Corporate Governance, Board Diversity, and Firm Value: Examining Large Companies Using Panel Data Approach

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Abstract

Many governments seek to impose diversity in the boardroom, but the consequences of doing so are inconsistent and could decrease firm performance and economies. This paper shed light on this diversity at board level topic by conceptualizing the relationships as firm value and diverse board. Reasonable theoretical arguments drawn from Upper-echelon theory and agency theory suggest that board characteristics (gender, ethnic and age diversity) may have either a positive, negative, or neutral effect on the firm value. To investigate this phenomenon relevant hypotheses are developed to test diversity at board level and its impact on firm value with the use of appropriate variables and measures. A total sample of large 60 top Malaysian non-financial companies is selected on the basis of their market capitalization from the population of 938 listed companies of Bursa, Malaysia. To investigate this empirical study, data were collected from the Datastream (Thomson Reuters) database and manually, over the period 2009 to 2013 (5 years). This study incorporates econometrics methodology on panel data analysis, which is used rigorously for hypothesis testing. The age profile of Directors has a significant positive impact on firm value. However, gender and ethnic diversity have no significant impact on firm value. The results indicate that demographic diversity at board level does have a relationship with market value.

1. Introduction

One of the vital issues for corporate boards of listed firms are its board composition. Corporate board is considered to be balanced if its board members come from various backgrounds, which benefits it to perform more efficiently. Developing societal, political and cultural views at top-level management are part of demographic diversity. In addition, the global desire of firms to have better corporate governance (Monks and Minow, 2004). In 1997, Malaysian economy badly affected by financial crisis. The reason behind this corporate failure was poor practices of corporate governance among companies (Mitton, 2002, Hassan and Marimuthu, 2015).

Diversity and corporate governance have a strong relationship in the context of top-level management. Boards of directors are leaders in the firms and responsible for taking a strategic decision and setting strategic goals. Diverse boards may monitor managers and top management teams in a better way. Because board diversity increases board independence (Carter, Simkins *et al.*, 2003). Demographic diversity has a positive impact on firm performance (Hassan and Marimuthu, 2014). In contrast, researchers found that gender diversity among board members could result in a bad firm performance (Adams and Ferreira, 2009). Women participation at board level has a positive relationship with organizational performance. Ethnic diversity among the board of directors can perform their responsibilities more effectively in (Marimuthu and Kolandaisamy, 2009).There is ambiguity among previous research regarding diversity issue at board level (Hassan, Marimuthu *et al.*, 2015, Hassan, Marimuthu *et al.*, 2015). However, past studies used simple statistical tool and techniques to investigate the diversity issue. There is a need to investigate diversity issue in a more holistic way by using different sample size and sampling techniques (Hassan, Marimuthu *et al.*, 2015). Empirical studies showed that there is a strong correlation between demographic diversity and firm performance (Hassan, Marimuthu *et al.*, 2016). It is keen interest for many researchers to explore demographic diversity with regard to firm performance.

This paper focuses on investigating diversity at top-level management of large companies with regard to their firm value (ROA, ROE, Tobin'Q).The outcomes of this study will be useful to government, regulatory bodies and stakeholders of the companies in formulating future policy for the nation. A total sample of 60 large non-financial companies is considered from the population of 938 listed companies of Bursa, Malaysia. To investigate this empirical study, data were collected from the Datastream (Thomson Reuters) database and manually, over the period 2009 to 2013 (5 years). Descriptive statistics, econometrics techniques, and panel data techniques, etc., are used. The remainder of the paper follows as such Sections 2 covers the theory and issues. In section 3, 4, and 5, theoretical model development, econometric methodology, and measures. Empirical results, discussions, and limitations of the study are explained in section 6 and seven sections. Finally, this paper was concluded in the last section.

2. Theory

This section first addresses a discussion and justification of the constructs in the proposed model, both the independent (gender, ethnic & age diversity) and the dependent variables (ROA, ROE, TOBIN'Q). Then the research model and justification for the various prospered relationships are presented. Board diversity and firm performance in listed companies that are strongly associated with corporate governance to achieve good governance. A holistic view of the background of the study which includes research background, problem statement,
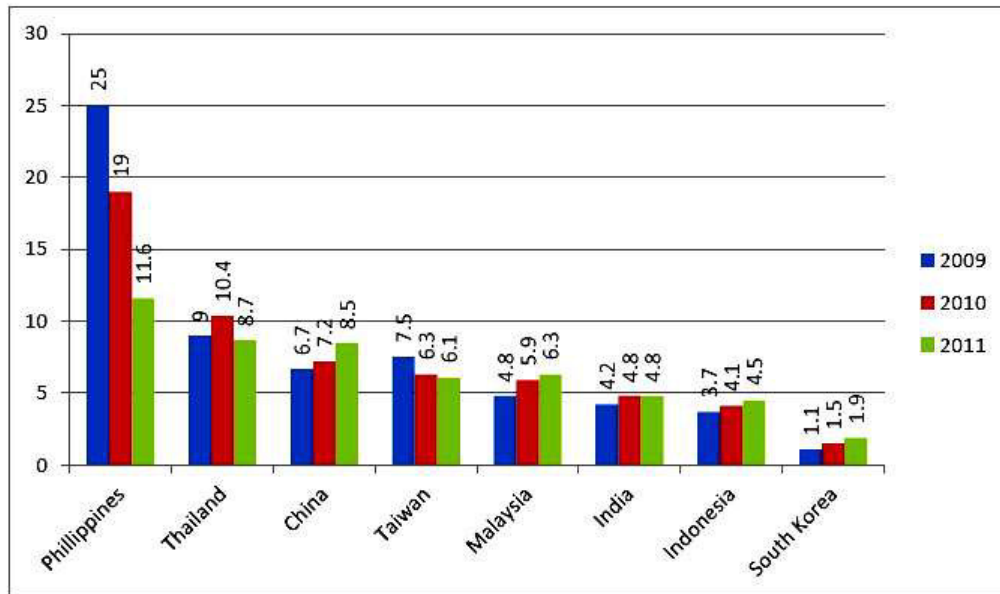
research objectives, research questions, hypotheses of the study and significance of the study will be carried out in this study.

