q.

Based on the results from panel data, it shows that there is not enough evidence to reject the null hypothesis $H0_{4A}$ and $H0_{4B}$. Thus, it is concluded that education level among the board of directors does not significantly affect ROA and Tobin's Q. The findings are also supported by (Adnan et al., 2016).

Hypothesis 5

$H1_{5A}$: Director's tenure is positively and significantly related to ROA.

$H1_{5B}$: Director's tenure is positively and significantly related to Tobin's Q.

The findings from panel data shows that there is not enough evidence to reject the null hypothesis $H0_{5A}$ and $H0_{5B}$. Thus, it is concluded that director's tenure does not significantly affect ROA and Tobin's Q. The findings is consistent with previous studies (Diepen, 2015; Hassan & Marimuthu, 2017; Kagzi & Guha, 2018).

5.3 Discussion on Findings

The overall research presents the findings on the relationship between board diversity namely gender diversity, age diversity, ethnic diversity, educational level and director's tenure, and the financial performance of the Top 50 public listed companies by market

capitalization in Malaysia. Based on the findings, there are only two independent variables statistically affect the company's financial performance in terms of ROA, which are gender and age diversity. Apart from that, only ethnic diversity statistically affect the company's financial performance in terms of Tobin's Q. The findings would be discussed in detail in the next few paragraphs.

The first independent variable, which is gender diversity, is significant but negatively related to ROA, it is also not significant to explain Tobin's Q. Nevertheless, the descriptive statistics shows that the percentage of female directors is improving gradually over the five years which shows that the companies are slowly adopting the recommendation in the MCCG 2012. However, the findings indicate that the higher the percentage of female directors, the lesser the market return (ROA). This is consistent with the study of Abdullah and Ku Ismail (2013), where it interprets that the appointment of female directors to the board does not overall lead to a better financial performance as their appointment might be due to tokenism or lack of critical mass. The companies appoint female directors on board most probably just want to fulfill the firm's social responsibility. Other than that, it is said that appointing more female directors to the board could result in over-monitoring (Adam & Ferreira, 2008), where it slows down the speed of the board's decision making, which in turn leads to a lower firm performance. Moreover, the findings do not find there is any significant relationship with the investor return (Tobin's Q). One possible reason to explain this result is that there are very few female directors on the board, where small number of female directors on board does not have enough power to affect the firm decision making (Kagzi & Guha, 2018). This can be supported by the descriptive statistic in chapter 4 where there is only an average 16% of female on the board overall in five years, which is considered less as recommended by the MCCG 2012 and MCCG 2017.

Besides, the findings present that age diversity is significantly related to the market return (ROA), and it affects ROA positively. In other words, the directors below 60 years old leads to a better firm performance in terms of ROA. This might due to the reason that younger directors who are below 60 years old, most probably are more active and forward looking and they are risk takers. They are also more readily to defer

the present profits to the future (Abdullah & Ku Ismail, 2013). Besides, Darmadi (2011) implies that younger directors are bound to be motivated to face new challenges and strategic changes that will lead to higher market return. On the other hand, the investor return (Tobin's Q) is not significantly affected by the age of directors according to the findings, which is consistent with the study (Abdullah & Ku Ismail, 2013; Diepen, 2015). The market appears to be indifferent to the age diversity of the directors.

In addition, according to the findings, ethnic diversity has no significant effect on the market return (ROA) but it has a positive and significant effect on the investor return (Tobin's Q). This implies that a board which consists of 3 main ethnicities, which are Malay, Chinese and Indian, does not have an impact on ROA, but has an impact on Tobin's Q. The insignificance of ethnic diversity with ROA is consistent with the study (Marimuthu, 2008; Carter, Souza, Simkins, & Simpson, 2010; Hassan & Marimuthu, 2016; Ilaboya & Ashafoke, 2017). Apart from that, ethnic diversity is significantly and positively affect Tobin's Q, which is consistent with the study (Cheong & Sinnakkannu, 2014). This can be explained where firms with diverse cultures from different ethnicity generally react better to various situations and dynamic environment. The firms will benefit from its diverse pool of resources to solve problem faster and provide better solutions as promoted by resource dependence theory. Ethnic diversity develops links with the market, which can help to provide more information, innovation and creativity to the firm.

