Gender Diversity in Board: Its Impact on Financial Performance

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ABSTRACT

The purpose of this study is to investigate the association between board diversity and firm performance of 26 government-linked companies (GLCs) and 26 non-government linked companies (non-GLCs) in Malaysia. The study focused on gender variable to explain the board diversity and tested its relationship towards firm financial performance as measured by return on equity (ROE) and return on asset (ROA). Due to limited previous research conducted on diversity in Malaysian firms, this article attempts to fill the gap. It is hypothesised that in general, diversity in board has a positive effect on the firm performance. In order to investigate the findings, a final sample of 203 GLCs and non-GLCs listed on the Bursa Malaysia are used across four years from 2007 to 2010. It is analyzed using a quantitative method that is employed by SPSS which compared characteristics of boards with firm performance. The finding reveals that board diversity as measured by gender differences was negatively and significantly related to ROA and ROE in both GLCs and non-GLCs. The results failed to satisfy the expectation made under this study, thus rejecting the hypothesis that gender board diversity is positively related to firm performance. As a conclusion, this study could not establish that diversity in board would enhance firm performances. Hence, a future need to address a balance between men and women would be of greater importance rather than the presence of woman in the board in ensuring better firm performance.

Keywords: *board diversity, gender, firm performance*

Introduction

Growing businesses face a range of challenges. As a business grows, different problems and opportunities demand different solutions. Frequent business challenges require a team namely the board of directors (BODs) who can act as a top level advisor and monitor the firm. They are responsible to protect shareholders' assets and ensure they receive decent returns on their investment (Kennon, 2011). A well-functioned BODs is also expected to maximize shareholders' wealth through an effective monitoring and controlling over the management as well as ensuring good corporate governance practices are well performed in the firm.

Board characteristics affect the effectiveness of monitoring the management and the quality of corporate governance (Chien, 2008). It should be noted that demographic is one of the characteristics of the boards. Demographic characteristics (e.g. age, tenure, gender, specialization) are related with many cognitive bases, values and perceptions that influence the decision making of BODs (Marimuthu & Kolandaisamy, 2009). Therefore, the more complex the decision is (e.g. decision in strategic measure of the company), the more important an individual's characteristics of the decision maker are required (Zee & Swagerman, 2009). Demographics characteristic such as tenure, age, experience, and board size are only some parts of the characteristics that contribute to the diversity of the board (McIntyre, Murphy & Mitchell, 2007). However, this study is focusing on one demographic characteristics of board diversity; i.e. gender to investigate its effect towards firm's financial performance.

The current study has selected a final sample of 203 listed Government-Linked Companies (GLCs) and Non Government-Linked Companies (non-GLCs) for a period of 4 years starting from 2007 until 2010. A four-year window period from the year 2007 to 2010 is chosen as to reflect the effects of the revised corporate governance in Malaysia in year 2007 (The Malaysian Code on Corporate Governance, 2007) as well as to enable a better analysis with current issues and environment. Choosing these types of companies as the sample for the current study is to create a gap between the prior research conducted in Malaysia which has looked at the 100 public listed companies in Malaysia (Marimuthu & Kolandaisamy. 2009). It should be noted that the Malaysian Government has performed the "GLC Transformation Programme" and one of the key principles is to create economic and shareholders' value through enhanced or improved performance of GLCs (http://www.khazanah.com.my/faq.htm). Therefore, by examining the impact of board diversity on GLCs financial performance, the result of this study may be used to assist in realizing the key principle of

GLCs transformation as well as to contribute to the development of GLCs in Malaysia. The statistical result of this study revealed a significant but in contrast effect with what had been expected and hypothesized.

Literature Review

Board Diversity

Coffey and Wang (1998) define board diversity as the variation among its members and it is probably derived from multiple sources of board characteristic such as expertise and managerial background, personalities, learning styles, education, age and values. The more diverse of board, the more it can contribute to improve organizational performance by providing new idea, insight and perspective to the boards (Siciliano, 1996).

However, several studies show that the effect of board diversity on team performance is not uniform (Dahlin et al., 2005). For instance, Carter et al. (2007) examine the relationship of ethnic and gender diversity in the three functions of the board committees namely, audit, executive compensation, and director nomination on firm's performance and find that gender diversity has a positive impact on firm's performance through audit committees of the board but not in executive compensation and director nomination committee, while ethnic diversity turn out to be positively impact on the firm's performance through all functions of the board committees. Dahlin et al. (2005) suggest that working in a diversified team can be challenging because the nature of the team diversity with various perspectives could result in difficulty for the team members to perform, communicate and coordinate their work.