2.1 Theoretical Perspective on Demographic Diversity

In this dynamic environment, it is essential for organizations to see the impact of top-level management and firm value. In the context of board diversity, boards consist of different members with different characteristics and backgrounds, e.g. gender, age, and ethnicity that cause an advantage for the success of firms. There is a strong relationship between diversity and firm performance. Diversity could lead to a company competitive advantage (Abdullah, 2013, Lückerath-Rovers, 2013). No specific theory predicts the nature of the relationship between board diversity and financial performance.

In this study, different social theories from various aspects discussed. Agency theory explains the board functions of monitoring and controlling managers. It based on the "agency problem" that arises when two parties have differing goals. The relationship between principal and agent defined as a contract where the principal engages the agent in his/her duties to the principal. Agency relationship plays a paramount role in firm performance and its base on the composition of the board (Jensen and Meckling, 1976). The upper echelons theory relies on behavioral decision-making theories as well as concepts of organizational demography. Corporate boards are relevant and can use for organizational outcomes such as firm performance and strategic achievements. This theory explains the impacts of demographic and cognitive diversity in the context of firm performance. Researchers argued that diversified boards can make more efficient decisions as compared to homogenous boards (Hambrick and Mason, 1984). Organizations can attract, retain, and take the competitive edge from diverse talent to begin by increasing the diversity among top management teams (Raver and Schneider, 2004). This study based on upper echelon theory, because it related to top-level management characteristics and its effect on firm performance. Diverse boards may better monitor managers and top management teams because board diversity increases board independence. However, agency theory does not predict clear overview of the relationship between board diversity and financial performance(Carter, Simkins *et al.*, 2003).

Gender is a status, which constructed through social, cultural, and psychological means; it is not based on personal traits (West and Zimmerman, 1987). Gender diversity is an integral of board diversity. Board diversity claims that board should reflect society and represent the gender, ethnicity, professional experience and background (Milliken and Martins, 1996). Diversity among boards always bring a better understanding of the marketplace, innovation, increases creativity, leadership, better decision making and effective global relationships (Robinson and Dechant, 1997). In the corporate world, female participation on boards is very low. According to Catalyst census, women's involvement in boards is only 12.4 per cent in the US and 6.4 in the UK. A developed country, Norway, requires at least 40 percent women participation on board since 2008 (Monbiot, 2006). Women representation in the boardrooms in some of the developing countries is presented in Figure 1 (Governance Metrics International, 2011). Currently, Malaysia has laws and regulations, which are encouraging women participation quotas on boards in the private sector and required companies to engage at least 30 percent females at board level (MCCG, 2012). In June 2011, the Malaysian government established a goal of 30 percent female on the holding of senior positions in the public sector by 2016 (SCM, 2011).

Figure 1. Aggregate percentage of women on boards in Asian emerging economies (2009-2011)