The findings also present that education level among the directors is statistically insignificant associated with the firm performance in ROA or Tobin's Q. This findings is consistent with the study done in Malaysia (Adnan et al., 2016), where it indicates that the education level of directors does not play an important factor in the firm's performance. The researchers reflect that education does not mainly help in the company's performance, it might because of other board attributes for example working experience and disciplinary attitude. The findings are inconsistent with studies done in foreign countries such as Istanbul (Ararat, Aksu, & Cetin, 2010), Nairobi (Letting et al., 2012), Indonesia (Darmadi, 2013) and India (Kagzi & Guha, 2018).

Last but not least, from the research findings, it is observed that the director's tenure is not significantly affect both ROA and Tobin's Q. This shows that the director's tenure on board is not significant to affect the firm's performance, which is consistent with the study of Hassan and Marimuthu (2017) and Kagzi and Guha (2018). Kagzi and Guha (2018) argues that director's tenure might not have any impact on the firm performance. Longer-tenured directors might be overclose to the stakeholders, thus they might give consent to avoid any dispute. Shorter-tenured directors might be too timid to voice their opinion. In this situation, groupthinking occurs where board members tend to follow instead of leading the decision making.

Control variables, which are the board size and the company size are also tested whether they have effects on the dependent variables, the financial performance. The effect found between board size and both financial performance is significant but negatively related. In other words, the smaller the board, the higher the ROA and Tobin's Q. The findings on the association between board size and ROA is consistent with the earlier study (Lu & Bao, 2018). Moreover, the findings on the association between board size and Tobin's Q is supported by the earlier researches (Carter, D'Souza, et al., 2010; Huang, 2013; Lu & Bao, 2018).

Company size is found to be insignificant to both ROA and Tobin's Q. The relationship between company size and ROA is consistent with the studies (Diepen, 2015), while the association between the company size and Tobin's Q is consistent with the studies (Erhardt, Werbel, & Shrader, 2003; Kagzi & Guha, 2018).

5.4 Limitation of Study

There are a few limitations or potential weaknesses in this study that must be addressed.

This research only covers the Top 50 public listed companies in Malaysia by market capitalization, thus it is valid only for Malaysian firms and the impact of board diversity could not be generalized in other countries that own different law and regulations as well as different culture. Besides, the study does not include the private limited

companies, and hence it neglect the impact of board diversity in these private limited companies.

In addition, the variables in this research has been expressed by different measures as given in the literature and hence different results and findings might be generated. For example, gender diversity can be measured by the percentage of female directors on board, which is used in this study, or using dummy variables, where 0 = no female director on board, 1 = has at least one female director on board. Another example is that, ethnic diversity might also be measured by the total non-Bumiputera, which refers to the non-Malay divided by total board members.

Also, this research only uses ROA and Tobin's Q as measurement for company financial performance. There are some other recommended measurements from various scholars such as return on equity (ROE), total shareholder return (TSR) and return on investment (ROI). This research also does not consider any external factors such as inflation, exchange rate and economic variation that might affect the firm's performance.

Lastly, this research is limited due to time restrictions. One semester or 14 weeks is not considered a lot of time for a research. Reviewing the literature requires more time so that the researcher could study more journals to have a more comprehensive understanding on the topic. Collection and analyzation of data also requires more time to ensure the data accuracy taken from the annual reports of the companies.

5.5 Recommendations for Future Research

Several extensions to this study are possible to make. Firstly, the impact of the board diversity on the financial performance of the top 50 public listed companies by market capitalization has been measured by ROA and Tobin's Q. It may be useful to reexamine the relationship using other measurements such as ROE, ROI, TSR, dividend yield and price-earnings ratio.

Besides, board diversity does not only comprise of gender, age, ethnic, education level and director's tenure. The future researcher may take into account of other variables of board diversity such as their skills, experiences, functional expertise, cultural background and nationality, as recommended in MCCG 2017. It is important for the firms to understand that a diverse board is impactful and powerful in bringing a better firm performance.

