Board gender diversity and firm’s performance in Malaysia:  
Does it matter?  
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Key words  
Gender diversity, Firm performance, Tobin’s Q, ROA, ROE, Corporate governance  

Abstract  
There is a growing body of literature that recognises the importance of women’s inclusion in a  
global context with respect to issues of board gender diversity and firm performance. The  
identification of positive firm-performance outcomes associated with a higher percentage of women in  
corporate boards is likely to influence employer’s willingness to adopt programmes and policies that  
develop and retain women who aspire for management positions. Backed by corporate governance,  
there has been a pivotal trend which has led to women holding board positions, but most boardrooms  
are still made up of male directors. The inconsistent findings of past gender diversity research demand  
a research framework that could address the requirement for gender diversity on corporate board. The  
current study aims to investigate companies listed on Stock Exchange in Malaysia. Data was gathered  
from listed companies in Malaysia Stock Exchange from the year 2011 to 2017 and were analysed  
using panel data analysis. The historical cost accounting approach and the future market approach  
using ROA, ROE and Tobin’s Q were applied in this study. The study offers important insights into  
the requirement policy for gender diversity and serves as a new platform of gender diversity research  
in Malaysian corporations board.  

Introduction  
Corporate governance is a system of rules, for companies to follow in order to ensure that a fair and  
transparent business process is adhered to. In recent years, corporate governance issues have received  
considerable critical attention. According to Zinkin (2010), corporate governance matters because  
investors are vulnerable to conflicts of interests between management and the board, and decision-maker  
incompetence. Therefore, board composition and structure are crucial in establishing good corporate  
governance as the board’s primary responsibility is to determine the organization’s purpose and it is the  
responsibility of the management to deliver this purpose. The importance of gender diversity in board  
structure has been said to have an influence in the economic and social performances of companies.  
Schwab et al. (2016) have revealed that positive firm-performance outcomes has been associated with a  
higher percentage of women in management positions and therefore would likely give rise to the  
tendency of employer’s willingness to adopt measures that can result in women playing important roles in  
corporate boards.  

The progress of female representation study on corporate board has been presssing and critical to  
economic challenges. Carter et al (2003) reported that firm value amongst Fortune 1000 firms have a  
positive relationship involving the minority female representation on company boards and firm  
performance as measured by Tobin’s Q. Previous study in Spain by Carter, D’Souza, Simkins and  
Simpson (2010) reported that the positive impact of gender diversity on corporate board has led  
researchers to investigate the relationship between level of diversity and firm performance. Clearly, there  
are grounds for certain optimism in supporting good corporate governance in relation to gender diversity  
and firm performance. However, this does not mean what works in the Western countries should be  
adopted entirely by the Asian region. For example, a research of gender diversity in the Asian context,  
Marimuthu and Kolandaisamy (2009) found insignificant relationship between board gender diversity  
and firm performance using ROA and ROE over the 2000-2006 period. The structural and cultural
conditions of each segments must be considered. The rich cultural diversity together with social and political context in which businesses in the Asian region operate makes implementing good corporate governance more complicated, but not impossible.

It is often said that the coming decades will be the age for Asian businesses. ‘If our companies are to thrive, board diversity must become a centerpiece of our game plan’ (Deloitte 2016). The selection on Asian countries against Western countries in the same sphere is important as there are minimum studies carried out in Asian context. Furthermore, the corporate governance adoption in Asian countries are new as compared to the Western countries. Malaysia has been selected because it represents the Asian region well in terms of cultural diversity, which serves as the main avenue for such study to be conducted.

To that extent, this study aims to seek a new body of knowledge in the scope of gender diversity in Malaysian corporate boards and to understand the relationship between gender diversity and firm performances.