3. Theoretical Model Development

The proposed theoretical model is shown in Figure 2. The relationship between demographic diversity at top-level management and firm performance. Here, the variable of investigation is demographic diversity. Demographic diversity includes (gender, ethnicity and age profile of Board of Directors). Gender diversity can be measured by dividing total females by total board members on board. Ethnic diversity measured by dividing total Non-Bumiputera (Non-Malay) by total board members. Age Profile can be measured through an average age of board members. The dependent variables of this study are firm performance, which can be measured firm value (ROA, ROE, and Tobin's Q). The control variables are board size, firm age, firm size, financial leverage, business risk and growth opportunity. This study will show the actual relationship between diversity and firm performance.
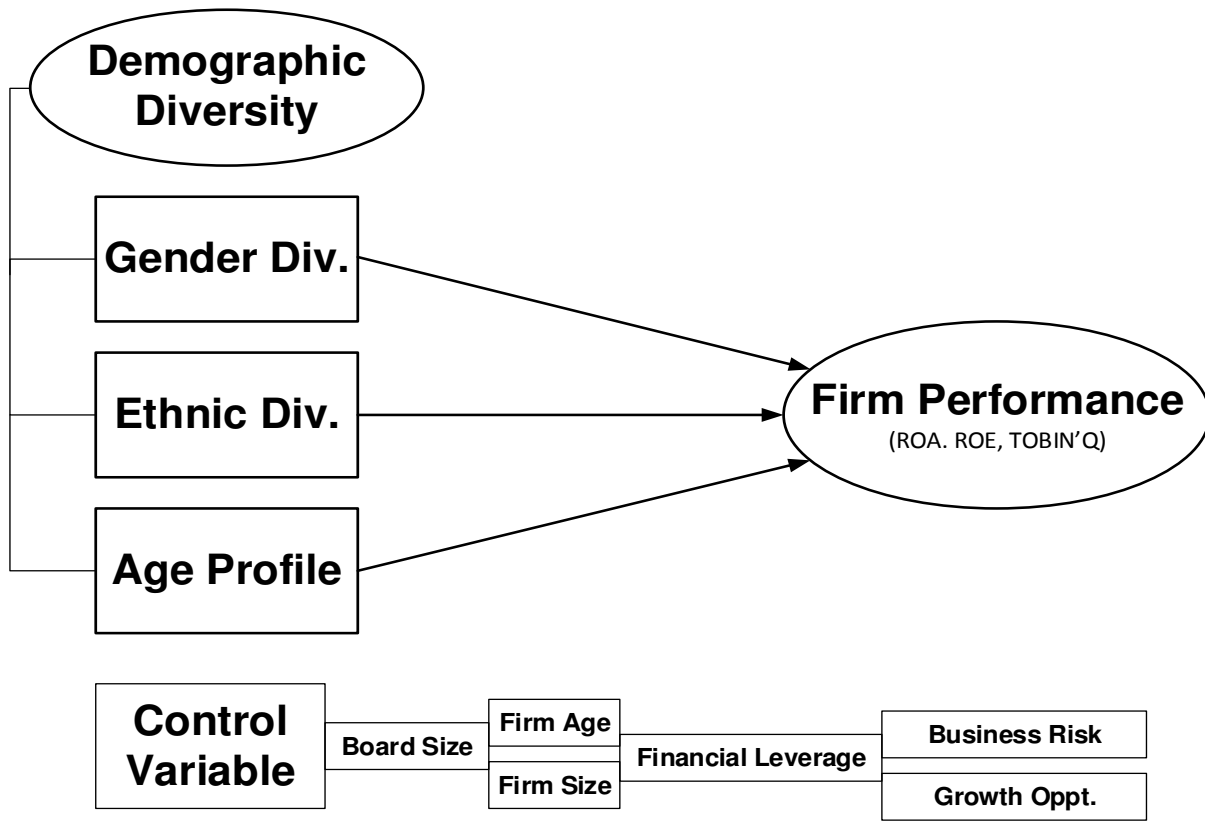
Demographic Diversity at Board Level

Figure 2. Theoretical Model (Demographic diversity at board level and firm performance)

4. Econometric Methodology (Panel Data Modeling)

The econometrics methodology with the focus on panel data modeling, methods and test used to prove the accuracy of results in this study. The panel data modeling incorporate both time series and cross-sectional data. By using panel data, the main advantage that panel data allow identification of particular parameters without making any restrictive assumptions (Verbeek, 2008). The features of panel data have space and as well as time dimensions (Gujarati, 2003). Baltagi argued that when firms are considered for over the period, panel data required to include heterogeneity; more variability, less collinearity (among variables), more degrees of freedom, more efficiency; dynamics of change; larger sample size, more informative data, and thus, bias is minimized.

Given the above discussions, in short, let us say all variables have cross-sectional units (referring companies- i.e. listed companies). Thus, i = 1,2,3,…N and time period, thus, t = 1,2,3,…T. Therefore, the standard linear model is as follows; $y_{it} = \beta_0 + x_{it}^{'}\beta + \varepsilon_{it}$

$x_{it}^{'}$ are the predictors and β_0 and β represent intercept and slope coefficients are identical for all firms and time periods, ε_{it} is the error term and y_{it} is the dependent variable. In addition, panel data model assumes; $\varepsilon_{it} = \alpha_i + \mu_{it}$

μ_{it} denotes that homoskedasticity is assumed and not correlated over time α_i is time variant and homoskedasticity is assumed across firms. The above model is also regarded as random effect model (Verbeek, 2008),(Gujarati, 2003).

In the case of fixed effect model, includes an individual firm-specific intercept term in the model as given below; $y_{it} = \alpha_i + x_{it}'\beta + \mu_{it}$

y_{it} is the regressand, α_i (i = 1,2.3,…N) are fixed unknown constants that are estimated along with β and μ_{it} is assumed to be i.t over individuals and time. The overall intercept term β₀ is dropped. In addition, Hausman Test and Breusch-Pagan LM were specially adopted in determining the most appropriate model (either pooled effect, fixed effect or random effect model) as presented in the empirical discussion section.

