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WOMAN ON BOARD AND FIRM PERFORMANCE: EVIDENCE FROM INDUSTRIAL COMPANIES

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Abstract

This study aims to examine the effect of board gender diversity on the firm performance. This study also includes controlling variable effect to examine the relationship between gender diversity and firm performance. The ordinary least squares (OLS) regression analysis is used to investigate the relationship between gender diversity of board of directors and firm performance. This study tests the hypotheses on a sample of listed industrial companies on the Bursa Malaysia for the year 2016. The results indicate that the boards of sample companies in Malaysia are male-dominated. Moreover, this study finds that the board gender diversity did not have significant impacts on firm performance, as measured by return on assets (ROA) and return on equity (ROE). Limited empirical evidences and studies have been conducted on the relationship between board gender diversity and firm performance in emerging countries. In addition, lack of consensus on the relationship between board gender diversity and firm performance and it was based on mixed and contradictory findings in prior research. Therefore, this study extent the current literature in the context of Malaysia indicates that female directors cannot play their roles actively and effectively due to a very limited number of female representatives on the boardroom. This study contributes advanced empirical evidence on board gender diversity and board characteristics on the firm performance relationship in the context of Malaysia.

Keywords: Corporate governance, female directors, gender diversity, board diversity, financial performance.

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1. Introduction

Corporate governance aims to strengthen the practices of corporate business. A good practices of corporate governance might give huge impact towards the economic growth, society welfare and helps the company provides assurance to the stakeholders. Corporate governance is also contributes to the improvement of corporate performance by improving credibility, transparency and maintaining effective disclosure. Therefore, the code of corporate governance was developed to set out the best practices and principles on structures and processes to achieve the best governance framework (Ghazali & Manab, 2013) which in turn achieving the ultimate company's objectives. This study is motivated from the revision of Malaysian Code on Corporate Governance (MCCG) which primarily focused on the board structures and the role of board of directors including board leadership, board composition, board independence and disclosure activities. The revision of the MCCG aims to inspire public that the company is concerning about their shareholder (Haniffa & Hudaib, 2006; Liew, 2007).

This study significantly contributes to the corporate business in improving the board effectiveness. Further, limited consensus on the link between board diversity and firm performance may contribute meaningful results in emerging market. The reminder of this paper are organised as follows; next section provides a discussion on the review of existing literature of variables and theoretical framework, problem statement, research question and research objective, next section explain the research methodology and research model and the last section considers conclusions drawn on research findings and its implications from the study.

1.1. Literature review and hypotheses.

Board Diversity. Board diversity can be classified into demographics characteristics which are gender, age, ethnicity and race and also can be determine in terms of cognitive abilities such as knowledge, education, values and perceptions. Kılıç & Kuzey, (2016) revealed a significant positive association between female directors and financial performance of the firms in a sample of Turkey companies and further suggests that balancing the proportionate between male and female directors significantly improved the firm financial performance. Furthermore, the right balance of directors between male and female are importance in improvement of financial performance. Similarly, several studies done in developed economics have shown that gender diversity positively impacted the firm performance in US companies (Erhardt, Werbel, & Shrader, 2003), Spain (Campbell & Mínguez-Vera, 2008) and China (Liu, Wei, & Xie, 2014).

On the other hand, some contradict views on board gender diversity might lead to lower firm performance. Solakoglu and Demir (2016) argued that the process of decision making make more complicated and time-consuming when the board is diverse. Regarding to this, board diversity may lead to ineffectiveness and conflict in the board. This argument is supported by (Smith, Smith, & Verner, 2006) which found that board diversity associated with value destruction rather than value creation. Besides negative impact on firm performance between board diversity and firm performance, there are also study find no linkage between these variables. For instance, a study done in Danish companies found that board diversity has not influence firm performance (Rose, 2007). Due to these mixed findings on board diversity, hence, the hypotheses are posted as follow:

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H1a: The female CEO significantly impacts firm performance.

H1b: The proportion of female directors on a board significantly impacts firm performance.

H1c: Gender diversity, which is measured by the Blau index, significantly impacts firm performance.