**Literature Reviews and Theory**

Literature in corporate governance has offered contradictory findings on the link between gender diversity and firm performance. Low, Roberts, and Whiting (2015) in their articles confirmed that high numbers of women seated on the board has contributed to the strong relationship between gender diversity and firm performance. However, they argued that further imposition of law by the government will degrade the value of the firm. This is since gender diversity is taken as tokenism. This is for countries where cultural resistance is very strong against women equality. Reguera-Alvarado, de Fuentes, and Laffarga (2017) extended the examination on the relationship between board gender diversity and economic results in Spain: the second country in the world to legally require gender quotas in boardrooms. As a result of that, they discovered that the firm performance has improved and that can only be justified by way of a mandatory law in a country. Spain has imposed a 40% gender quota on its listed companies since 2011, even though it is a country where women were least heard of. Darmadi and Darmadi (2013) on the other hand found that there was a negative impact on firm performance relationship with gender diversity, speculating familial relationship in Indonesia. This is one of the main differences between Asian and Western cultures, whereby Asian companies tend to have traditional appointment within its own family circle to ensure concentrated ownership. This is necessary as the founder of the listed companies do not want to dilute the control of their hard-earned efforts to outsiders as they know their business better. Therefore, the boardroom reality is different in the Asian context. Appointment of women to sit on their corporate board is usually tightly controlled to those who have close family ties with founding members of the company.

Many previous studies by the likes of Campbell and Mínguez-Vera (2008); Bonn, Yoshikawa and Phan (2004); Carter et al. (2003); and Erhardt et al. (2003) suggest that an increase in the number of women in boardrooms produces an important improvement of the company’s economic results. In contrast, there is another stream of research that finds a negative relationship between the number of female corporate board memberships and firm performance e.g., Carter et al. (2010); Adams and Ferreira (2009); Pelled et al. (1999); Shrader et al. (1997) and some articles found no relationship between the two variables e.g. Rose and Rose (2007) and Zahra and Pearce (1989). Nevertheless, according to the arguments of Joecks, Pull and Vetter (2013) a relationship between the two variables may be affected by the high or low number of women on corporate boards which invalidates their results.

The connection between good governance, gender diversity and firm performance has a long history in the literature see Post and Byron (2015); Gallego, Garcia and Rodriguez (2010); Adams and Ferreira (2009), Campbell and Mínguez-Vera (2008), Jackling and Johl (2009); Siciliano (1996). According to agency theory, boards are “information systems” that principals use to verify agent behaviour (Eisenhardt and Eisenhardt, 1989); (Hillman and Dalziel 2003). Agency theory argues that the role of a firm’s board of directors was to serve as a mechanism to monitor managers. As representatives of owners (principals) corporate boards were tasked with resolving agency issues by monitoring managers (agents) to ensure these managers act in the owners’ interests. The composition of boards of directors has been extensively analysed, often from the agency perspective and frequently focused on independence of its board members. In fact, one of the main goals of prior research has been to establish links between board characteristics and firm performance. In this agency framework relationship, the role of the board is to
ensure there is no conflict between the shareholders’ objectives in creating value of the firm against the management’s intention for higher compensation. Hence, gender diversity on corporate board will result in the agency cost being reduced as a diverse board will constructively allow the positions taken by the management to be examined from a perspective that does not reflect vested interest, thus raises the firm performance.

In addition to the variables associated with the presence of women in the boardroom, several control variables are included in this study following the recommendation of Campbell and Minguez-Vera (2008) and the research design of prior studies e.g. Haniffa and Hudaib (2006). First, we control the firm size throughout the variable InAssets, which is calculated as the natural logarithm of total assets. Second, following Adams and Ferreira (2009), we introduce the natural logarithm of revenue (InRevenue) and common equity (InC-equity).

**Methodology**

**Data and Sampling procedure**

The study is quantitative in nature and secondary data will be primarily used. The advantage of secondary data is access to international and cross-historical data and that it is less resource-intensive to collect compared to primary data. Secondary data is also considered to have a higher reliability.