4.1 Fixed Effects or Random Effects?

Panel data approach always helps to give robust results, especially for modeling purposes. In addition to this, a panel data set is expected to produce regression results based on the pooled effects, fixed effects, and random effects. However, by using different tests, researchers may have a choice for the better between fixed effect method and random effect method. As for this purpose, two specific tests could be considered, and they are **Breusch-Pagan LM Test (1980)** and **Hausman Test (1978)** (Hausman, 1978). However, the Hausman Test is used in most cases as it tests whether the fixed effects and random effects estimators are significantly different (Verbeek, 2008), and the statistical model can be computed as follows;

$$\xi_H = \left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)'\left[\hat{V}\{\hat{\beta}_{FE}\} - \hat{V}\{\hat{\beta}_{RE}\}\right]^{-1}\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)$$

$[\hat{V}s]$ Refer to true covariance matrices. $\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)$ = 0 (null hypothesis), ξ_H refers to asymptotic chi-squared distribution with K degrees of freedom, where K = number of elements in β.

4.2 Methods and Measures

This study was conducted for top large non-financial listed companies of Bursa, Malaysia. To investigate this empirical study, the data were collected from the Datastream database and manually, over the period 2009 to 2013 (5 years). The rationale behind to choose non-financial listed companies to maintain the homogeneity factor in data. The judgmental sampling technique used on the basis of 5-years average market capitalization of the firms.

Panel data analysis: $Y_{i,t} = \alpha + \beta X_{i,t} + ë_{i,t}$; i = cross-sectional dimension, t= time-series dimension, $Y_{i,t}$ = dependent variable, $X_{i,t}$= independent variable, ë= error term. The regression output was based pooled effect (PE), fixed effect (FE) and random effect (RE) methods. The two approaches were used to check on the consistency of the results. Thus, this robustness will pave a way for meaningful interpretations.

4.3 Hypotheses Testing

The Upper Echelon Theory argued that board characteristics (top-level management) and its impact on firm performance (Hambrick and Mason, 1984). Based on Fig.1, possible hypotheses are made on the basis of previous studies and theories. Consequently, the literature shows the actual relationship between demographic diversity in the boardroom and its impact on firm value (Hassan and Marimuthu, 2014, Hassan, Marimuthu *et al.*, 2015, Hassan, Marimuthu *et al.*, 2015, Hassan, Marimuthu *et al.*, 2016). As the gender participation is an issue in the corporate world and in the literature, debate is ongoing whether gender participation matters or not. In addition, ethnic diversity also an issue. Hence, the proposed hypotheses for this study are as below;

H1$_a$: *Gender diversity among the board members (BODs) has a positive impact on firm performance (ROA).*

H1$_b$: *Gender diversity among the board members (BODs) has a positive impact on firm performance (ROE).*

H1$_c$: *Gender diversity among the board members (BODs) has a positive impact on firm performance (TOBIN' Q).*

According to Yusoff (2010), having board diversity can improve decision-making process, policies and procedures, and networking. Previous studies related to ethnic diversity and firm performance in Malaysia, have found a positive and significant relationship (Marimuthu and Kolandaisamy, 2009, Shukeri, Shin *et al.*, 2012). Zainal, Zulkifli *et al.* (2013) found having foreign directors participation over a five-year period, the results are lower and reflect slow progress in firms. However, in the Malaysian context, ethnic diversity has no impact on firm performance (Shukeri, Shin *et al.*, 2012, Ismail, Abdullah *et al.*, 2013).

H2$_a$: *Ethnic diversity among the board members (BODs) has a positive impact on firm performance (ROA).*

H2$_b$: *Ethnic diversity among the board members (BODs) has a positive impact on firm performance (ROE).*

H2$_c$: *Ethnic diversity among the board members (BODs) has a positive impact on firm performance (TOBIN'Q).*

H3$_a$: *Age profile of board members (BODs) has a positive impact on firm performance (ROA).*

H3$_b$: *Age profile of board members (BODs) has a positive impact on firm performance (ROE).*

H3$_c$: *Age profile of board members (BODs) has a positive impact on firm performance (TOBIN'Q).*

4.4 Model Applied

The below modeling equation shows the relationship between demographic diversity (gender, ethnicity and age profile) and market value of the firm (ROA, ROE, TOBIN'Q). To check on the effect of diversity and firm value, the following model, would be used;

$$ROA_{it} = \alpha + \beta_1 GENDIV_{it} + \beta_2 ETHNICDIV_{it} + \beta_3 AGEP_{it} + \beta_4 FAGE_{it} + \beta_5 FSIZE_{it} + \beta_6 BSIZE_{it} + \beta_7 FINLEV_{it} + \beta_8 BR_{it} + \beta_9 GROWTHOPPT_{it} + \varepsilon \text{---} (1)$$

$$ROE_{it} = \alpha + \beta_1 GENDIV_{it} + \beta_2 ETHNICDIV_{it} + \beta_3 AGEP_{it} + \beta_4 FAGE_{it} + \beta_5 FSIZE_{it} + \beta_6 BSIZE_{it} + \beta_7 FINLEV_{it} + \beta_8 BR_{it} + \beta_9 GROWTHOPPT_{it} + \varepsilon \text{---} (2)$$

$$TOBIN'Q_{it} = \alpha + \beta_1 GENDIV_{it} + \beta_2 ETHNICDIV_{it} + \beta_3 AGEP_{it} + \beta_4 FAGE_{it} + \beta_5 FSIZE_{it} + \beta_6 BSIZE_{it} + \beta_7 FINLEV_{it} + \beta_8 BR_{it} + \beta_9 GROWTHOPPT_{it} + \varepsilon \text{------------------------------------} (3)$$