Furthermore, the future researcher may include more control variables in the study other than company size and board size. Some other examples of control variables are industry type, firm age, leverage, risks of the business and opportunity for growth, which have been used in other researches. These control variables may generate a different results and perhaps a better result on board diversity and firm performance.

The future researcher may also look into the external factors that affects the firm's performance such as inflation, exchange rate and economic variation. By adding the external factors, the researchers might generate a better result in presenting the relationship between board diversity and firm performance. Lastly, the future researcher shall have sufficient time to carry out the research to ensure a comprehensive of understanding in the topic.

5.6 Conclusion

This study reveals the association between board diversity and firm performance. Previous studies have showed mixed results. Most of the researches are done in emerging economies, thus the investigation between the relationship and board diversity and firm financial performance in Malaysia is very important. Top 50 public listed companies by market capitalization were selected for the investigation. Data on board diversity in terms of gender, age, ethnic, education level and director's tenure were collected, and the dependent variables selected were ROA and Tobin's Q. There were also control variables which are the company size and board size.

From the theory based, a significant and positive relationship between board diversity and firm performance was expected. Three theories were applied, which are the agency

theory, resource dependence theory and human capital theory. All these theories anticipate a positive relationship between board diversity and firm performance.

However, the results were not expected. There were only a few findings which is confirmed by the theories. It was presented that age diversity is significant and positively related to ROA. Apart from that, ethnic diversity is significant and positively related to Tobin's Q. These two findings could support its hypothesis, because the relationship found is were significant and positive, and the theory predicted the same relationship.

Contrary, even though gender diversity and firm performance is significantly affected, but it is a negatively related to ROA, and insignificant to Tobin's Q. Both education level and director's tenure have insignificant effect on the financial performance of firms. The hypothesis has rejected these results, as the relationships were either negative or insignificant, because a positive and significant relationship is predicted by the hypothesis. As for the control variable, board size shows a significant but negative relationship to both ROA and Tobin's Q, while company size does not have affect the firm financial performance.

Now the research question can be answered: *Does board diversity have an impact on the financial performance of public listed companies in Malaysia?* The answer is yes to age diversity and ROA, as well as ethnic diversity and Tobin's Q, but no for gender diversity, education level and director's tenure.

With the continuous encouragement from the government of Malaysia in promoting board diversity, board diversity is expected to be improved in the foreseeable future. Yet, this move needs supports from the firms and the government to work together to have a better board diversity in the firms. More researches in this field show be done to accompany the gradual improvement in board diversity. It is crucial to investigate the association between the effects of board diversity on the firm performance, and not only based on theories. Contribution in studying in board diversity and firm performance is greatly needed, especially for developing countries.

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APPENDIX A

THE SUMMARY OF BOARD DIVERSITY STUDIES IN MALAYSIAN AND FOREIGN CONTEXT

Name (Year)	Title	Variable/Test	Sample	Results
Abdullah & Ku Ismail (2013)	Gender, Ethnic and Age Diversity of the Boards of Large Malaysian Firms and Performance	DV: ROA, Tobin's Q IV: Gender, ethnic, age diversity CV: Board size, board independence, firm size Test: Multiple regression	100 non-financial firms listed on the Malaysian stock exchange (2007)	Gender diversity is significant and negatively related to Tobin's Q. Age is insignificant to Tobin's Q. Gender, age, ethnic diversity are significant to ROA, but only ethnic diversity and ROA is positively related.

		analysis		
Adnan, Sabli, Hashim, & Paino (2016)	The Impact of Educational Level of Board of Directors on Firms' Performance	DV: ROA, ROE IV: Education diversity Test: Multiple regression	99 and 97 samples for GLCs and non-GLCs (2007-2010)	Insignificant results for both GLC and non-GLCs
Ali, Ng, & Kulik (2014)	Board Age And Gender Diversity: A Test Of Competing Linear And Curvilinear Predictions	DV: ROA, employee productivity IV: Age, gender diversity CV: Firm size, firm age, organization type, industry type	288 large organizations listed on the Australian Securities Exchange (2011-2012)	Age diversity had a significant negative effect on ROA. Gender diversity did not have a significant effect on ROA.