For the purpose of this study, a sample of 9 nonfinancial firms and 63 observations were selected for the estimation process. The identities of directors were obtained from the firms’ annual reports. From these reports, the number of board members was calculated. Accounting data, such as the book value of total assets, total revenue, number of shares and share prices were also obtained from stock price website. We use Tobin’s Q as a proxy of firm value to measure the firm’s financial performance. Tobin’s Q is calculated using the sum of the market value of stock and the book value of debt divided by the book value of total assets. The sample were obtained from non-financial public listed companies listed on Malaysian stock market, a method adopted empirically from Lee-kuen, Sok-gee, and Zainudin (2017).

Data were collected from well-known financial resources and databases, such as Bursa Malaysia’s website. The data regarding corporate boards were manually collected by from each firm’s annual reports, and, since public firms have external requirements from authorities, the data is objective. There are observable differences between large cap, mid cap and small cap firms regarding gender diversity on the boards as well as firm characteristics. For these firms, data pertaining to board gender diversity were gathered through firms’ annual reports.

For this study purpose, the decision to only include large cap firms in the consumers products industry will be made. Additionally, financial firms and insurance companies have been omitted from the sample in accordance with previous research Campbell and Minguez-Vera (2008). The reason behind is that the financial measurements examined would be incorrect if financial firms were compared to non-financial firms since the capital structure to a large extent differ.

Listed companies’ sample to be examined in this study consists of firm-year observations from 2011 to 2017. The chosen time period is also of interest as it provides insight to the reactions from the external environment on the increasing focus of gender diversity on boards by the government of Malaysia since its maiden announcement in Budget 2011 to introduce a 30% target on corporate board to drive the diversity agenda. This length of time will provide insight as to whether a gender-diverse board has a positive effect on a firm’s performance. The seven-year period will show evidence as to whether there have been structural challenges for firms due to the push for diversity, and if the results have been positive or negative following this.

**Measures and Instruments**

The current study employed Tobin’s Q because it reflects the market’s expectation of the firm’s competitive advantage. Unlike accounting data that reflects only past performance, Tobin’s Q is more forward looking and portrays a firm’s future prospect, given the superiority of managerial control. The ROA is another measure of performance, which is computed by dividing profit before interest and taxes by the firm’s total assets. These two measures have been extensively used in prior research studies that investigate the association between board diversity and firm performance (e.g. Shrader et al. 1997; Erhardt et al. 2003; Rose 2007; Adams and Ferreira 2009). In fact, these measures, especially the ROA, are often
used by financial analysts and market when assessing a firm’s performance (Erhardt et al. 2003). The third model is using the ROE, another accounting measure of performance, which is computed by dividing profit before interest and taxes by the firm’s total equity.

To examine the relationship between gender diversity and firm performance, the following model is adopted from Labelle, Francoeur, and Lakhal (2015) to determine the relationship between board gender diversity and firm performance.

Where Performance = performance of firm i measured by:
Model 1 - Return on Assets (ROA);
Performance \(\mu_i = \alpha + \beta_1 PWomen_{it} + \beta_2 \lnC\text{-equity}_{it} + \beta_3 \lnRevenue_{it} + \epsilon_{it}\)
Model 2 - Return on Equity (ROE); and
Performance \(\mu_i = \alpha + \beta_1 PWomen_{it} + \beta_2 \lnC\text{-equity}_{it} + \beta_3 \lnRevenue_{it} + \epsilon_{it}\)
Model 3 - Tobin’s Q
Performance \(\mu_i = \alpha + \beta_1 PWomen_{it} + \beta_2 \lnC\text{-equity}_{it} + \beta_3 \lnAssets_{it} + \beta_4 \lnRevenue_{it} + \epsilon_{it}\)

PWomen represents board gender diversity computed as ratio of the number of women directors to the total number of directors for each firm. \(\lnC\text{-equity}_{it}\) is the common equity level for firm \(i\) at time \(t\), \(\lnAssets_{it}\) is the total assets level for firm \(i\) at time \(t\), and \(\lnRevenue_{it}\) is the total revenue level for firm \(i\) at time \(t\), all denotes the firm’s size for firm \(i\) at time \(t\).