Gender Diversity

Prior literatures stated that the positive impact after the corporate scandals and the collapse of high-profile companies such as Enron and WorldCom have enhanced the importance of monitoring role and corporate governance (Campbell & Vera, 2008). The existence of a new legislative after the crisis such as Sarbanes Oxley Act (SOX) 2002 has provides the guidelines of board composition, board audit committees, board independence and other corporate governance practices but neither one of that mentions the gender composition or diversity of BODs. However, although none of SOX guidelines specifically addresses any aspect of gender diversity, it is believed that the provisions of SOX and the listing exchanges have indirectly have a major impact on the needs of roles and responsibilities of women in the board as a part of contributor to the firm performances (Dalton & Dalton, 2010).

Previous studies have found a negative result on gender diversity in the board. Adams and Ferreira (2009) argue that the average effect of gender diversity on firm's performance is negative. At first impression, the correlation between gender diversity and firm value seems to be positive, however it changed once they apply reasonable procedures to tackle omitted variables and reverse causality problems. Their finding suggests that gender diversity positively affects performance in firms that have weak governance. However, in firms with strong and well governance practices, they assert that determining gender quotas in BODs can reduce the firm's value due to excessive monitoring. Wang and Clift (2009) examined the relationship between gender diversity and firm performance on top 500 Australian and indicate that there is no statistically significant association between ROA, ROE and shareholder return with the percentage of woman members on the board. They conclude that there is no strong relationship between gender diversity on the board and financial performance based on two reasons, firstly there are very few woman on the boards which is insufficient to give the benefit of woman's talents on the board. Secondly, women representation is probably assumed to be only a process of socialisation and consequently, the contribution of woman directors on firm's performance has never been realized on the boards (Rose, 2007). This argument is supported by Marimuthu and Kolandaisamy (2009) who argue that the effect of gender diversity is only for a short run and woman did not play the main role to contribute to the firm. Their study on Top 100 Public Listed Companies in Malaysia on gender effect among the board members did not turn out to be significant with regard to ROA and ROE.

Even though the results are contradicting and the positive or negative impact of woman directors is still undetermined, most of the studies on relationship between gender diversity and performance suggest that woman directors have positive impact on board performance (Radlach et al., 2008). For example, Carter et al. (2007) used all firms listed on the U.S Fortune 500 over the periods of 1998-2002 which result in

approximately 2,000 firm-years data to investigate the effects of gender diversity on firm performance. The result supports that gender diversity in board committees appears to influence positively on the financial performance by increasing value for shareholders particularly through the audit function. Consistently, Bathula (2008) did a study based on data of firms listed on New Zealand Stock Exchange constitute of four years from 2004 to 2007, support the argument that gender diversity leads to enhance firm performance. Their finding provides evidence to stakeholder perspective and resource dependency perspective that diversity is beneficial to firms and suggests that women directors have the probability to bring their point of views more effectively in a smaller board rather than in a larger board. In addition, previous study suggests presence of gender diversity in the board contributes to enhance firm performance.

Research Framework

This study analyzes board characteristics; gender which represents the diversity of the boards and its relationship with both ROA and ROE as firm financial performances. The study also takes into account the firms' size and industry types as control variables to avoid firm's performance being influenced by other factors. Then, the research framework is designed to illustrate the relationship between dependent and control variables with the firm performance.

Figure 1: *The effects of gender diversity on firm financial performance.*
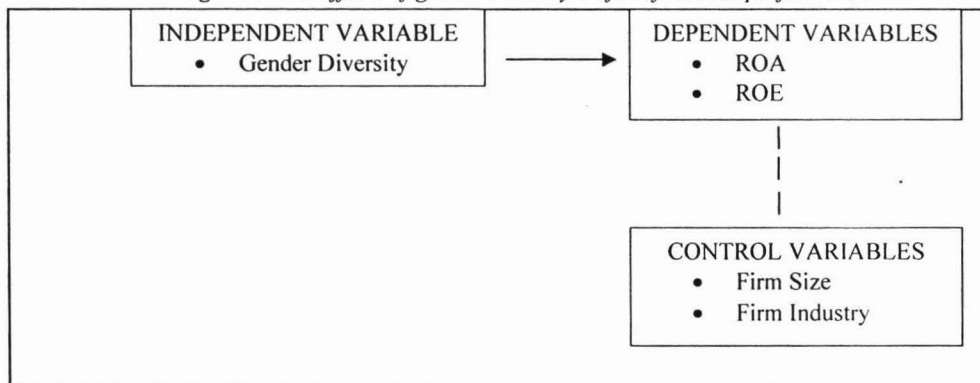

Figure 1 outlines the research framework for this study. Based on research framework, this study attempts to examine the relationship between the gender diversity of the board with ROA and ROE. It is expected that gender diversity has a positive relationship with both ROA and ROE. The study also includes two control variables which are the firms' size and firm industry to prevent the effect of other factors that would probably influence firm's performance and to avoid biased results on the relationship.

