A STUDY ON THE IMPLICATION OF BOARD CHARACTERISTICS ON THE PERFORMANCE OF TOP 100 MALAYSIAN PUBLIC LISTED COMPANIES BETWEEN 2014 TO 2018

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Abstract

Following several financial crises and apparent corporate governance failings in companies in past decades, there has been a renewed interest on the board attributes in the performance of firms. This paper examines the relationship between the board characteristics and its independence towards firm performance. This combined set of independent variables such as the size of the board, the proportion of women directors, age diversity, and board independence is used for theoretical and empirical modelling for firm performance. The hypotheses of this study are based on a sample of top 100 firms listed on Bursa Malaysia over five years from 2014 to 2018. The findings of the study show that a board with more female directors and independent directors were positively related to firm performance, whereas board size was negatively related to firm performance. On the contrary, the results show that board with younger directors have no impact on firm performance. Hence, there are mixed findings on the effect of board characteristics and firm performance. This study offers new conceptions to policymakers in strengthening corporate governance in Malaysia where diversity (gender) and independence is one of the areas that could enhance the effectiveness of the board. The study also provides implications to the company to relook into their gender diversity policy as well as thorough independent director selection and assessment.

Keywords: *Board size, Gender Diversity, Age Diversity, Independent Directors, ROA, ROE*

Introduction

As the businesses expand, firms start seeking more substantial capital infusions while spreading the risks of ownership by going public through initial public offerings (IPO). However, offering shares to the public has its disadvantages: higher expenses, the need to build investor relations, disclosure of company' operations and financial statements, the pressure to maintain the growth rate and IPO failure risks (Ghonyan, 2017). Last year (2019), the tech unicorn WeWork took centre stage as it pulled its IPO and faced the investors' brunt due to its questionable business model and corporate governance issues. The corporate governance red flags reported by media are poor executive judgement as there were no women on board, a powerful CEO and conflict of interests (Pisani, 2019)

Businesses are actively implementing transparent and high integrity standards to demonstrate a company's commitment to broader ethical values and corporate responsibility. Codes of ethic or codes of conduct delineate specific criteria that are practical, measurable and enforceable approach to addressing ethical issues in conducting business. Yet, a considerable number of problems such as accounting fraud, bribery and corruption persist due to some irresponsible corporate directors. Many big corporations engaged in instances of self-destruction that have dramatically failed by driven into bankruptcy or suffered huge losses. The past decades have been characterized by repeated financial crises, such as the 1997 Asian financial crisis and the sub-prime financial crisis of 2008. Corporate 'Watergates' in the United States such as Enron, WorldCom, Arthur Anderson and Lehman Brothers have shaken the foundations of trade and industry. In Europe, corporation such as Barings, Halifax, Siemens, and Volkswagen, have also suffered significant scandals. Massive tax evasion to siphon billion of dollars by corporations and political leaders were exposed in the Lux Leaks, Panama Paper and Paradise Papers (Plachta, 2019). Likewise, in Malaysia we are not immune to corporate

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shenanigans – Employees Provident Fund (EPF) approved RM500 million given to ill-ridden Perwaja steel, and the collapse of the company leaving an RM7 billion debt caused by weak internal control. (Ahmad & Taylor, 2009; Gomez *et al*., 2017). Even our former Prime Minister, Najib Razak was alleged to be involved in the 1MDB scandals and facing 25 criminal charges (Murudi & Ting, 2019; The Malay Mail, 2019). These episodes encapsulated many issues of accountability, probity, and transparency in corporate governance. While there are many other reasons contributing to the corporate failures, the board of directors shall adopt optimal contracting approach and arrangement can solve agency issues by monitoring the managers (Panda & Leepsa, 2017).

Over the years, numerous recommendations of boardroom reform have been proposed – (**A) Rightsizing the board**: a board size of less than ten allow efficient strategic decision making (Amazon Corporate Website , 2019; Apple Corporate Website, 2019; Lipton & Lorsch, 1992) and it performs better (Bathula, 2008; Mohamed Shawtari *et al*.,2017; Riaz, Khan, & Shaheen, 2017; Ujunwa, 2012; Zabri, Ahmad, & Wah, 2016). To have more diverse perspectives, some studies indicate that there is a positive relationship between board size and the performance of a firm (Badu & Appiah, 2017; International Finance Corporation, 2019; Kalsie & Shrivastav, 2016; Shukeri, Ong, & Shaari, 2012; Tulung & Ramdani, 2018) **(B) Women on board**: globally, women are underrepresented on corporate boards as well as in the C-Suites (Noland, Moran, & Kotschwar, 2016). Though the mandatory quota of female directors may pose the risks to companies to hire unqualified candidates or multiple board positions offered to a relatively small group of highly qualified women – there are studies to show that woman on board do have significant positive effects on firm performance in several countries. (Agyemang-Mintah & Schadewitz, 2019; Bathula, 2008; Campbell & Minguez-Vera, 2008; Johl, Johl, & Cooper , 2015) **(C) Embrace generational diversity**: despite the removal of maximum age of a director of 70 years old in the Companies Act 2016 (Company Commission Malaysia, 2016), Abdullah & Ku Ismail (2013) reported that the average age of directors is 58 years with the majority of directors falling within the 50-69 age band and supported by the Securities Commission CG report as most independent directors are between the age of 61 to 70 years. Malaysia's board generally lack in age diversity which may pose challenges to accelerate business in an age-diverse workplace and market. Age diversity in the boardroom has a significant positive relationship with the firm's performance, as reported by Kagzi & Guha (2018). On the other hand, Devi (2018) reported that the age variables of board directors does not affect the firm's value and Abdullah & Ku Ismail (2013) reported that the age diversity is negatively associated with Return on Asset (ROA). **(D) Towards stronger board independence**: independent directors play an important role in assuring the interest of all shareholders. Malaysia Code of Corporate Governance (MCCG) requires a company to have at least 50% independent directors sitting on the board. In August 2020, the Exchange announced to increase the current cooling-off period of two years to three years to ensure director independence (Bursa Malaysia , 2020). While the practitioners emphasized on the importance of board independence, some academic studies reported that board independence and firm performance does not positively influence each other (Rashid, 2018; Abdullah & Ku Ismail, 2013; Zabri, Ahmad, & Wah, 2016). On the contrary, Abdul Samad, Wan Yusoff, & Lasyoud (2018) reported that higher proportion of independent non-executive directors would have a positive effect on firm performance.