1.2. Theoretical framework – Agency theory.

Corporate governance control and direct the company through relationships of the stakeholders such as managers, board of directors, shareholders and employees with the company by specifying their responsibilities and rights in the company. The corporate governance are the mechanisms that will protect the outsiders such as the investors from the opportunities, fraud or any conflict of interests that can be taken by the insiders such as management. Hence, corporate governance balances out the variety of interests of the stakeholders. Agency theory define that the interest on the principal and the agent are different. Agent will represent a principal interest. However, in this theory both parties have different interest due to their goals. Based on agency theory perspective, gender diversity considered as internal control mechanism in reducing agency cost arises from agency problems (Reguera-Alvarado, De Fuentes, & Laffarga, 2017). Besides, domination of CEO and chairman by same person might contribute to agency problem. Further, this might happen as vice versa as the CEO have extraordinary influence on the decision of the companies (Core, Holthausen, & Larcker, 1999). Other than that, CEO may also have the tendency to do the merge and acquisition according to their self-interest to increase their return (Dorata & Petra, 2008). All of these will bring to corporate governance failure due to the imbalance of authorisation and power to make decision (Norwani, Zam, & Chek, 2011).

2. Problem Statement

Specifically, the board of directors holds the supervisory duties including consulting with independent auditor, certifying the quality of financial statement and reporting, appointment and termination of managers and creating and approving board's remunerations. With all the function specifications to the boards, it makes the board of directors as a vital internal governance mechanism in the company. However, board of directors also have been criticised for corporate failure, hiding the true nature of the firm performance and ineffectiveness in their fiduciary duties (Beleya, Raman, Ramendren, & Nodeson, 2012). Following financial crisis and company's failure over the past decade, many researchers have raise up their concern on board effectiveness. Moreover, the owner and financial users have demand for transparency and accountability of financial information (Norwani et al., 2011), and consequently, the activities of managers should properly being monitored. Board diversity becomes interesting corporate governance tools as it was claimed able to improve such effectiveness. To date, it was very limited studies on board diversity brought into emerging countries.

3. Research Questions

Female representative on the board seem as important mechanism to protect shareholders interest and to promote the recruitment of females on the company's boards. However, there are mixed findings on

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female involvement on the boardroom and firm performance. Therefore, this study primarily aims to address this research question: is the presence of female directors on the board contributes to higher firm performance of the company?

4. Purpose of the Study

Gender diversity with female representation increase tremendously since female involvement on the board receives an attention of many countries (Kılıç & Kuzey, 2016). For instance, the female involvement must at least 40 percent on the board of directors in Norway, an emerging country (Randøy, Thomsen, & Oxelheim, 2006). This indicates that female involvement in the board able to protect shareholders interest as well as promotes the recruitment of females on the company's boards. However, there are mixed findings on female involvement on the board and firm performance. Hence, this study aims to examine the impact of female involvement on board of directors and firm performance of listed industrial companies in Malaysia. Next, this study also aims to investigate the controlling effect variables of directors' remunerations, board duality, board size, independent outside director and firm size to see the impact on firm performance.

5. Research Methods

The initial sample of this study comprises listed industrial companies at the Bursa Malaysia for the year 2016. The industry companies were chosen because it represent as the leading industry in Malaysia which was responsible for 41.6 percent of Malaysia's Gross Domestic Product (GDP) since year 2010. From the initial sample, the company which annual report is not available under the period of study was excluded. The companies with missing data and information are also excluded from the analysis. After removing all missing data and outliers, a final sample of 214 firm's year observations for the year 2016 used in this study. The financial data was obtained from Thomson Reuters database, while board-related variables of the companies were manually collected from the company's annual report.

5.1. Measurement of variables.

Dependent variables. There are variety of financial performance measures such as Tobin's Q, Return on Investment (ROI), Return on Asset (ROA), Return on Equity (ROE) and Return on Sales (ROS). This study used accounting-based measures of profitability to proxy firm performance such as, the ROA and the ROE. These profitability ratios are commonly used to measure the company's ability to generate earnings and provide returns to their shareholders. The ROA is measured by the contribution of net income over total assets (Ismail, Yabai, & Hahn, 2014). The ROA is used to measure firm performance because it is an indicator of profitability of the company and determine the management's ability in managing the corporate assets. Next, the ROE is measured by the contribution of net income over shareholders' equity. The ROE is used as it is indicate the efficiency of shareholders invest their capital in the company (Hamid, Abdullah, & Kamaruzzaman, 2015; Shubita & Alsawalhah, 2012).