4.5 Measurement of Variables

The various constructs were operationalized in the context of diversity and firm value. This is a parametric study and used ratio scale. All variables and their measurement are shown in table1.

Table 1: Operationalization of Variables

Variable	Measurement
Dependent Variables	
ROA	Net Income/Total Assets
ROE	Net Income/ Equity × 100%
TOBIN'Q	Total market value of firm / Total asset value of firm
Independent Variables	
GENDIV	Total number of females / Total board members [Gender diversity]
ETHNICDIV	Total Non-Bumiputera (Non-Malay /Total board members [Ethnic diversity]
AGEP	Average age of all board member [Age profile]
Control Variables	
FAGE	Number of years since incorporation [Firm age]
FSIZE	Log of total assets [Firm Size]
BSIZE	Total board members [Board size]
FINLEV	Total Debt / Total Asset [Financial leverage]
BR	S.D (Operating Profit) /Mean of Operating Profit [Business Risk]
GROWTHOPPT	$Sales_0/Sales_{-1}$ [Δ Sales]

4.6 Data Analysis Strategy

The statistical package Stata 13.0 was used to analyze the cross-sectional time series data (Verbeek, 2008) and to see the data reliability and validity used cook's distance outliers test. As per nature of the data, other diagnostic checked also run during rigorous analysis.

5. Empirical Analysis and Discussions

The proposed model and hypotheses of this study are rigorously tested with market capitalization analysis, descriptive statistics, panel unit root test, cook's distance outliers test, pooled OLS, random effect, and fixed Effect techniques.

5.1 Market Capitalization by Sector

The overall breakdown of market capitalization by sector in Figure 3. The total numbers of the sector are 13. The leading sectors are Trading/Services, Finance, and Industrial Products. The pie chart is giving us a kind of interesting picture about market capitalization of each sector, how much every sector is contributing towards Malaysian economy. In this study, we focused all sectors on examining the effect of ethnic diversity on boards with market performance.
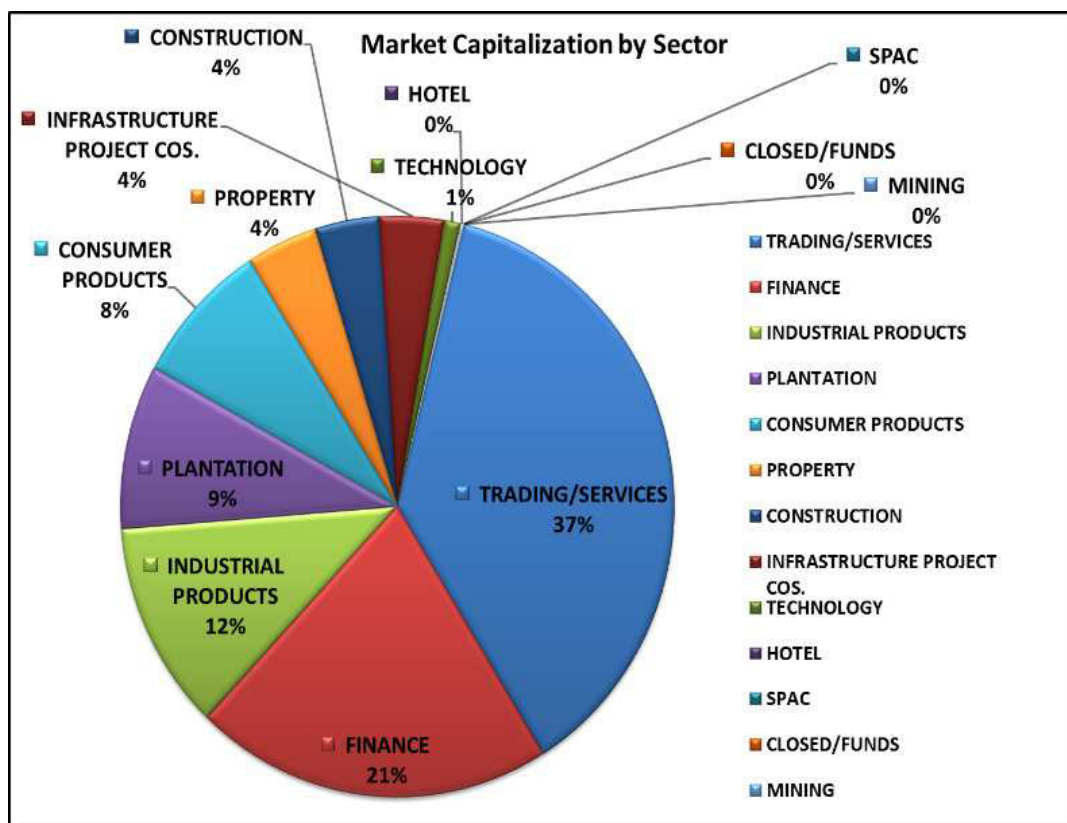
Figure 3. Market Capitalizations of Trading/Services, Finance & Industrial Products