As such, the goal of this paper is to test this assertion by analyzing how the top 100 public listed companies' financial performance relates to the board size and diversity (age and gender) as well board independence.

Literature Review

Board members are ultimately responsible for ensuring that corporations create value for their stakeholders. "What makes a board effective to ensure sustainable business growth?" continues to be a popular and important topic in research, policymaking and business practices. The success of a

company could be related to the leadership of the board members or the diverse experience and background of the senior management. There is no one size fit all formula to be applied by a company to ensure the organizational success. As argued in this paper, the prime characteristics in a board such as the size, gender and age as well as board independence can be a practical and impactful application for academician and practitioners as these are the possible factors affecting a firm's performance.

Firm Performance (Dependent Variable)

Selvam *et al*., (2016) identified the determinants of firm performance and group them into two broad categories, namely (a) financial performance covering three variables: profitability performance, growth performance and market value performance and (b) strategic performance that includes six variables: employee satisfaction, customers" satisfaction, environmental performance, environmental audit performance, corporate governance performance and social performance. Many previous studies are ROA and ROE as firm performance measurement (Bathula, 2008;Matolcsy & Wright, 2011; Muller, 2014; Scafarto & Corte, 2017; Zabri, Ahmad, & Wah, 2016). Some are using market ratio and Tobin's Q ratio to measure the value of a company (Pucheta-Martinez & Garcia-Meca, 2018; Shah, Wahla, & Hussain, 2012). Though there are some arguable justifications on the accounting measures such as the ROA and ROE as these values are based on historical records and can be manipulated, it is no doubt that the ROA and ROE both are well-understood measures of the organization that measures a firm's profitability and efficiency as well as determining the income before tax expenses of its total shareholder's equity. In addition, it is popular among investors to use the ROA and ROE in making an investment decision.

Board Size (Independent Variable)

The OECD Corporate Governance Factbook (2019) discloses that there are some countries impose a limit on the maximum size for board. The Santiago Stock Exchange (SSE) in Chile sets a minimum at seven board members for large companies, while in Malaysia, there is no maximum limit on the number of board members as long there are at least two directors or 1/3 of the board of directors are holding the independent directorship. Lipton & Lorsch (1992) recommended the ideal board size shall be eight to nine members as a bigger group will tend to reduce the efficiency of board members in making a strategic decision. It is practically harder for a bigger group of board members to come together for board meetings, and more people will tend to have different opinions and views that possibly delay some urgent strategic decision. Hence, it could be a more active oversight role on the management with a smaller board. When a board increases its size, it would give a broader diversity and different perspectives to meet specific needs for a firm to make a strategic decision. With reference to Samuel (2013), a bigger board have higher management skills, and more effective in making strategic decisions. A smaller board may be easily manipulated by a powerful CEO and compromising the efficiency and independence of a jury. The relationship is still unclear as some studies reveal that the board size is negatively coefficient with the performance (Ujunwa, 2012; Mohamed Shawtari *et al.*, 2017while some argue that there is a positive and significant relationship between the board size and firm performance (Tulung & Ramdani, 2018; Kalsie & Shrivastav, 2016)

Board Gender Diversity (Independent Variable)

According to a report by the International Finance Corporation, a gender-balanced senior investment team can generate 10 per cent to 20 per cent higher returns as compared to fund managers that have a majority of male or female leaders. Despite the Securities Commission has set a target for the top 100 listed companies to have a third of women in the board position by 2020, and the participation level is only 23.68% (2018) and has marginal improvement at 24.82 (2019) (Securities Commission Malaysia, 2020). It is remarkable to note that there were two Malaysian companies, Digi.Com Berhad and Malaysia Airports, made it to the list of companies with a majority of female directors on the MSCI All Country World Index (ACWI) Index (Emelianova & Milhomem, 2019). OECD Principles (2015) recommended countries to consider implementing initiatives to enhance gender diversity on boards and

senior management to avoid groupthink and to bring a diversity of thought into the boardroom. Companies that headquartered in California are mandated to ensure there have at least two female directors on any board with five directors or more (Dicker, Goltser , & Kaneko, 2018). In the Malaysia context, we have move marginally from 13% (2017) to 17.47% (2019) for women on board among the listed firms (World Bank Group Global Knowledge and Research Hub , 2018; Securities Commission Malaysia, 2020).

Age Diversity (Independent Variable)

Having a board with different age groups brings another form of board diversity as people from different age groups would bring different life experiences and perspectives to corporate strategy setting and implementation. Most studies show that company directors are in their sixties, the retirement age in most countries. Securities Commission reported that independent directors in Malaysia are between the age of 61 to 70 years. According to Tonello (2019), the mean age of board directors is 63.4 for the S&P 500 and 62.5 for the Russell 3000.