		Test: Hierarchical multiple regression		
Ararat, Aksu, & Cetin (2010)	Impact Of Board Diversity On Boards' Monitoring Intensity And Firm Performance: Evidence From The Istanbul Stock Exchange	DV: ROI, ROA IV: Age, gender, nationality, education CV: Board size, firm size, leverage Test: OLS regressions	ISE-100 index firms (2002-2005)	Gender, age, nationality diversity positively affects DV. Education negatively affects DV.
Awaworyi Churchill, Valenzuela, & Sablah (2017)	Ethnic diversity and firm performance: Evidence from China's materials and industrial sectors	DV: Total revenue, sales, ROA, EBIT IV: Ethnic diversity	1079 Chinese firms in the materials and industrial sectors	Higher ethnic heterogeneity negatively impacts on firm financial performance in these sectors.

		CV: -		
		Test: OLS regressions		
Carter, Simkins, & Simpson (2003)	Corporate Governance, Board Diversity, and Firm Value	DV: Tobin's Q IV: Gender diversity CV: Board size, firm size, number of meetings annually, CEO duality, a dummy indicating whether directors receive stock compensation, insider ownership, and the	Sample is drawn from the Fortune 1000 firms	Significant positive relationships between the gender diversity and Tobin's Q

		percentage of insiders on the board, ROA Test: Ordinary least squares (OLS) regressions		
Carter, D'Souza, Simkins, & Simpson (2010)	The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance	DV: Tobin's Q, ROA IV: Gender, ethnic diversity CV: Firm size Test: Single ordinary least squares (OLS) regression, Three stage least	US firms in the S&P 500 index (1998-2002)	No significant relationship between the gender or ethnic diversity towards DVs.

		squares (3SLS) regression analysis		
Cheong & Sinnakkannu (2014)	Ethnic Diversity And Firm Financial Performance: Evidence From Malaysia	DV: Tobin's Q, ROE, ROA IV: Ethnic diversity CV: Firm size, level of investments Test: Ordinary least squares (OLS)	634 firms of seven sectors in Malaysia	Ethnic diversity has significant positive relationship with Tobin's Q. Ethnic diversity has significant positive relationship with ROA.
Darmadi (2011)	Board Diversity And Firm Performance: The Indonesian Evidence	DV: ROA, Tobin's Q	383 public firms listed on the IDX (2007)	Both ROA and Tobin's Q have significant negative associations with gender diversity.

		IV: Gender, nationality, age diversity		Nationality diversity is found to have no influence on firm performance.
		CV: Board size, firm size		Age diversity is positively related to ROA, and has significantly positive influence on Tobin's Q.
		Test: Cross-sectional regression analysis		
Darmadi (2013)	Board members' education and firm performance: evidence from a developing economy	DV: ROA, Tobin's Q IV: Education level CV: Firm size, family control	160 firms listed on the Indonesia Stock Exchange (IDX) (2007)	Directors holding degrees from prestigious domestic universities perform significantly better than those without such qualification.

		Test: Ordinary least squares (OLS) regressions		
Diepen (2015)	The effect of gender, age and nationality diversity on company performance – Evidence from the Netherlands	DV: ROA, ROE, Tobin's Q, TSR IV: Gender, age, nationality diversity CV: Firm size, board size, firm industry, capital expenditure, leverage, firm age and corporate structure Test: Multiple regression analysis	100 Dutch companies listed on Euronext Amsterdam	Age diversity positively whereas education diversity negatively influences firm performance. Gender diversity and tenure diversity do not significantly influence the firm performance.