Hypotheses Development

Previous studies on board diversity shows mixed results for the relationship between gender diversity in the board of director and firm's performance. Marimuthu and Kolandaisamy (2009) assert that the impact of gender diversity among the board members is found to be not significant with regard to financial performance. They conclude that woman's role is not felt in the board composition. In fact, the effect is only for a short run. Similarly, Wang and Clift (2009) indicate that there is no statistically significant relationship between firm's performance which is ROA, ROE and shareholders' return with gender diversity in the board. The reason is the very small number of women in the board is insufficient to deliver a critical impact and the advantages of women's talents to the board.

However, most studies find a positive result on the association between gender diversity in board and firm's performance. Campbell and Vera (2008) argue that gender diversity in BODs has a positive impact on firm's value. They suggest that, the most important focus for Spanish companies should be the balance between women and men in board rather than simply having the presence of women. They find that investors

in Spain do not penalise firms which increase their woman board membership, in fact, investors expect that greater gender diversity in board may generate economic benefits.

Furthermore, Vera and Martinez (2010) who studies gender diversity in SME's board of director find that gender diversity in BODs has a positive effect on firm's performance. They indicate that woman's representation on the boards creates an advantage for the firms and contribute to benefits on work groups such as variety of alternatives, opinions and strategies that able to overcome the problems of integration as well as slowness and difficulties in decisions making process. On the other hand, Carter et al. (2007) find that gender diversity in BODs has a positive effect on the financial performance particularly in audit committees. The result shows that gender diversity among board members appear to create value for shareholders. Finally, board with diverse gender has more alternatives to employ in decision making process (Vera & Martinez, 2010) and this variation may improve the appearance of the firm which positively affect the customers' view and perception of the firm and contribute to a better performance (Pohjanen et al., 2010). Therefore, these arguments have been used to develop hypotheses that support a strong correlation between gender diversity in BODs and firm's financial performance:

H1 : Gender diversity among board members is positively related with firm's performance.

Research Methodology

Sample Selection

The sample consists of Government Linked Companies (GLCs) and non-Government-Linked Companies (non-GLCs) listed on Bursa Malaysia over the periods 2007 until 2010. The list of GLCs was obtained from the Ministry of Finance (MOF) website; (http://www.malaysiaco.com/government-linked-company). For the purpose of the study, only listed companies and other than financial companies on Bursa Malaysia are being selected while the remaining of not listed and financial firms are being excluded. The selection of non-financial companies is important to control the heterogeneous characteristics of the companies selected (Marimuthu & Kolandaisamy, 2009).

The list of listed GLCs in Bursa Malaysia was obtained from the website of Putrajaya Committee on GLCs High Performance (PCG); (http://www.pcg.gov.my/trans_manual.asp). It states that the total listed GLCs in Malaysia are 33 companies as at 13 March 2009. Thus, after excluding 7 listed financial companies, it leaves a balance of 26 listed GLCs companies for this study. Since the purpose of the study is to make a comparison between GLCs and non-GLCs, another 26 non-GLCs have been selected from companies listed on Bursa Malaysia in order to match them with GLCs.

The complete data of this study initially consist of 208 samples generated from each 26 GLCs and 26 non-GLCs for four-year period from 2007 to 2010 (104 samples of GLCs and 104 samples of non-GLCs). However, due to unavailability of important data to perform this study from several firms' annual report, the number was reduced to a final sample of 203 firms constitutes of 102 samples of GLCs and 101 non-GLCs as shown in Table 1:

Table 1: Firms by industry

		GLCs	Non-GLCs
Valid	Trading/services	56	54
	Plantation	8	8
	Consumer products	12	12
	Industrial Products	12	11
	Technology	3	4
	Construction	4	4
	IPC	4	4
	Properties	3	4
	Total	102	101

Data Collection

The data for this study comes from multiple sources of secondary data. The primary sources of this study are extracted from company's annual report downloaded from Bursa Malaysia website. The information

regarding the gender of the board was collected from the company's annual report as to further examine the gender diversity in board. In addition, financial databases namely DataStream and OSIRIS were used in order to complete our data regarding the size, performances and the financial ratios of the firms.