While digital immigrants are now in the age band between 30-40 years old, the digital natives are in their mid-twenties (Helsper & Enyon,(2009). However, no director is younger than 30 in either the S&P 500 and Russell index mentioned earlier. While older directors are more experienced and wiser, they may not be a risk-taker to respond to the fast-paced business environment that is driven by digital and technology. Presumably, a younger board member is more digital savvy, could fill the skill gap in the boardroom by bringing in new skills and perspectives. As the pace of disruption continues to accelerate and redefine, how do companies drive growth with a boardroom that is aging? As board diversity continues to dominate many institutional investors' agendas, what is the game plan for the company to select and determine the right composition mix of directors?

Independent Director (Independent Variable)

Independent directors play a significant role by bringing an independent and diverse perspective to the firm and ensuring a robust corporate governance structure is in place. The issue of independent directors is addressed extensively in the corporate governance code. Firstly, the latest Malaysian Code of Corporate Governance 2017 emphasized the recommended number of independent directors on board, that at least half of the board comprised of independent directors. It is an even more stringent requirement for large companies that the board must have a majority of independent directors. These requirements are in the same aspiration in the United Kingdom and Australia. To avoid conflict of interest, Singapore, Australia and the United Kingdom has a stricter rule in appointing former officer to the board via their respective CG code. The cooling-off period for former executive officers is at least three years in Singapore and Australia, while the cooling-off period in the United Kingdom is even longer, at least five years (Monetary Authority of Singapore, 2018; ASX Corporate Governance Council, 2018; Financial Reporting Council, 2018). As such, the demand for independent directors has increased significantly not only in Malaysia but in other countries as well.

In the case of Enron, some opined that the company's outside directors of being negligent in their oversight function. The Securities Commission reaffirms that none of the non-executive directors can wriggle their way out of legal liability when the statute imposes a personal burden to all directors. (Securities Commission Malaysia, 2019). It is crucial also to make sure that these outside directors or independent directors are competent and substantial. Suzuki (2019) highlighted that the lack of outside directors' independence and their failure in the oversight function has partially caused the Olympus accounting scandal. On the other hand, having full access to timely and accurate information is vital for independent directors to monitor the management effectively. For the above-explained reasons, it is crucial to understand if the presence of more independent non-executive directors is important in enhancing the firm performance.

Hypothesis Development

The main component of this study consist of the corporate governance practices which are indicated by the independent variables comprising of board characteristics (board size, percentage of female directors, age diversity and board independence (percentage of INEDs) whereas the dependent variables firm performance was measured by using firm's Return on Assets (ROA) and firm's Return on Equity (ROE) (dependent variables).

The following are hypotheses developed to be tested in this study.
H1: There is a linear relationship between the board size and firm performance.
H2: There is a positive relationship between women on board and firm performance
H3: Firm with younger board members will have better firm performance.
H4: A higher proportion of independent non-executive directors has a positive impact on firm performance.

H1: There is a linear relationship between the board size and firm performance.
Evidence from previous studies undertaken in the last decades indicates there is a relationship between the board size and firm performance. Some studies suggest that there is a positive relationship between board size and firm performance (Badu & Appiah, 2017;International Finance Corporation, 2019; Kalsie & Shrivastav, 2016; Shukeri, Ong, & Shaari, 2012; Tulung & Ramdani, 2018). On the other hand, some researchers argued that there is the negative relationship between these the board size and performance, indicating that the smaller board is performing better (Bathula, 2008; Mohamed Shawtari *et al*., 2017; Riaz, Khan, & Shaheen, 2017; Ujunwa, 2012; Zabri, Ahmad, & Wah, 2016).

H2: There is a positive relationship between women on board and firm performance
According to a recent global survey on nearly 22,000 firms, 60 per cent of these firms have no female board members and over half of the firms do not have females in the C-Suite (Noland *et al*., 2016). Some scholars found that women on board have a significant positive effect on firm performance in the United Kingdom, Spain, and Malaysia (Agyemang-Mintah & Schadewitz, 2019; Bathula, 2008; Campbell & Minguez-Vera,2008; Johl *et al*., 2015). On the other hand, these studies reveal that there is no relationship between gender of the board members and firm performance (Marimuthu & Kolandaisamy, 2009; Shukeri, Ong, & Shaari, 2012; Yap, Chan, & Zainuddin , 2017). There is growing interest from regulators as well as international organizations to meet the demand of a more gender-diverse representation in the senior management as well as the board composition

H3: Firm with younger board members will have better firm performance
Empirical results from the studies done by (Munoz-Torres, Ferrero-Ferrero, & Fernandez-Izquierdo, 2015; Fernandez-Temprano & Tejerina-Gaite,2020) show that age diversity as variety positively impacts on corporate performance, However, another study by Abdullah & Ku Ismail (2013) reveals that age diversity is negatively associated with the ROA of Malaysia firms. The age variable of board members has no impact on the firm values among Forbes Asia's best big public companies used in the study by Devi (2018).

H4: A higher proportion of independent non-executive directors has a positive impact on firm performance
A study by Mamun, Noor, & Musa (2016) found that board independence has negative relation associated with ROA and ROE of Bangladeshi and Malaysian firms. However, board independence is positively related to firm performance for Singapore companies. Similarly, the study done by Abdullah & Ku Ismail (2015) also indicated that board independence is not associated with the performance measures. This literature suggests conflicting views about the impact of board independence on firm performance.