5.2 Descriptive Statistics

The descriptive statistics results of all variables are presented in Table 2. The largest board size is 14 and a maximum woman on board are 3. The average gender diversity at board level is 0.0846. Ethnic diversity average .5594 and age profile average 59.133. Sample is N = 300. The time for study T= 5 Years.

Table 2: Descriptive Statistics on Diversity & Firm Performance

Variable	Mean	Std. Dev.	Min	Max
ROA	10.419	10.020	-19	60.24
ROE	20.741	34.832	-110.54	369.91
Tobin 'Q'	1.3799	1.432	.0001	9.552
Female	.82	.9221	0	3
Gender Diversity	.0846	.0936	0	.3333
Bumi Putera	4.136	2.837	0	12
Non-Bumi Putera	4.906	2.425	0	11
Ethnic Diversity	.5594	.2650	0	1
Age Profile	59.133	4.3762	48.75	70.833
Firm Age	32.733	17.205	2	103
Firm Size	15.716	1.215	12.834	18.411
Total Asset	1.31e+07	1.62e+07	374844	9.90e+07
Board Size	8.94666	1.967	5	14
Financial Leverage	23.828	17.399	0	71.46
Business Risk	.1095	.0752	.0033	.6123
Growth Oppt.	11.789	19.875	-40.85	176.93

N = 300, n = 60, T = 5

5.3 Panel Unit Root Test

H_0: each time series contains a unit root
H_1: each time series is stationary
As the results in Table, 3 shown that panel of this study does not have a unit root factor. Refer to the p-value which is highly significant among in all variables. Thus, we reject the null hypothesis of this test. Thus, the evidence suggests that all variables in the panel have stationary nature. In other words, we can argue that data is stable, and there is no biased information in the panel.

Table 3: Panel Unit Root Test Results

Series	ROA		ROE		TOBINQ		GENDIV		ETHNICDIV	
	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend
Level										
Levin Lin	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
IPS	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.651	0.521	0.000***	0.000***
ADF-Fisher	0.004**	0.001***	0.002**	0.008**	0.004***	0.001***	0.965	0.964	0.086	0.012*

Series	AGEP		BSIZE		FSIZE		FINLEV		GROWTHOPPT		BR	
	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend
Level												
Levin Lin	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
IPS	0.314	0.163	0.291	0.6041	0.960	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
ADF-Fisher	0.859	0.163	0.737	0.988	0.998	0.164	0.036*	0.124	0.000***	0.000***	0.000***	0.000***

Note: $P < 0.05$*, $P < 0.01$**, $P < 0.001$***

5.4 Cook's Distance Outliers Test

Cook's distance outlier test is used to measure the information of leverage and residual of the observation. The graph Figure 4 is showing that there are some outliers, which are not consistent with the data. After deleting these problematic companies. Some cases have large residual (i.e. the difference between the predicted and observed value for cases are exceptionally large), but some cases do not have much leverage. Therefore, we can conclude that our panel is in smooth form after deleting these cases. [Number of obs = 300m, $F(10,289) = 33.99$, Prob > F = 0.0000].
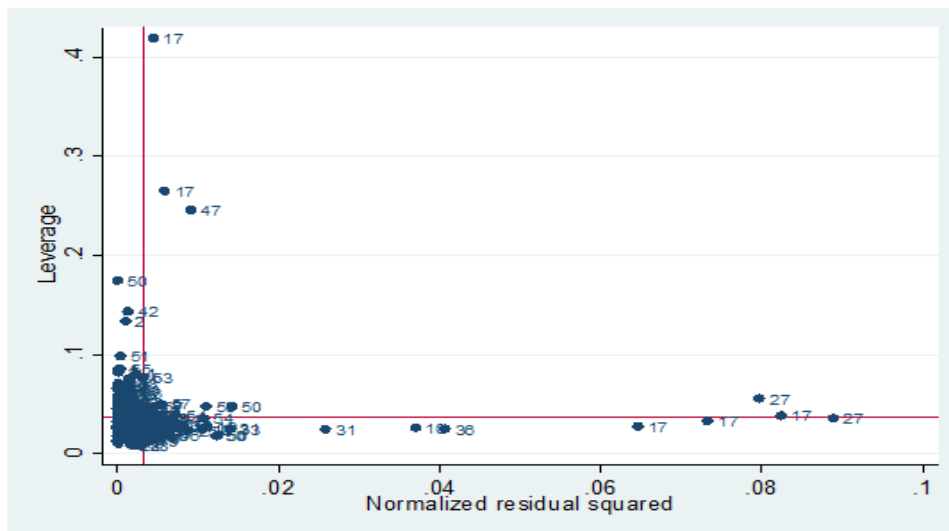
Figure 4. Cook's Distance Outliers Test