Data on the independent variables represented by the board characteristics consist of gender, ethnic, education and tenure diversity was obtained from the annual report for each company through content analysis. For control variables, the firm's size was collected from the OSIRIS which explains the total assets of the firm while types of firm's industries were classified in reference to Bursa Malaysia.

Variable Measurement

In this study, the general multivariate model is used as the basis of empirical analysis for testing the hypotheses. The hypothesized relationships are modelled as follows:

Model 1: GLCs

$$LogROA_t = \beta_0 + \beta_1 gender_t + \beta_5 CFirmSize_t + \beta_6 Industry_t + \varepsilon_t$$

$$LogROE_t = \beta_0 + \beta_1 gender_t + \beta_5 CFirmSize_t + \beta_6 Industry_t + \varepsilon_t$$

Model 2: Non-GLCs

$$LogROA_t = \beta_0 + \beta_1 gender_t + \beta_5 CFirmSize_t + \beta_6 Industry_t + \varepsilon_t$$

$$LogROE_t = \beta_0 + \beta_1 gender_t + \beta_5 CFirmSize_t + \beta_6 Industry_t + \varepsilon_t$$

All variables included in this study are measured as shown in Table 2:

Table 2: Measurement of variables

Variables	Measurements	Literatures
Dependent variables		
Financial performance :		
1) Return on asset (ROA)	Net Income divided by total asset	Marimuthu and Kolandaisamy (2009)
2) Return on equity (ROE)	Net Income divided by total equity.	
		Marimuthu and Kolandaisamy (2009)
Independent Variables		Pohjanen et al. (2010)
1) Gender diversity	Ratio scale: Woman directors divided by total board directors.	
		Marimuthu and Kolandaisamy (2009)
Control Variables		Pohjanen et al. (2010)
1) Firm size :	Approximated by the natural logarithm of total assets.	
2) Firm Industry :	Control for industry with a dummy variable. Industry dummy for property, construction, trading and services, consumer product, infrastructure, plantations, industrial product and technology. Measured as dummy variable taking the value of 1 if the firm belongs to a particular industry, otherwise 0.	Ees, Postma and Sterken (2003) Campbell and Vera (2008) Carter et al. (2007) Post et al. (2011) Ehikioya (2007)

Data Analysis

The multiple regression was used to test the hypotheses. By using Statistical Package for Social Science (SPSS), this study examines whether or not there is a significant relationship between gender diversity in board and both ROA and ROE.

Findings and Discussions

To analyze the result, statistical tools employed for this study are descriptive statistics, Independent sample t-test, Kolmogorov-Smirnov test, Pearson correlation and multiple regressions.

Firstly, all the variables are explained by descriptive statistical tests which involved descriptive statistic test for the numerical variables (gender diversity, total assets, return on assets and return on equity); and frequency statistic test for the categorical variable (firm industry). The results are shown in Table 3.

Table 3: Descriptive Statistic test for numerical variables

		N	Range	Minimum	Maximum	Mean	Std Deviation
Gender Diversity	GLCs	102	.38	.00	.38	.10	.10
	Non-GLCs	101	.33	.00	.33	.06	.09
Total Assets (Firms' size)	GLCs	102	74,021,874	59,226	7,4081,100	1,1420294	1,653,9659
	Non-GLCs	101	262,000,000	190,870	262,000,000	8,381,384	32,179,119
Return on Assets	GLCs	102	74.62	-41.21	33.41	7.34	8.15
	Non-GLCs	101	81.82	-9.13	72.69	7.63	13.49
Return on Equity	GLCs	102	125.35	-63.00	62.35	11.10	13.11
	Non-GLCs	101	244.34	-28.66	215.68	14.80	35.16
Industry	GLCs	102	7	1	8	2.42	1.98
	Non-GLCs	101	7	1	8	2.51	2.07

From Table 3, first of all, with regard to gender diversity, the statistics show the mean is 0.10 for GLCs ranging from a minimum of 0 to a maximum of 0.38 which explains that the average percentage of woman on board is just near 10 percent. The average for gender diversity in Non-GLCs is 0.06 at a minimum of 0 to a maximum of 0.33 which is lower than GLCs. Next, for total assets, looking at the maximum and minimum amount in both GLCs and Non-GLCs, the results generally showed a huge difference in firms' size. On the other hand, the result for the dependent variables shows the average ROA and ROE for GLCs are 7.34 and 11.10 respectively. These indicate that the mean for ROA is below the mean of ROE. The average ROE for non-GLCs is 7.63 and 14.80 for ROA. Similar result with GLCs, the mean for ROA is also below the mean of ROE. Meanwhile, for the firm industry variable, we can see that there is not much difference between the mean for GLCs (2.42) and Non-GLCs (2.51).