Ercan (2017)	Value in Diversity? A Quantitative Examination of Board Diversity and Financial Performance of Publicly Listed Firms in Germany	DV: ROA, ROE, Tobin's Q IV: Gender, nationality, age diversity CV: Board size, firm size Test: Multivariate Regression Results	305 Germany firms (2014-2016)	Gender and age diversity are insignificant to ROA.
Erhardt, Werbel, & Shrader (2003)	Board of Director Diversity and Firm Financial Performance	DV: ROA, ROI IV: Ethnic, gender diversity	112 large public companies	Both IV are positively associated with both return on investment and return on assets

		CV: Board size, firm size Test: Hierarchical regression analysis		
Hassan & Marimuthu (2016)	Corporate Governance, Board Diversity, and Firm Value: Examining Large Companies Using Panel Data Approach	DV: ROA, ROE, Tobin's Q IV: Gender, ethnic, age diversity CV: Board size, firm size, firm age, financial leverage, business risk, growth opportunity	Large 60 top Malaysian non- financial companies (2009-2013)	Gender, ethnic, age diversity are not significant to ROA. Gender and ethnic diversity are not significant to Tobin's Q, but age diversity is significant and positive towards Tobin's Q.

		Test: Panel Data Generalized least square (GLS)		
Hassan & Marimuthu (2017)	Does Corporate Diversity Really Matter in the Plantation Sector? Empirical Evidence from A World Islamic Leading Country and Market Reaction	DV: Tobin's Q IV: Gender, ethnic, education, director's tenure CV: Firm size, firm age, financial leverage, business risk, growth opportunity Test: Pooled OLS	125 Malaysia listed companies from two sectors (plantations and energy) (2009-2013)	Gender diversity shows a positive and significant relationship with Tobin's Q Ethnic diversity is insignificant to Tobin's Q. Age diversity is positive and significant towards Tobin's Q. Director's tenure is insignificant towards Tobin's Q. Education has negative significant to Tobin's Q.

Ilaboya & Ashafoke (2017)	Board Diversity and Firm Performance in Nigeria	DV: ROA IV: Ethnic, nationality, gender diversity CV: Firm size, board size Test: Ordinary least square regression (OLS)	All the banks quoted on the Nigerian Stock Exchange (2010-2015)	A negative and insignificant relationship between ethnic diversity and ROA. Gender diversity exhibit a negative and significant relationship with firm performance.
Kagzi & Guha (2018)	Does Board Demographic Diversity Influence Firm Performance? Evidence From Indian-Knowledge	DV: Tobin's Q IV: Gender, age, education , tenure	Top 200 NSE listed firms in India (2010-2014)	Gender and director's tenure is insignificant to Tobin's Q. Age diversity is significantly and positively related to Tobin's Q, education diversity is significantly negatively related to Tobin's Q.

	Intensive Firms	CV: Firm size, firm age, R&D investment, leverage Test: GMM regression		
Krishnan & Park (2005)	A few good women—on top management teams	DV: ROA IV: Gender diversity CV: Firm size, turnover rate Test: Hierarchical regression analysis	A sample of 679 firms from the 1998 Fortune 1000 list	Positive relationship between gender diversity and ROA

Letting, Machuki, & Aosa (2012)	Board Diversity And Performance Of Companies Listed In Nairobi Stock Exchange	DV: ROA, ROE, dividend yield, price earnings IV: Age, gender, educational qualifications, study specialization, and board specialization CV: - Test: Ordinary Least Squares (OLS) regression	40 companies listed in the Nairobi Stock Exchange	The study reports positive effect for age of directors, educational qualifications and board members' study specialization while negative effect was reported for the women on board and board functional specialization
Marimuthu & Kolandaisamy (2009)	Ethnic and Gender Diversity in Boards of Directors and Their Relevance	DV: ROA, ROE	Top 100 Malaysian listed companies from the non-financial sector (2000-2006)	Ethnic diversity is significantly (positively) correlated with ROA.

		IV: Ethnic, gender diversity		Gender diversity did not have any impact on firm financial performance
	to Financial Performance of Malaysian Companies			
		CV: Board size, firm size, firm age		
		Test: OLS regressions		
Marimuthu (2008)	Ethnic Diversity on Boards of Directors and Its Implications on Firm Financial Performance	DV: ROA IV: Ethnic diversity CV: Board size, firm size	Top 100 non- financial companies listed on the Main Board of the Bursa Malaysia from 2000-2005	No significant impact found though there was a positive relationship between ethnic diversity and performance in the presence of the control variable.