Research Methodology

Research Objectives

The main objective - is to understand the contribution of board size, board diversity (gender and age diversity) and board independence in order to examine the impact of these characteristics on the performance of the listed companies.

The specific research objectives therefore are:-

i. To analyse the effect of board size on the firm performance;
ii. To test the impact of board diversity (gender and age factors) on the firm performance;
iii. To examine the effectiveness of board independence on the firm performance

Data and Sample

This study is limited to the Top 100 public listed companies in reference to the latest FTSE Bursa Malaysia Top 100 Index, excluding financial services firms dated covering the period from 2014 to 2018. Companies with insufficient data were eliminated and not be replaced in order to sustain the originality of data sampling. It was found that there were only 93 companies suitable as samples in this study as these companies were filing their initial public offerings between 2014 to 2018. These are the abovementioned companies: Sunway Construction Group Berhad, Leong Hup International Bhd, Serba Dinamik, Lotte Chemical Titan Hld Bhd, Sime Darby Property, Sime Darby Plantation and Malakoff Corp Bhd.

Operationalization of Variables

Table 1 summarizes on the operationalization of the dependent variables (ROA and ROE) and independent variables (board size (BS), gender diversity (WOB), age diversity (AgeD) and board independence (BI)

Table 1 : Summary of operationalization of variables

No	***Variable***	***Operationalization of Variables***	***Source***
1	Firm Performance	**ROA**: Ratio of Earning before Tax (EBIT)/Total Assets **ROE**: Ratio of EBIT/Total Equity	Bursa Knowledge Center and Audited financial report
2	Board Size (BS)	Number of directors on the board	Annual report
3	Gender Diversity (Woman on board, WOB)	Number of men and women present on the board	Annual report
4	Age diversity (AgeD)	Individual director's age, the average age of board. 1 (stale) = 60 and above 0 (non-stale) = 50 and below	Annual report and CG Statement
5	Board Independence (BI)	Percentage of INEDs	Annual report

Data Analysis

Statistical Package for Social Science (SPSS) was used to assess and analyze the data collected to examine the relationship between board size, gender diversity and firm performance. Descriptive statistics will be used to gain an understanding on the characteristics of the firms' performance and board structure in term of its board size and gender diversity. The correlation analysis will be used to measure how significant each independent variable: the board size, the board diversity, and board independence on the firms' performance in terms of ROA and ROE.

Significance of the Study

Previous studies mainly focus on the relationship between board size, gender diversity, board independence and firm performance and with limited research in Malaysia, focusing on the age diversity among the board of directors. Therefore, this study will serve as a foundation for policymakers as well as companies to consider appropriate principles while developing corporate governance policy at the regulatory and firm-level whereby addressing the challenges by external stakeholders such as investors and customers who now demand open, transparent and responsible management in upholding the corporate governance principle. The research will also explore how effective the board is in terms of board composition based on the mix of gender, skills experience and knowledge of the board, in the context of developing and delivering the financial performance. This study may also help prevent any corporate failures using public funds and investor may utilise this model to assess the financial health of companies, so that sound decisions can be made to protect their commercial interest.

Results and Discussion

Descriptive Analysis

Table 2 presents the descriptive analysis of the research variables in the study. All the independent variables return on assets and return on equity has been winsorized at 2.5% on upper and lower ends. With reference to the results, the mean for all variables range between 0.08 to 59.25, and the standard deviation falls within the range of 0.07 to 4.09. The mean value of return on equity (ROE) is at 18%, which is much higher than the return on asset (ROA)'s average at 8%. These results signified the positive performance of the top listed Malaysia firms in between FY2014 to FY2018. The standard deviation for ROA and ROE are 8% and 24% respectively. A significant variation in return is observed that due to some sample firms are generating returns and profitable while some are suffering great financial losses.

Board size & gender diversity: The average board size for this study is about nine members, ranging from a minimum of four directors to a maximum of fourteen directors. A total of 3,982 board seats are available in between FY2014 to FY2018. Out of the 3,982 board seats, only 637 board seats (16%) are occupied by women. It is way lower than the 30% target set by the Securities Commission that applicable to the large companies (Companies on the FTSE Bursa Malaysia Top 100 Index; Companies with a market capitalization of RM2 billion).

Table 2 : Descriptive statistics of variables

Variable	Mean	Std. Deviation	Minimum	Maximum
ROA: Return on Assets	0.08	0.08	-0.04	0.32
ROE: Return on Equity	0.18	0.24	-0.07	1.13
BS: Board Size	8.56	1.86	4.00	14.00
WOB: Women on Board	0.16	0.12	0.00	0.60
AgeD: Age Diversity[3]	59.25	4.09	43	71
LnAgeD: Nature Log of Age Diversity	4.08	0.07	3.77	4.26
BI: Board Independence	0.48	0.13	0.14	0.90

Variables (N = 465)

Age: The sample firms have an average age diversity for directors at 59-year-old. Concerning on board composition, Higgs Reviews criticized the membership of boards in the British as "pale, male and stale", i.e. white man in late middle (Higgs, 2003). Dividing the directors' age into 'stale' or 'non-stale' group, 58.5% of the firms have directors whose average age is more than 60 years of age (i.e. 'stale'), while the remaining 41.5% of the directors are less than 60 years of age (i.e. 'non-stale') (Refer to table 3). While the calls for greater boardroom diversity encompassing considerations on gender and age – are on the rise in the recent years, yet the board composition remains similar now and then, that men still occupying the majority of seats in the boardroom at their retirement age.