Data Analysis

The current study employed the pooled ordinary least square (POLS) model in conjunction with the fixed effect model (FEM) and the random effect model (REM) for more robust estimations. The Breush-Pagan Lagrange Multiplier was used to decide the appropriateness of the random effect’s estimation over the normal OLS estimation. The rejection of null in the LM test shows the existence of heterogeneity in the variables, meaning that the use of OLS was not appropriate. Following this, the Hausman test was conducted to identify whether a correlation between unobservable heterogeneity and the explanatory variables exists. This test was used to test the correlation between the unique errors (Ui) and the regressors. The rejection of the null hypothesis favoured the fixed effect model in which unobserved heterogeneity and explanatory variables exist (Campbell & Minguez-Vera, 2008).

This study also employed panel data analysis, a tool used to analyse time series data and cross-sectional data. Data with variations both over time and cross-sectionally is more generalizable and informative compared to time-series data for one entity as there is more observations, more degrees of freedom and higher efficiency (Brooks 2008). Panel data are most useful when we suspect that the outcome variable depends on explanatory variables which are not observable but correlated with the observed explanatory variables. The study may face an endogeneity problem as it is hard to determine cause and effect. On one hand, female directors might affect firm performance positively, and on the other hand, it may be that females choose to be board members in the largest and most profitable firms, i.e past performance influence board diversity.

Findings and Discussion

<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWOMEN</td>
<td>n/a</td>
<td>n/a</td>
<td>0.4217757</td>
<td>1.177895</td>
</tr>
<tr>
<td>LnC-Equity</td>
<td>10.64773</td>
<td>13.33568</td>
<td>0.3866823</td>
<td>2.492935</td>
</tr>
<tr>
<td>LnAssets</td>
<td>11.24685</td>
<td>14.44386</td>
<td>0.641491</td>
<td>1.953173</td>
</tr>
<tr>
<td>LnRevenue</td>
<td>9.892275</td>
<td>15.58302</td>
<td>0.6393946</td>
<td>2.834284</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.391625</td>
<td>0.3040878</td>
<td>-0.8666718</td>
<td>5.98726</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.4916662</td>
<td>0.4780919</td>
<td>-0.3562031</td>
<td>4.622579</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>-0.052056</td>
<td>1.80703</td>
<td>0.0639568</td>
<td>4.374938</td>
</tr>
</tbody>
</table>
Notes: Tobin’s Q (approximation of Tobin’s Q), PWOMEN (percentage of women on the board of directors), LnC-Equity (logarithm of the common equity of the firm), LnAssets (logarithm of the book value of the total assets of the firm), LnRevenue (logarithm of the total revenue of the firm), ROA (return on assets), ROE (return on equity)

Descriptive Statistics
The sample for the study consists of 9 listed firms selected for the periods from 2011 to 2017. Annual data was collected from over this 7-year period; hence, it translates to 63 observations. Table 1 provides the descriptive statistics used in this study. The table depicts the minimum and the maximum value of each variable and standard deviation. The dependent variables are ROA, ROE and Tobin’s Q, and each of these dependent variables is regressed toward its explanatory variables.

The statistical characteristics for the tested variables are summarised in Table 1. Descriptive Statistics of variable indicates ROE minimum is -49.17% and maximum of 47.81%. ROA maximum of 30.41% and minimum of -39.16%. Tobin’s Q maximum of 1.81 times and minimum of -0.05 times. LnAssets ranging from 11.25% to 14.44%. LnC-equity ranging from 10.65% to 13.34%. Lastly, LnRevenue of the firms selected ranging from 9.89% to 15.58%.