Independent variables. This study used director's diversity to see the effectiveness of the boards in relation to firm performance which is proxies by three independent variables which is first, dummy

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variable coded as 1 if the CEO is female and 0 otherwise. Second, the proportion of female directors on the board, calculated as the number of total female director divided by the total number of directors on the board. Third is the Blau index, to measure board gender diversity (Blau, 1977). The Blau index takes the maximum value when the proportion of each category is at a maximum, ranges from 0 to a maximum of 0.5:

$$1-\sum_{i=1}^{n} P_i^2$$

Where, P_i is the percentage of the board members in each category and n represents the number of categories used.

Control variables. Directors' remuneration measured by all major components paid to both executive and non-executive directors' such as salary, bonuses, fees, and benefits-in-kind. Directors' remuneration is one of the motivation mechanisms for the directors in order to help their company achieve, maintain and driven board motivation to improve firm value. Several studies found that higher remuneration paid to the board of directors leading to higher financial performance (Lee & Isa, 2015). On the other hand, other studies found a negative relationship between board remuneration and firm performance (Hassan & Theo, 2003). A week relationship between directors' remuneration and firm performance due to prevailing of corporate governance structures in Malaysia which differs to Western economies.

Board size is measured by the total number of the directors on the board (Kumar & Singh, 2013). The smaller board members are more efficient at controlling the management and larger boards may reduce the discretionary power among the managers. Board size is also importance board structure mechanism in maintaining firm performance (Kumar & Singh, 2013). Having large board members in a boardroom might assist in problem solving as many members have different qualification and background. Supported by Coles, Daniel, and Naveen, (2008) mentioned that larger boards with more independent directors increase in high-complex firms as compared to their non-complex counterparts, because greater advising requirements which indicates that complicated firms needs more directors. Various researchers documented significant positive relationship between board size and firm performance (Coles et al., 2008; Ehikioya, 2009). Dehaene, De Vuyst, and Ooghe, (2001) shown an empirical evidence that board size are positively related to company size by affecting company's performance and differ significantly across industries. On the other hand, numerous studies found a negative relationship between board size and firm value (Cheng, 2008; Guest, 2009; Kumar & Singh, 2013) indicates that larger number of directors create problems in communication and coordination among board members resulting to higher agency cost (Cheng, 2008), higher level of conflicts, difficulties in coordination of the company and poor decision-making process which resulting to board inefficiency (Goodstein, Gautam, & Boeker, 1994).

Next, board duality referred to the person who has two roles in the company (Yang & Zhao, 2014). The presence of board duality occurs when the CEO also holds the position of the chairman of the board. This study used dummy variable coded as 1 if CEO and Chairman are two different persons and 0 otherwise. Dehaene et al., (2001) found a significant positive relationship between composition of the board which practice the combination of the function of CEO and chairman with firm performance indicates that the

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ROA was increased after applying CEO duality. Yang and Zhao (2012) suggest that board duality lead to effective company management in high competitive business environment. In contrast, dominant power due to CEO duality also contributes to poor firm performance. For instance, Tang (2017) found inverse association between board duality and firm performance.

The independent directors have been referred to independent outside directors. Generally, the presence of independent outside directors will reduce the discretionary activities of managers. Therefore, the independent outside directors in the board able to enhance the effectiveness of management and reduce the conflict of interest between managers and shareholders thus foster the financial performance of the company (Kılıç & Kuzey, 2016). In this study, independent outside directors is measured by the proportion of independent directors to the total number of board of directors.

Lastly, the firm size is measured by the natural logarithm of total assets. Firm size is a typical determinant of firm performance. Larger firm is associated to higher performance as compared to their smaller counterparts due to higher market power (Smith et al., 2006).

5.2. Research models.

The main objective of this study is to understand the relationship between gender diversity and firm performance and the other corporate governance mechanisms on this relationship. I expect that gender diversity bring a significant impact on firm performance. Board diversity is proxies by three measurements; a dummy variable taking value of "1" if the CEO of the firm is a woman, the percentage of female directors on the board and the Blau index, a measurement of gender diversity. As for financial performance, accounting-based measure is used, which are ROA and ROE. The analysis is employed using ordinary least square to test the relationship between board diversity and firm performance. The regression models for testing hypotheses are as follows:

- $$PERF_{it} = \beta_0 + \beta_1 CEOWOMAN_{it} + \beta_2 BREM_{it} + \beta_3 BSIZE_{it} + \beta_4 BDUAL_{it} + \beta_5 BIND_{it} + \beta_6 FSIZE_{it} + \varepsilon_{it}$$
- $$PERF_{it} = \beta_0 + \beta_1 PWOMAN_{it} + \beta_2 BREM_{it} + \beta_3 BSIZE_{it} + \beta_4 BDUAL_{it} + \beta_5 BIND_{it} + \beta_6 FSIZE_{it} + \varepsilon_{it}$$
- $$PERF_{it} = \beta_0 + \beta_1 BLAUGEND_{it} + \beta_2 BREM_{it} + \beta_3 BSIZE_{it} + \beta_4 BDUAL_{it} + \beta_5 BIND_{it} + \beta_6 FSIZE_{it} + \varepsilon_{it}$$

Where;

$PERF_{it}$ = Percentage of net income to total assets (ROA); percentage of net income to total equity (ROE).

$CEOWOMAN_{it}$ = A dummy variable equal 1 if CEO is female in year *t*, and 0 otherwise.

$PWOMAN_{it}$ = Percentage of female directors on the board in year *t*.

$BLAUGEND_{it}$ = Blau index of gender diversity in year *t.*

$BREM_{it}$ = The natural logarithm of total remuneration of board of directors in year *t*.

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$BSIZE_{it}$ = The natural logarithm of total directors on the board in year *t*.

$BDUAL_{it}$ = A dummy variable equal 1 if a CEO and Chairman of the board are two different persons in year *t*, and 0 otherwise.

$BIND_{it}$ = The proportion of independent directors to the total directors on the board in year *t*.

$FSIZE_{it}$ = The natural logarithm of total assets in year *t*.

6. Findings

6.1. Descriptive statistics.

The summary of descriptive statistics of the variables is shown in Table 01. The ROA presents a high variation which is ranging from -71.00 to 71.00 percent with average value is 1.2, while the mean value of the ROE is 0.25. The average number of female directors on the board is 0.38, ranging from no presence to a maximum of three persons on the boards. A CEOWOMAN is a dummy variable, taking the value of 1 if the CEO of the company is a female and 0 otherwise. As for PWOMAN, the percentage of female directors on the board not much varies in Malaysian industry companies, shows the minimum value is 0.00 percent and maximum value is 0.33 percent with the percentage of female directors on boards is 0.06 percent which indicates that the level of female involvement in Malaysian industry companies is low. The mean value of the BLAUGENDER, the Blau index of the sample companies is 0.41. The result shows that the average score of BREM is amounted to 6.26 thousand. The average score for number of board of directors of sample companies is 7.26, ranging from 4 members to a maximum of 13 members on the board. BDUAL is a dummy variable taking the value as 1 if the CEO and Chairman are two different persons and 0 otherwise. Moreover, BIND, the average percentage of independent directors on the board reveals 0.48 percent, ranging from 0.22 percent to a maximum value is 0.80 percent. The FSIZE shows the average value of 8.49 for industrial companies in Malaysia. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity and multicollinearity. The result shown in Table 02 assures that there is no threat of multicollinearity among the independent variables, as all the correlations value are less than 0.50.

Table 01. Descriptive statistics

Variables	Mean	Std. Deviation	Minimum	Maximum
ROA	1.20	13.63	-71.00	71.00
ROE	0.25	31.05	-190.00	209.00
WOMANBOARD	0.38	0.591	0.00	3.00
CEOWOMAN	0.02	0.151	0.00	1.00
PWOMAN	0.06	0.082	0.00	0.33
BLAUGEND	0.41	0.177	-0.44	0.51
BREM	6.26	0.421	4.88	7.52
BOARDSIZE	7.26	1.688	4.00	13.00
BSIZE	0.85	0.100	0.60	1.11
DUALITY	0.88	0.322	0.00	1.00
BIND	0.48	0.117	0.22	0.80
FSIZE	8.49	0.602	4.71	10.62

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Notes: ROA: return on assets; ROE: return on equity; WOMANBOARD: number of woman directors on the board; CEOWOMAN: takes a value of 1 if a CEO is female, and 0 otherwise; PWOMAN: percentage of female directors on the board; BLAUGEND: Blau index of gender diversity; BREM: natural logarithm of total remuneration of board of directors; BOARDSIZE: number of directors on the board; BSIEZ: natural logarithm of total directors on the board; DUALITY: takes a value of 1 if a CEO and Chairman of the board are two different persons; BIND: proportion of independent directors to the total directors on the board; FSIZE: natural logarithm of total assets.