Table 3 : Age diversity

Age Group	Percentage
59 & below (0)	41.5%
Above 60 (1)	58.5%
Total	100.0

Board Independence: Despite the majority of the sample firms adhering to the listing requirement for maintaining one-third of the board comprising independent directors, the study reveals that the minimum board independence was recorded at 14%. These independent and non-executive directors (INEDs) are expected to have high ethical standards with the ability to challenge and act objectively on all board members. A low proportion of INEDs is possibly unable to meet the demand for INEDs on board committees as these committees: Nominating Committees, Audit Committees and Remuneration Committees that require majority directors and chaired by INEDs or non-executive director. Whilst it is challenging to define a perfect number of independent directors, a board with majority independent directors is generally considered as best practice (CFA Institute Centre for Financial Market, 2010)

Normality Test

T-test and ANOVA (Analysis of Variance) are both assuming that a variable of interest follows a normal probability distribution. The variable may be normally distributed if skewness and kurtosis are near zero and three. So (1987) and Isa (1997) observed that many financial ratios are skewed and non-normally distributed in the United States and Malaysia. The causes to the skewness and non-normality of these cross-sectional financial ratios were due to the outliers. In addition, So (1987) further highlighted that the distribution of many financial ratios are still non-normally and asymmetrically distributed after the outliers are removed. Therefore, to control the effect of extreme values of these financial ratios, both the ROA and ROE are winsorized by 2.5% at the top and 2.5% at the bottom.

[3] This is referred to the average age diversity

Table 4 depicts that these variables (BS, WOB, AgeD, BI and AD) are normally distributed after data winsorization.

Table 4 : Normality test

Variable	Skewness	Kurtosis
BS: Board Size	0.341	-0.240
WOB: Women on Board	0.549	0.123
LnAgeD: Age Diveristy	-0.405	0.766
BI: Board Independence	0.213	-0.223
ROA: Return on Assets	1.507	2.425
ROE: Return on Equity	2.796	7.706

Pearson Correlation Test

To determine if there is a relationship between two different variables, the Pearson Correlation Test was adopted to determine the correlation coefficient (r). The correlation *r* value comes with both a magnitude and a positive or negative direction. Ranging from -1 to 0 to +1, these values are absolute and non-dimensional with no units involved – the closer the r values to ±, the stronger and more linear relationship between the two variables.

A positive sign means an increase in the first variable would correspond to the rise in the second variable, in contrast, a negative sign means an inverse relationship whereby the first variable increases will lead to a decrease of the second variable. (Taylor, 1990). Table 5 presents the correlation between the variables. The result demonstrates that board size (BS) is negatively and significantly correlated with the return on asset (ROA) and return on equity (ROE) reported at $r(465)= -.2241$, $p<.01$ and $r(465)= -.190$, $p<.01$ This mean that the smaller the board size, the higher the ROA and ROE. On the other hand, the association between gender diversity and ROE is positively and significantly correlated, $r(465)=.176$, $p<.01$. These results suggest that firms with women on the board are contributing higher ROE to the company. A significant and negative relationship is observed between age diversity (AD) and ROA, $r(465)=-.102$, $p<.05$. These companies are getting higher ROA when they have older board members. In addition, there are several correlation relationships among the independent variables. (1) The board size is negatively correlated with board independence. A smaller board will tend to have more independent and non-executive directors to meet the board committee requirement. (2) An older board negatively corresponds to the ratio of women on board. That means fewer women will be appointed to an older board. (3) A younger board is positively associates with board independence, that is, independent directors are more welcomed in a younger board. In summary, the size of the board (BS), women on board (WOB) and age diversity (LnAgeD) do correlate with the ROA and ROE of a firm.

Table 5 : Pearson correlation test

Variable	ROA	ROE	BS	WOB	LnAgeD	BI
ROA	1					
ROE	**.824****	1				
BS	**-.241****	**-.190****	1			
WOB	.075	**.176****	.077	1		
LnAgeD	**-.102***	-.083	.063	**-.135****	1	
BI	-.057	-.015	**-.200****	-.015	**-.202****	1

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

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

Multicollinearity Test

Dohoo *et al*. (1996) suggests that multicollinearity is almost certain to be a problem when the correlation coefficients over 0.9. Refer to Table 5 in the earlier section, none of the variables found to be more than 0.9 correlation coefficients. In order to test if two or more variables are similar in nature, a multicollinearity test using the Variance Inflation Factor (VIF) to detect the seriousness of multicollinearity is required. The VIF values for all variables shall be below the critical value of 10 as suggested by Pawlicz & Napierala (2017). Table 6 shows that the multicollinearity test conducted on all the independent variables have a VIF of less than 10. The results indicate no significant multicollinearity problem among the variables. As such, the regression analysis to estimate models that consist of all predictors discussed earlier can proceed.

Table 6 : Multicollinearity test

Variables	Tolerance	VIF
ROA	0.771	1.296
ROE	0.818	1.223
BS	0.861	1.161
WOB	0.938	1.066
AgeD	0.925	1.081
BI	0.902	1.109

Regression Analysis

Table 7 presents the results of coefficient estimates of the dependent variables with their p values and t-statistics, that were interpreted along the four hypotheses formulated in the study. Two regression equations were used in this study - the first is using ROA as the dependent variable, and the latter is using ROE as the dependent variable. The results of the multiple regression summarized above reveals the R^2 of ROA is 8.1 % and ROE is 7.7%. There is very low variation of dependent variables (ROA and ROE) that can be explained by these independent variables – board size (BS), women on board (WOB), age diversity (AgeD) and board independence (BI). However, as there are no hard and fast rules on the acceptable minimum total variance explained for an endogenous variable, a lower R^2 value shall not be the factor to be considered before accepting or rejecting the regression fit (Bovee, 2004). Furthermore, Fonticella (1998) also highlighted that when the R^2 is not higher than some arbitrary benchmarks, the data should not be rejected. The current study is consistent with the research done by Ng et al., (2016) and Mohd Razali, Abdul Aziz, & Lunyai (2018)) where the R square for both ROA and ROE are similarly recorded a lower value. Additionally, the F statistics show a substantial value and results have significant differences, and this supports the overall fitness of models for both ROA and ROE in this study.