Next, Table 4 reports the significant difference of mean variance for ROA and ROE between GLCs and non-GLCs, as performed by the independent-sample t-test. The t-test results show that there are no significant differences in the mean value of ROA and ROE in both GLCs and Non-GLCs.

Table 4: T-test for mean comparison of ROA and ROE between GLCs and Non-GLCs

Variable	Mean difference	t-stat	P-value
ROA	-.284	-.181	.856
ROE	-3.70	-.994	.321

Note:
Grouping variable: (GLC assigned value of 1, non-GLC, assigned value of 2)
***Significance at 0.01 level; **Significance at 0.05 level; *Significance at 0.10 level

Further, correlation analysis test is used to determine linearity of relationship (Magpayo,2007) and describe the strength as well as the direction of the linear relationship. Table 5 reports the correlations between the variables used in the regressions for GLCs and non-GLCs. From the result, it shows that for GLCs, there is no significant relationship between independent variable, i.e. gender diversity and the dependent variables, i.e. ROA and ROE. Yet, the result shows a significant negative correlation at 5% level between the two variables (-.28 and -.22 respectively) in Non-GLCs. Nonetheless, there are highly significant positive correlations at 1% level between ROA and ROE as a measure for firm's performance in both GLCs (.80) and Non-GLCs (.96).

Table 5: Pearson Correlation Test for both GLCs and Non-GLCs

	Gender Diversity		Total Assets		Firm Industry		ROA		ROE	
	GLCs	Non-GLCs	GLCs	Non-GLCs	GLCs	Non-GLCs	GLCs	Non-GLCs	GLCs	Non-GLCs
Gender Diversity	1	1	.26**	.05	-.23*	-.20*	-.19	-.28*	-.14	-.22*
Total Assets	.26**	.05	1	1	-.35**	-.06	-.07	-.004	.013	-.02
Firm Industry	-.23**	.20*	-.35**	-.06	1	1	-.30**	-.03	-.36**	-.004
ROA	-.19	-.28*	-.07	-.004	-.30**	-.03	1	1	.80**	.96**
ROE	-.14	-.22*	.01	-.02	-.36**	-.004	.80**	.96**	1	1

Finally, multiple regression analysis is conducted to test the hypothesis developed in this study. To ensure a valid model being performed in this study, the natural log of ROA and natural log of ROE are regressed separately on the independent and control variables. Data transformation using natural logarithm is being used to have a normal data distribution for ROA and ROE. Table 6 and 7 reported the statistical results for Model 1 and Model 2.

Table 6: Regression results for Model 1: GLCs (N=102)

Variables	Unstandardized Coefficient Beta	LogROA (t-stat)	Unstandardized Coefficient Beta	LogROE (t-stat)
(Constant)	2.52	16.42***	3.01	21.79**
Gender Diversity	-1.39	-2.05**	-1.37	-2.24**
Total Assets	-1.06	-2.45**	-8.24	-2.12**
Firm Industry	-.14	-3.64***	-.15	-4.27***
Adjusted r^2		14.2%		17.1%
F-Statistic(P-value)		6.176 (0.001)		7.278 (0.000)

Notes: *** Significant at the 0.01 level; ** Significant at the 0.05 level; and * Significant at the 0.10 level

Based on Table 6, the adjusted r^2 values indicate that independent and control variables in GLCs contributed about 14.2% to changes in ROA and 17.1% to ROE. Then, in order to observe the overall significance of the model, F-test is conducted by using Analysis of Variance (ANOVA). From the result in Table 6, the F-ratio value of 6.176 and 7.278 are significant at 1% indicating that at least one of the explanatory variables in Model 1 has an effect on the dependent variables, i.e. ROA and ROE. Furthermore, the results show significant negative results at 5% level between gender diversity and firm's performance, i.e. ROA (-2.05) and ROE (-2.24).