Table 02. Correlation coefficients

Variables	1	2	3	4	5	6	7	8	9	10
1. ROA	1									
2. ROE	0.482***	1								
3. CEOWOMAN	0.065	0.042	1							
4. PWOMAN	0.017	-0.041	0.197***	1						
5. BLAUGEND	-0.044	-0.042	0.052	0.187***	1					
6. BREM	0.092	0.029	-0.138**	0.027	-0.299***	1				
7. BSIZE	0.114*	0.103	-0.064	-0.076	-0.704***	0.428***	1			
8. BIND	-0.105	-0.026	-0.060	0.006	0.223***	-0.172**	-0.406***	1		
9. DUALITY	0.046	0.151**	0.056	-0.105	0.112	-0.041	-0.115*	0.119*	1	
10. FSIZE	-0.018	0.169**	-0.050	0.133*	-0.215***	0.498***	0.293***	-0.006	0.105	1

Notes: ROA: return on assets; ROE: return on equity; CEOWOMAN: takes a value of 1 if a CEO is female, and 0 otherwise; PWOMAN: percentage of female directors on the board; BLAUGEND: Blau index of gender diversity; BREM: natural logarithm of total remuneration of board of directors; BSIZE: natural logarithm of total directors on the board; BIND: proportion of independent directors to the total directors on the board; DUALITY: takes a value of 1 if a CEO and Chairman of the board are two different persons; FSIZE: natural logarithm of total assets,***. Correlation is significant at the 0.01 level; **. Correlation is significant at the 0.05 level; *. Correlation is significant at the 0.10 level.

6.2. Regression analysis.

In this study, three proxies used to measure gender diversity as the independent variables, first, CEOWOMAN is a dummy variable for which 1 represents a CEO is a female and 0 otherwise, second, PWOMAN is the proportion of female director on the board, and BLAUGEND is an index used to measure gender diversity. Table 03 presents the regression analyses results which include the impact of CEOWOMAN, PWOMAN and BLAUGEND on firm performance. First part analysis, the ROA was used as the dependent variable, and the second part of the analysis, the ROE was used to measure firm performance. The ordinary least squares (OLS) methodology was employed to test the hypotheses. The impact of CEOWOMAN, PWOMAN and BLAUGEND on ROA is provided in Table 03. Based on the result, board diversity variables are not significant with firm performance.

This study also analyses the impact of board gender diversity on the ROE. The impact of CEOWOMAN, PWOMAN and BLAUGEND on ROE is provided in Table 04. Accordingly, the result shows that board gender diversity are positive insignificant result with firm performance. In addition, DUALITY has a significant positive relationship with firm performance in each model with $p<0.05$. Similarly, FSIZE presents a significant positive impact on firm performance for each model with $p<0.05$.

Overall, the regression analysis results indicated that female directors have not significant impact on firm performance. This result is consistent with Rose (2007) found that no linkage between gender diversity and firm performance. The findings did not supported the hypotheses of this study (H1a, H1b and H1c). Thus, board gender diversity in the boardroom has not influence on the firm performance. The findings also did not support prior studies such as Kılıç & Kuzey, (2016), Erhardt et al., (2003) and Liu et al., (2014) which found significant positive impact between gender diversity and firm performance.

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Table 03. Regression analysis results: impact of CEOWOMAN, PWOMAN and BLAUGEND on ROA

Variables	**Model 1**	**Model 2**	**Model 3**
CEOWOMAN	0.066 (0.295)		
PWOMAN		0.074(0.525)	
BLAUGEND			0.045(0.550)
BREM	0.035 (0.198)	0.032(0.240)	0.032(0.246)
BSIZE	0.120 (0.287)	0.125(0.272)	0.173(0.244)
BIND	-0.064 (0.471)	-0.071(0.421)	-0.068(0.442)
DUALITY	0.031 (0.292)	0.036(0.235)	0.032(0.282)
FSIZE	-0.023 (0.206)	-0.025(0.185)	-0.023(0.220)
Constant	-0.112 (0.518)	-0.086(-0.501)	-0.155(0.454)
F-Stat	1.358(0.241)	1.382(0.232)	1.303(0.264)
Adjusted R^2	0.008(0.267)	0.005(0.328)	0.004(0.332)
R^2 Change	0.032	0.032	0.030