5.5 Poled OLS, Random Effect, and Fixed Effect

The key aspects of diversity and firm value discussed in literature review. Here, appropriate statistical tests were applied with the view of confirming diversity at board level and firm value among Malaysian listed companies. In this study, panel data sets were used for the analyses that involved pooled effect, fixed effect, and random effect methods. The summary of the regression results is shown in Table 4 below. The regressands are ROA, ROE, Tobin'Q and regressors are gender diversity, ethnic diversity and age profile of demographic diversity. Furthermore, Breusch-Pagan LM Test is rejected pooled OLS effect in the favor of random effect model, and random effect model is rejected in the favor of the fixed effect model based on Hausman Test for top listed non-financial companies. Additionally, the pooled OLS effect, ethnic diversity showed significant correlations with ROA, ROE & Tobin'Q for non-financial listed companies. PE results showed that age profile is negative significant and negative relationship that means the average age of board increase the value of firm also decrease. The same contradicting results were obtained in other variables.

However, under the fixed effect, the results indicated that gender and ethnic diversity were no longer significant with ROA, ROE & Tobin'Q and negatively correlated. Nevertheless, age profile is positively significant with regard to ROE & Tobin'Q. Thus, by increasing age profile at board level will increase firm value. On the other hand, control variables are very positively significant with firm value in case of firm age (ROE. Tobin'Q) and board size (ROE). Nonetheless, firm size is very negative significant with firm value (ROA, ROE, Tobin'Q). Growth opportunity is positive significant with ROA. Financial leverage and business risk are not significant but negative relationship with firm value. Referring to Table 4 (fixed effect), for a diagnostic check of panel **i) Multicollinearity ii) Heteroskedasticity iii) Serial correlation** checks were applied to see the panel data reliability. Under multicollinearity check, it was found that there was no multicollinearity problem in panel data. As (vif) < 10, which means no multicollinearity problem. In the case of heteroskedasticity, the p-value less than 0.05. It means variance are constant. In serial correlation, the p-value is highly significant which means there is not serial correlation problem. To see the time effect when we used fixed effect model, as the p-value is less than 0.05, we accepted H_0, which means time effects are needed and all years coefficients are jointly significant in the case of Tobin'Q. However, in the case of ROA and ROE, the p-value is greater than 0.05, we rejected H_0, which means time effect are not need and all years are not jointly significant.

Table 4: Results of Panel Data Analysis- Dependent Variables: ROA, ROE & TOBIN'Q

	Pooled OLS (PE)			Random Effect (RE)			Fixed Effect (FE)		
	ROA	ROE	TOBIN'Q	ROA	ROE	TOBIN'Q	ROA	ROE	TOBIN'Q
Constant	102.765*** (13.10)	249.977*** (7.74)	12.573*** (9.57)	80.679*** (6.74)	171.180*** (3.43)	5.927*** (2.79)	106.305*** (4.01)	351.245*** (2.94)	15.484*** (3.93)
Ethnic Div.	4.877*** (2.94)	15.149** (2.22)	.615** (2.21)	2.614 (1.04)	5.725 (0.55)	.4149 (0.95)	-2.943 (-0.76)	-26.235 (-1.50)	-.624 (-1.09)
Gender Div.	2.375 (0.49)	23.881 (1.21)	.498 (0.62)	-.521 (-0.10)	7.303 (0.31)	1.167 (1.35)	-3.688 (-0.59)	-17.1930 (-0.61)	-.841 (-0.91)
Avg. Age of BODs	-.178 (-1.77)	-.1320 (-0.32)	-.0606*** (-3.58)	.0304 (0.24)	.589 (1.07)	.0461** (2.18)	.2714 (1.71)	1.402** (1.96)	.0529** (2.25)
Board Size	-.556** (-2.46)	-2.717*** (-2.91)	-.0650 (-1.71)	-.0123 (-0.04)	.12400 (0.10)	.0704 (1.42)	.5386 (1.45)	3.391** (2.03)	.120** (2.18)
Financial Lev.	.027 (1.04)	.3852*** (3.54)	-.0151*** (-3.43)	-.0235 (-0.72)	.1561 (1.12)	-.0044 (-0.83)	-.0489 (-1.27)	.0133 (0.08)	-.00064 (-0.11)
Business Risk	-3.016 (-0.55)	-12.933 (-0.58)	-2.711*** (-2.96)	-2.582 (-0.57)	-6.472 (-0.32)	-1.427** (-2.04)	-2.782 (-0.63)	-6.584 (-0.33)	-1.165 (-1.79)
Growth Oppt.	.005 (0.27)	-.1584 (-1.88)	-.0064 (-1.87)	.0315** (2.19)	-.0114 (-0.18)	-.0036 (-1.65)	.0538*** (3.77)	.1218 (1.89)	.00166 (0.79)
Firm Age	-.003 (-0.14)	-.1230 (-1.21)	.0028 (0.69)	.013 (0.29)	-.0519 (-0.29)	.0110 (1.28)	.555** (2.00)	3.736*** (2.99)	.2883*** (7.01)
Firm Size	-5.311*** (-12.79)	-14.028*** (-8.21)	-.441*** (-6.34)	-4.747*** (-7.35)	-12.458*** (-4.67)	-.534*** (-4.55)	-8.426*** (-4.46)	-35.058*** (-4.11)	-1.732*** (-6.17)
Breusch-Pagan LM Test($chibar^2$)- ROA	0.000 (137.79)			-	-	-	-	-	-
Breusch-Pagan LM Test($chibar^2$)- ROE	-	0.000 (116.23)			-	-	-	-	-
Breusch-Pagan LM Test($chibar^2$)- TOBIN'Q	-	-	0.0000 (221.22)			-	-	-	-
Hausman Test ($chibar^2$-ROA	-	-	-	0.000 (36.09)			-	-	-
Hausman Test ($chibar^2$-ROE	-	-	-	-	0.0000 (40.67)			-	-
Hausman Test ($chibar^2$-TOBIN'Q	-	-	-	-	-	0.0000 (111.20)			
Observations	300	300	300	300	300	300	300	300	300
Multicollinearity (vif)	-	-	-		-	-	(1.23)	(1.23)	(1.23)
Heteroskedasticity ($chibar^2$)-stat)	-	-	-		-	-	0.0023 (3.21)***	0.041 (0.94)**	0.0125 (2.55)**
Serial Correlation (F-stat)	-	-	-		-	-	0.0013 (3.07)***	0.0471 (1.91)	0.0000 (6.01)***
Testing for Time Effect	-	-	-		-	-	0.7005 (0.55)	0.9284 (0.22)	0.0161 (3.10)**