		Test: Ordinary Least Squares, Weighted Least Square		
Rose (2007)	Does female board representation influence firm performance? The Danish evidence	DV: Tobin's Q IV: Gender diversity CV: Shareholders ownership, firm size, payment to the board Test: Cross-sectional regression	Danish firms listed on the Copenhagen Stock Exchange (1998–2001)	No significant link between firm performance as measured by Tobin's Q and gender diversity.
Taghizadeh & Saremi (2003)	Board of Directors and Firms Performance:	DV: ROA, ROE	150 Malaysia public listed companies (2008)	Gender diversity is insignificant to ROA.

		Evidence from Malaysian Public Listed Firm	IV: Board meeting, non-executive directors, gender diversity CV: Firm's asset, financial leverage, number of years listed on board Test: Regression analysis		
Van Ness, Miesing, & Kang (2010)	Board Of Director Composition And Financial Performance In A Sarbanes-Oxley World	DV: ROA, financial leverage, market price to book ratio, free cash flow to net income IV: Gender, age, director's tenure	S&P 500 index, 200 companies (2006-2007)	Tenure is positively related to ROA. Gender and age diversity do not have significant impact on all DVs.

		CV: Firm size, lagged financial performance, industry effect		
		Test: Ordinary least square (OLS) regression analysis		
Yap, Chan, & Zainudin (2017)	Gender Diversity And Firms' Financial Performance In Malaysia	DV: Tobin's Q IV: Gender diversity CV: Debt level, ROA, firm size Test: Panel Data Generalized least square (GLS)	FTSE Bursa Malaysia Top 100 Index (2009-2013	Positive and significant relationship between IV and DV

| Zainal, Zulkifli, & Saleh (2013) | Corporate Board Diversity in Malaysia: A Longitudinal Analysis of Gender and Nationality Diversity | DV: ROA

IV: Gender, nationality diversity

CV: -

Test: Mann-Whitney U test | 180 public listed companies in Malaysia (2005-2009) | Positive relationship between gender diversity and ROA |

DV = Dependent Variable

IV = Independent Variable

CV = Control Variable

APPENDIX B

LIST OF TOP 50 PUBLIC LISTED COMPANIES BY MARKET CAPITALIZATION AS AT 18 FEBRUARY 2019

1. AirAsia Group Berhad

2. AMBank

3. Astro Malaysia Holdings Berhad

4. Axiata Group Berhad

5. British American Tobacco Malaysia

6. BIMB Holdings Berhad

7. Batu Kawan Berhad

8. Carlsberg Brewery Malaysia Berhad

9. CIMB Group Holdings Bhd

10. Dialog Group Berhad

11. DiGi.com Berhad

12. F&N

13. Gamuda Berhad

14. Genting Malaysia Bhd

15. Genting Plantations Berhad

16. Genting Berhad

17. HapSeng Consolidated Berhad

18. Hartalega Holdings Berhad

19. Heineken Malaysia Berhad

20. Hong Leong Financial Group Bh

21. Hong Leong Bank

22. IHH Healthcare Berhad

23. IJM Corporation Bhd

24. IOICorp

25. KLCC Property Holdings Berhad

26. Kuala Lumpur Kepong Berhad

27. LPI Capital Berhad

28. Malaysia Airports Holdings Berhad

29. Malaysia Building Society Bhd

30. Maxis Berhad

31. Maybank

32. MISC Berhad

33. Nestle

34. PBBank

35. Petronas Dagangan Bhd

36. PetGas (Petronas Gas Bhd)

37. Petronas Chemical Group Bhd

38. Press Metal Aluminium Holdings Bhd

39. PPB Group Berhad

40. QL Resources Berhad

41. RHB Bank Berhad

42. SPSetia

43. Sunway Berhad

44. Telekom Malaysia

45. Tenaga Nasional Berhad

46. Top Glove

47. UMW Holdings

48. Wetsports Holdings Bhd

49. YTL Corporation Berhad

50. YTL Power International Bhd