Table 7 : Linear regression analysis

			ROA			ROE		
		Expected Signs	coefficient	t-statistics	p-values	coefficient	t-statistics	p-values
			0.432	2.118	0.035	0.867	1.363	0.173
Independent Variables	BS	+ / -	-0.011	-5.731	0.000*	-0.027	-4.597	0.000*
	WOB	+	0.055	1.923	0.055	0.369	4.120	0.000*
	AgeD	+	-0.059	-1.163	0.245	-0.116	-0.735	0.463
	BI	+	-0.059	-2.084	0.038*	-0.090	-1.026	0.305
	Constant		0.432			0.867		
	R Square		0.081			0.077		
	Adjusted R Square		0.073			0.069		
	F		10.180			9.580		
	Sig.		0.000			0.000		

Notes: * p<.01 and **p<.05

Hypothesis 1 (H1) predicts that board size has a linear relationship with firm performance. The results support for H1 (BS) and provide evidence that board size is significantly associated with ROA and ROE. The results show that board size is negatively and significantly related to firm performance, suggesting that a smaller board shows better performance as compared to a larger board. These findings support the explanations from agency theory that a smaller board is vital to allow better management, monitoring and control functions that generate better financial results (Orozco & Vargas, 2018). The study also shows that a smaller board can contribute to the oversight of the management, favouring a better firm performance and therefore reducing agency costs. Nevertheless, a smaller board is in dire need for a majority of independent directors to avoid deliberations and decision-making from being controlled by a selective group of individuals such as family members or controlling shareholders. Also, with a smaller board, it is more challenging to rotate members in terms of remuneration and nominating members to the committee.

H2 anticipates that women on board are positively associated with firm performance. The findings of this study suggest that the appointment of women to the board do lead to better firm performance, in terms of return on equity (ROE). However, women on board found no support to improve the return on assets that is consistent with research by Xie *et al*., (2020) but it contradicts with research done by Abdullah and Ku Ismail (2013). While the number of women directors has increased, the study shows that there are many companies that still do not have any women on their boards (Table 2). As noted in Table 5, it is worthy of acknowledging that the appointment of women to the board is associated negatively with older board members. Part of the reason for the small number of female directors present among the older board is due to 'the old boys' club' that preventing women from getting into the boardroom. A far wider and deeper talent pool is definitely to include women, which is the tipping point concerning board gender diversity.

Age diversity (AgeD), on the other hand, is statistically insignificant to firm performance. The findings found no support for H3 (AgeD) and evident that younger board do not equate to stronger company performance. It can be said that the average age of directors does not give any effect to the firm performance, and it is consistent with the research done by Devi (2018). In part, the explanation of the findings may be the experience and wisdom that come with age which makes it more critical to company performance. The result also further supports Featherstone's opinion on the prevailing trends that younger directors are needed on boards is relying on generalisation and stereotypes as the link between board age and firm performance is insubstantial due to many other variables that drive organisational returns (Featherstone, 2018).

The results confirm hypothesis 4 that firms with more independent non-executive directors would have a positive effect on firm performance, in terms of ROA. This finding confirms the earlier findings for Malaysia by Abdul Samad, Wan Yusoff, & Lasyoud (2018), but contradicts the findings of Abdullah and Ku Ismail (2013) and Zabri et al. (2016). It can be best explained in this study that increasing independent non-executive directors (INED) have significant effects on the ROA but not ROE. Maintaining board independence in the boardroom is one of the practices recommended in the MCCG 2017, in particular Practice 4. As most of the firms are complying with MCCG's recommendation, the samples are based on top-performing firms in the market, hence the regression shows significant results to the ROA.

Here shows the empirical model used in this study. The dependent variable is the firm performance measures by returns on assets (ROA) and returns on equity (ROE). The four independent variables comprise of board size (BS), women on board (WOB), age diversity (AgeD) and board independence (BI). As all the hypotheses are empirically tested, therefore the firm performance can be predicted by the formula below:

$$FPerf = \beta\alpha + \beta 1BS + \beta 2WOB + \beta 3LnAgeD + \beta 4BI + \varepsilon t$$

$$FPerf\ (ROA) = 0.432 - 0.011BS + 0.055WOB - 0.059AgeD - 0.059BI + \varepsilon t$$

$$FPerf\ (ROE) = 0.867 - 0.027BS + 0.369WOB - 0.116AgeD - 0.090BI + \varepsilon t$$

A summary to present the test results against hypotheses are as below:

No	Hypothesis	Results
1	H1: There is a linear relationship between board size and firm performance.	Accepted
2	H2: There is a positive relationship between women on board and firm performance	Accepted
3	H3: Firm with younger board members will have better firm performance	Rejected
4	H4:. The proportion of independent non-executive directors has a positive impact on firm performance.	Accepted