Next, based on Table 7, the adjusted r^2 values showed that independent and control variables in Non-GLCs contributed about 26.5% to changes in ROA and 13.7% to ROE. The F-ratio value of 11.715 and 5.385 are both significant at 1% level % indicating that at least one of the explanatory variables in Model 2 has an effect on the dependent variables, i.e. ROA and ROE. In addition, again, the results appear the same

significant negative results in Non-GLCs, but at 1% level between gender diversity and firm's performance, i.e. ROA (-5.37) and ROE (-3.98). Hence, despite its significance on both models, it shows the opposite sign than what has been expected from this study. Thus, the regression results for both model 1 and 2 rejected the hypothesis, **H1**, i.e. Gender diversity among board members is positively related with firm's performance.

Table 7: Regression results for Model 2: Non-GLCs (N=101)

Variables	Unstandardized Coefficient Beta	LogROA (t-stat)	Unstandardized Coefficient Beta	LogROE (t-stat)
(Constant)	2.04	10.63***	2.43	11.52***
Gender Diversity	-7.41	-5.37***	-6.13	-3.98***
Total Assets	3.23	.95	3.11	.87
Firm Industry	-.07	-1.19	.01	.16
Adjusted r^2		26.5%		13.7%
F-Statistic(P-value)		11.715 (0.000)		5.385 (0.002)

Notes: *** Significant at the 0.01 level; ** Significant at the 0.05 level; and * Significant at the 0.10 level

Conclusion

This study attempts to examine the relationship between gender diversity and the firms' performance. A research was performed to give a thorough explanation of how gender diversity in board affects firm performance measured as return on equity (ROE) and return on assets (ROA). The study was conducted in Malaysia using 26 GLCS and 26 non-GLCs listed on Bursa Malaysia over the years 2007 until 2010.

The results showed that Non-GLCs exhibit more negative impact with regard to the relationship between gender diversity in board and firm's performance, even after controlling firm's specific factors such as firms' size and industry. The results indicate that significant relationships are found between gender diversity and firm's performance, i.e. ROA and ROE for both GLCs (at 5% level) and Non-GLCs (at 1 percent level). Surprisingly, these significant results show a negative relationship on firm's performances. The finding is totally against the hypothesis developed in this study which suggests that gender diversity in board have positive impact on firm performances. It is believed that the reason for this is related to the small number of women directors in board. Similar to other countries such as Sweden (Pohjanen et al., 2010), Spain (Campbell & Vera, 2008), Malaysian large-cap firms have minimal woman's participation in the board which is not enough to give the board a critical impact or the advantages of women's involvement (Wang & Clift, 2009) in Malaysian firm.

As for the conclusion, the finding suggests that homogeneity in gender have more competitive advantage rather than heterogeneity among board members. It could be that man and woman may have varied opinions to manage a firm which can lead to conflicts and lower the firm's performance. However, the results may be affected by the small average samples of gender diversity which indicate that the composition of women directors in the board is unbalanced and dominated by men directors. If Malaysian firms have higher level of gender diversity in the board to be used as sample in this research, it may result in different findings such as increase performance as had been showed by previous study (Carter et al., 2007; Campbell & Vera, 2008). Recently, the announcement made by the Prime Minister that the Cabinet has now approved a policy that women must comprise at least 30% of those in decision-making positions in the corporate sector by 2016 (Nik Anis, 2011) can be seen as the first step to develop and encourage more diversity in the corporate board. Additionally, the new policy that women must comprise at least 30% by 2016 in decision-making positions executed by the Government is seen as a wise action and this policy should be supported and assisted by regulatory bodies to ensure that firms in Malaysia are in line with the policy.

Recommendations for Future Research

There is a lot of other areas and extensions that could be possible for future research. This study could be replicated by considering other board characteristics variables such as ethnicity, education, tenure, age and religion of the directors in the board. It would be interesting to know the impact on those diverse variables on

the firm's performance. In addition, future research may consider employing different formulas to measure the firm's performance instead of financial performances such as ROE and ROA. As Bursa Malaysia views corporate social responsibility (CSR) as an integral part towards being an internationally competitive marketplace, it would be very useful to find whether the CSR of the firms is influenced by the diversity of the board. Furthermore, future research should be extended by taking newly updated list of GLCs. Lastly, future research may also focus on all GLCs regardless of listed or non-listed in Bursa Malaysia. Due to their unique features and policies, there is a probability that the result will contribute to better governance practices in GLCs and provide value added feature to regulators as well as Malaysian Government as a major institutional ownership.

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