Notes: CEOWOMAN: takes a value of 1 if a CEO is female, and 0 otherwise; PWOMAN: percentage of female directors on the board; BLAUGEND: Blau index of gender diversity; BREM: natural logarithm of total remuneration of board of directors; BSIZE: natural logarithm of total directors on the board; BIND: proportion of independent directors to the total directors on the board; DUALITY: takes a value of 1 if a CEO and Chairman of the board are two different persons; FSIZE: natural logarithm of total assets,***. Correlation is significant at the 0.01 level; **. Correlation is significant at the 0.05 level; *. Correlation is significant at the 0.10 level; Dependent variable is ROA measures performance; Instrumental variable is CEOWOMAN (Model 1), PWOMAN (Model 2), BLAUGEND (Model 3).

Table 04. Regression analysis results: impact of CEOWOMAN, PWOMAN and BLAUGEND on ROE

Variables	**Model 1**	**Model 2**	**Model 3**
CEOWOMAN	0.074 (0.600)		
PWOMAN		-0.151(0.564)	
BLAUGENDER			0.094(0.577)
BREM	-0.068(0.267)	-0.073(0.233)	-0.073(0.235)
BSIZE	0.329(0.194)	0.304(0.234)	0.444(0.182)
BIND	-0.034 (0.866)	-0.049(0.805)	-0.033(0.867)
DUALITY	0.136**(0.042)	0.133**(0.049)	0.136**(0.042)
FSIZE	0.088**(0.034)	0.093**(0.027)	0.089**(0.032)
Constant	-0.701*(0.073)	-0.672*(0.083)	-0.816*(0.080)
F-Stat	2.578**(0.028)	2.596**(0.027)	2.585**(0.027)
Adjusted R^2	0.033**(0.043)	0.033**(0.042)	0.033**(0.043)
R^2 Change	0.059	0.059	0.059

Notes: CEOWOMAN: takes a value of 1 if a CEO is female, and 0 otherwise; PWOMAN: percentage of female directors on the board; BLAUGEND: Blau index of gender diversity; BREM: natural logarithm of total remuneration of board of directors; BSIZE: natural logarithm of total directors on the board; BIND: proportion of independent directors to the total directors on the board; DUALITY: takes a value of 1 if a CEO and Chairman of the board are two different persons; FSIZE: natural logarithm of total assets,***. Correlation is significant at the 0.01 level; **. Correlation is significant at the 0.05 level; *. Correlation is significant at the 0.10 level; Dependent variable is ROE measures performance; Instrumental variable is CEOWOMAN (Model 1), PWOMAN (Model 2), BLAUGEND (Model 3).

7. Conclusion

This study aims to investigate the relationship between board gender diversity and firm performance in an emerging country such as Malaysia. This study used OLS regression analysis to investigate such relationship by using 2016 data from the listed industrial companies at the Bursa Malaysia. This study expected that companies with more gender-diverse boards demonstrate higher firm performance. The findings of this study however did not support the hypothesis that female directors significantly impacts firm performance. Thus, it concludes that, board gender diversity did not impacts firm performance, which

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is measured by the ROA and ROE. The findings do not provide evidence that there is an association between gender diversity and firm performance. In conclusion, female involvements in industrial companies are very limited and female representative in the boardroom not actively play their roles in board decision making process. The female representatives in the board not more than emblematical role or as a symbolic in governance practice. However, the female director's contribution towards corporate governance is still contradicted. The findings also confirm that male dominance largely remains on the boards of the Malaysian industrial companies. Moreover, the result also not supports that board gender diversity has significant impacts on firm performance. This result indicates that the number of female directors involvement on the board of Malaysian companies relatively small.

The findings regarding the association between gender diversity and firm performance may provide important implications for corporations, managers and shareholders. Moving forward, set a quota for female directors on the board may increase the number of female representative on the boardroom.

Several limitations of this study need to be addressed. This study only used one aspect of board diversity, which is gender. Therefore, other characteristics of board diversity such as age, experience and others should be considered. Moreover, there are very small number of female directors involve in this sample for the year 2016. Hence, future research agenda can re-examine the relationship of gender diversity and firm performance with bigger sample size.

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