Conclusions

This study aims to explain the relationship between the board's characteristics and firm performance. Most recently, there is growing attention in both academic and regulatory spheres on board characteristics that might be contributing to the effectiveness of the boards' decision-making process and its outcome. (Bursa Malaysia (2017), Fernandez-Temprano & Tejerina-Gaite (2020), Securities Commission Malaysia (2019). Overall, this study proves that board characteristics such as the size of the board, , women on board and board independence in the top 100 Malaysian listed companies between 2014 to 2018 are significantly related to ROE and ROA. However, the age diversity are not significantly associated with the ROE and ROA. Based on the empirical examination of the hypotheses, the relevant findings to research questions posed earlier is summarized as below:

<u>Research question 1 – Does the board size influence the performance of the top 100 Malaysian listed companies?</u>

What is the right size of board that would result in better distribution of responsibilities among the board members that lead to effective board decisions and better firm performance? The current study found that the size of boards is negatively associated with firm performance, in ROA and ROE. While the average board size for this study is around nine members, the research suggests that a smaller board has more considerable influence on firm performance. When compared with previous empirical studies,

this study's results support the findings of Alqatan, Chbib, & Hussainey (2019), Bathula (2008), Mohamed Shawtari *et al*. (2017), Riaz *et al*. (2017), Sheikh Hassan *et al*. (2017), Ujunwa (2012), and Zabri et al. (2016). On the other hand, Muth & Donaldson(1998) highlights that there is no inherent conflict of interest between the shareholders and management within the stewardship theory. Hence, a smaller board promotes enlarged participation and social cohesion, and a bigger board impede the board's ability to achieve consensus on certain strategic and essential decisions. Recent studies highlight specific challenges faced by a bigger board. Min & Chizema (2015) caution that as the board becomes larger, there will be likely more free-riding behaviour occurs in the boardroom that could result in poor decision-making. Research by Ghasemi & Ab Razak (2020) reveals that a larger board also leads to higher executives' remuneration. A large board may contribute to higher operational expenses, and it is less effective at controlling management spending, as shown in research by Nguyen *et al*. (2015). These previous researches support the current findings why a smaller board are more effective.

Research question 2 – Does the presence of woman directors on the top 100 Malaysian listed companies improve the firm performance?

The percentage of women board members has attracted growing attention in recent years – especially in the regulators' and investors' perspectives. The MCCG 2017, practice 4.5 requires companies to disclose their policies for appointing more women to the board with clear targets and actionable measures. And yet, this practice 4.5 has been recorded as one of the highest levels of departures in 2019 CG Monitor Report. Does board diversity such as gender, age and ethnicity truly dominate institutional investors' agenda? While the Malaysian Code for Institutional Investors 2014 (Code) outlines corporate governance and sustainability considerations into investment decision making process, the reception of British style stewardship concepts is only skin-deep in the Asia region as reported by Goto, Koh, & Puchniak (2019). Annuar (2020) reveals that corporate governance factors such as board composition, directors' remuneration and nomination policy are reviewed simplistically by the institutional investors as compared to the extensive qualitative evaluation of the financial criterion and corporate strategy analysis. Furthermore, these institutional investors opined that the responsibility of ensuring board composition, and directors' remuneration and nomination are not their job but the regulator's. It is evident that there is a mismatch between the regulators' expectations and the institutional investors' actual interpretation of their role in governing the investee companies.

Although the study shows that the appointment of female directors result in higher firm financial performance (ROE), female directorship is only accounted for 16% between 2014 to 2018. One of the possible reasons is: companies are prioritizing economic performance to meet the investors' expectations, and thus this may result in slow progress on the gender diversity agenda in the boardroom. The improvement in gender diversity has been relatively more pronounced the recent Corporate Governance Monitor 2019 reveals that there are 23.68% of board positions filled by female directors on the top 100 listed issuers (Securities Commission Malaysia, 2019). More efforts needed to achieve 30% target of women on companies' board as the common belief is that there are not enough talented women to be appointed. (Spencer Stuart and Women Corporate Directors, 2016). It is essential to increase the levels of diversity among the senior positions to develop a more diverse directors' talent pipeline. The deficient number of female directors (16%) in this study is matching with the population of female CEOs in Malaysian listed companies. Across the listed companies, female CEO is an absolute minority, occupying only 0.037 per cent of CEO position between 2012 to 2016 (Altarawneh, Shafie, & Ishak, 2020). Ku Ismail *et al*., (2017) highlight hat networking plays a crucial function for women director candidates in reaching the directorship position – as "whom you know" matters the most in order to be recruited to a board. The current study shows that gender diversity in the boardroom is linked to better ROE, going forward companies and regulators shall consider develop relevant policies to get more women into the C-suite and to keeping them in the directorship talent pipeline.

Research question 3 – Would younger board members sitting on board improve firm performance?

This study indicates that age diversity has no significant impacts on corporate performance, and it is consistent with the findings of Nguyen, *et al.* (2017). However, the research is in contradicts with Jonson *et al.* (2020) and Abdullah & Ku Ismail (2013) that older boards are having better financial performance. As suggested by Abdullah & Ku Ismail (2013), the older directors with pearls of wisdom are more likely to guide the younger directors who are rich in ideas but lack experience. A more experienced director is also an 'entrenched' director that able to provide the linkage between the firm and the government. However, directors in the same age-group, the leadership and decision making style might be biased, and this runs the risk of narrow-mindedness and groupthink. In this study, 58.5% of directors are 60 and above, and the average age of the director is 59 between 2014 and 2018. The oldest board member is 90-year-old while the youngest is 22-year-old. This phenomenon may not bode well for most companies that making efforts to appeal young customers in a rapid changing and data driven business environment. While seniority pairs with wisdom, some of the skills and experiences that these seasoned directors bring may lose their relevance over time as the business is forced to respond and embrace technological innovation.