Note: $P < 0.05$**, $P < 0.01$***

The below Table 5 provides the summary results of the hypotheses tested on developed Model. It should be noted that there is an important hypothesis (H3b) & (H3c) strongly supported on upper-echelon theory. In fact, gender diversity (H1a), (H1b), (H1c) and ethnic diversity (H2a), (H2b), (H2c) in (Table 4) is negatively correlated with firm performance (ROA, ROE, Tobin'Q) but not significant. Here, seven hypotheses results of this study are not supported. Therefore, it proves that there is still inconsistency between current and previous research regarding diversity issues at board level.

Table 5: Summary Results of the hypotheses tested

Objective: To investigate diversity at top-level management of large companies with regard to their market value.	Dependent Variables
ROA	
H1a: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROA).	Not Supported
H2a: Ethnic diversity among the board members (BODs) has a positive impact on firm performance (ROA).	Not Supported
H3a: Age profile of board members (BODs) has a positive impact on firm performance (ROA).	Not Supported
ROE	
H1b: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROE).	Not Supported
H2b: Ethnic diversity among the board members (BODs) has a positive impact on firm performance (ROE).	Not Supported
H3b: Age profile of board members (BODs) has a positive impact on firm performance (ROE).	**Supported**
TOBIN'Q	
H1c: Gender diversity among the board members (BODs) has a positive impact on firm performance (TOBIN'Q).	Not Supported
H2c: Ethnic diversity among the board members (BODs) has a positive impact on firm performance (TOBIN'Q).	Not Supported
H3c: Age profile of board members (BODs) has a positive impact on firm performance (TOBIN'Q).	**Supported**

6. Limitations of the Study

Some limitations of this study are addressed here; there are only 60 non-financial Malaysian listed companies selected out of 938 companies of Bursa, Malaysia. The sample excluded all financial listed companies due to keeping homogeneity in data. The variables used in this study verbalized by different measure as given in the literature and thus might result inconsistent and interpretations. For example, firm size can be measured by total asset, total sales, total market capitalization, etc. Moreover, an individual company may have different accounting policies and practices incline to result in different figures in the financial data and therefore to have different implications. In addition, this study used financial databases for dependent variables. There is a possibility that figures slightly different from actual company annual reported figures. These financial databases do not provide the data with right formulae as required by the research models and hypotheses in particular.

7. Conclusions and Recommendations

The findings from diversity at board level with regard to firm performance have significant positive and negative results. The age profile of directors is very positively significant with firm value. As gender and ethnic participation, have no significant with firm value. As previous studies also showed inconsistency in results. It should be noted that age profile of

directors of large companies seems to the positive relation with firm value. Hence, that age profile of directors participation at board level can enhance the profits and perhaps improving internal operations of their companies. As a result, of this study is inconsistent with previous studies. There might be several reasons behind this issue. Nevertheless, results depict kind of interesting picture regarding diversity and firm performance. Control variables like firm age, firm size, and board size were positively significant which means these variables are also affecting the firm value. However, the presence of diversity at board level does have an impact on firm value and hence more diversified boards higher the firm value in case of large companies.

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