Whether older boards or younger boards are considered as better boards, the diversity targets set by companies must be carefully reviewed and accessed. An effective and diverse board is built on the foundation of a skills-based framework with right mix of skills, expertise and experience that necessary the board to functioning well. Similar to gender diversity in the boardroom, generational diversity is relevant to acquire a mix of insights is needed to understand the different drivers that impacting the business model.

Research question 4 – Does the presence of a higher number of independent non-executive directors contributing to better firm performance?

The current study shows that there are positive relationships between board independence and firms' ROA. However, the firms' ROE (p=.097) were insignificant in this study. As board composition influence the board's ability to fulfil its oversight roles and responsibilities, an effective board shall include the right group of people with an appropriate mix of skills, knowledge and independent elements. The presence of independent directors can bring independence and diversity into the board, in areas of which the interests of management, company, shareholders and stakeholders diverge. Independent directors need to monitor matters like management performance, remuneration, related party transactions, audit, ESG matters, to minimize opportunities to expropriate minority shareholders' wealth. As recommended in practice 4.2 of MCCG, one of the key success factors to ensure the director's independence is that independent director shall be able to act independently of management.

The findings resonate with agency theory that a director's willingness to monitor the management/CEO increases with his or independence ((Bonazzi & Islam, 2007). While the demand for independent directors is high to meet the compliance purpose as well as serving board committees' need (audit, remuneration and nominating), Malaysia is in shortage of talent pool of independent or non-executive directors (NED) as reported in the news (Tan, 2019). A limited talent pool often contributes to interlocking directorates. A few research is in favours interlocking companies due to these benefits such as higher ROA and ROE, valuable repositories of experience and bring prestige and reputation for company recognition as reported by (Saidin, Malek, & Saidin, 2013; Shariff & Yeoh, 2016; Mans-Kemp & Viviers, 2019). Nevertheless, when a director serves too many boards at the same time, 'overboardedness' could happen and cause insufficient meeting attendance as well as limited monitoring capabilities. Mans-Kemp & Viviers (2019).The board's oversight of talent management, in particular, the nominating and remuneration committee need to identify the key talent, build the right

board structure and develop an effective functioning group of directors with succession planning in place.

Implication of the Research

Several contributions emerge from this study to the corporate governance literature, corporation, investors, and policymakers as below:

Corporate governance literature: The study contributes to an understanding of board-performance link by examining both the traditional variables such as board size and board independence and other organisational attributes such as gender diversity and age diversity variables represented by women and younger directors, respectively.

Corporation: In this study, there are significant positive impacts on the financial indicators when there are more independent non-executive directors or female directors. As such, the study contributes to understanding the criteria to select and nominate the right candidate to the board; as well as developing a fair remuneration mechanism to the competent and capable directors. As the business landscape is always changing, cognizant companies, often look to younger board members to rejuvenate their strategic approach and theoretically stay ahead of the game with a proper succession plan in place. The report's recommendations include recommendations to board committees such as remuneration and nominating committee to improve the diversity of the candidate pool. The board should also formulate targets and measures to achieve board diversity in terms of gender and generational. Companies need to thoroughly review existing policies for assessing director independence and go beyond standards set by Securities Commission as well as Bursa Malaysia to reflect the real independence of a board.

Investors: In general, investors are looking into profitable stocks will assess these financial indicators such as return on invested capital (ROIC), earnings per share (EPS), and return on total assets (ROA) and return on equity (ROE). The finding in this empirical study would help investors to look into other factors such as the size of the board, women on board and board independence in making investment decisions.

Policymakers: The finding of this study contribute to policy-makers' perspective on their rule-setting for these reasons: Empirical evidence emphasised the importance of female directors to a more diverse board adding to better a ROE, and the correlation of a younger board is more appreciated with the gender diversity in the boardroom. This research demonstrates the business case for gender diversity in the boardroom that is in line with Securities Commission's efforts in advancing their CG priorities.

Limitation of the Study

This study has some limitations. First, the study was limited to the Top 100 Malaysian public listed companies (excluding financial institution) from 2014 to 2018. Among the samples, 93 companies were used as some sample firms just filed their initial public offerings or went through restructuring during the period between 2014 to 2018. The research does not represent the whole population entirely. Second, is on data accuracy. Several companies have changed the time period of their annual reports due to their companies' internal decisions and this may affect the accuracy of the data collected. In addition, data was collected through publicly available data sources such as annual reports and the financial indicators were provided by Bursa Malaysia through its internal data search services. There were several missing numbers for financial indicators that had to be filled up with manual calculation. The validity of the findings is limited if there are problems relating to data disclosures and its quality. Third, the nature of the firms - when the firms such as several government-linked corporations, have no choice in selection of board members are mostly affected by government decisions rather than a result of board characteristics or its effectiveness. Lastly, as the fourth edition, MCCG was effective from 26 April

2017, the adoption of corporate governance practices among the companies may vary across the sample firms.

Recommendation for Future Research

This study can be improved by analysing for a longer period of time and to widen the sample size to 300 companies. A longer period and bigger sample size can provide more accurate results. As this study only used board size, women on board, age diversity and board independence as independent variables to predict the financial performance, it is recommended that other internal mechanisms of corporate governance such as ownership structure, board process, tenure of INEDs, directorship interlocking and board committees can be adopted by future researchers too. ROA and ROE were used to indicate the firm performance. There are still many other indicators such as earning per share (EPS), where Tobin's Q can be used to examine the firm performance.

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