Table 2: Results for women director on firm’s performance

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-2.140</td>
<td>-0.5627</td>
<td>-0.2406</td>
</tr>
<tr>
<td>β</td>
<td>(0.0001)***</td>
<td>(0.358)</td>
<td>(0.845)</td>
</tr>
<tr>
<td>PWOMEN</td>
<td>0.0542</td>
<td>0.0453</td>
<td>0.0267</td>
</tr>
<tr>
<td>z- value</td>
<td>2.11</td>
<td>1.04</td>
<td>0.28</td>
</tr>
<tr>
<td>p value</td>
<td>(0.004)***</td>
<td>(0.296)</td>
<td>(0.779)</td>
</tr>
<tr>
<td>LnC-Equity</td>
<td>0.1238</td>
<td>n/a</td>
<td>-0.3634</td>
</tr>
<tr>
<td>β</td>
<td>(0.005)***</td>
<td>(0.004)***</td>
<td></td>
</tr>
<tr>
<td>z- value</td>
<td>2.93</td>
<td>n/a</td>
<td>-2.86</td>
</tr>
<tr>
<td>p value</td>
<td>(0.005)***</td>
<td>(0.004)***</td>
<td></td>
</tr>
<tr>
<td>LnAssets</td>
<td>-0.2204</td>
<td>-2.78</td>
<td>2.75</td>
</tr>
<tr>
<td>β</td>
<td>(0.005)***</td>
<td>(0.006)***</td>
<td>(0.726)</td>
</tr>
<tr>
<td>z- value</td>
<td>5.47</td>
<td>4.12</td>
<td>-0.35</td>
</tr>
<tr>
<td>p value</td>
<td>(0.001)***</td>
<td>(0.0001)***</td>
<td></td>
</tr>
</tbody>
</table>

Model fit
R-squared 0.1426 0.3177 0.2015
BP-LM Test 70.22 39.21 25.38
Hausman test 11.08 4.3 3.36
Wald Chi Square n/a 18.73 19.89
F-Stats 9.93 (0.0001)*** n/a

Notes: *, **, *** Denote significance at the 10%, 5% and 1% levels, respectively. Standard errors are reported in parenthesis. Tobin’s Q (sum of market value of common equity and book value of debt divided by book value of total assets), PWOMEN (percentage of women on the board of directors). LnC-
Equity (logarithm of the common equity of the firm). LnAssets (logarithm of the book value of the total assets of the firm). LnRevenue (logarithm of the total revenue of the firm).

Table 2 presents the results from the multiple regression analyses. Model 1, 2 & 3 shows the results when female representation on corporate board is treated as a dummy variable. In Model 1, the dependent variable is the firm’s performance relationship with the presence of women on corporate board based on accounting measures ie ROA. In Model 2, we are using ROE instead as the accounting measures to the dependent variable. Finally, in Model 3, the dependent variable is the firm’s performance relationship with the presence of women on corporate board based on market performance ie Tobin’s Q.

Regression analysis indicates that R square is 14.26 % for Model 1, 31.77% for Model 2 and 20.15% for Model 3. Regression analysis for model 1 (ROA) indicates the coefficient for (PWOMEN) is significant at one (1) % level of significance (p=2.11), and (β=0.054). In terms of control variables, the coefficient for (LnC-equity) is significant at one (1) % level of significance (p=2.93), and direction is positive (β=0.1238). Consistently, (LnRevenue) is significant at one (1) % level of significance (p=5.47), and direction is positive (β= 0.1958). The effect of (PWOMEN) on ROE is not significant at conventional level (p=1.04). In terms of control variables, the effect of (LnAssets) on ROE is significant at one (1) % level of significance (p=2.87). Consistently, (LnRevenue) is significant at one (1) % level of significance (p=4.12), and direction is positive (β= 0.1928). Finally, the effect of (PWOMEN) on Tobin’s Q is not significant at conventional level (p=0.28). In terms of control variables, the effect of (LnAssets) on Tobin’s Q is significant at one (1) % level of significance (p=2.75). Consistently, (LnC-equity) is significant at one (1) % level of significance (p=2.86), and direction is negative (β= -0.3634). However, the effect of (LnRevenue) on Tobin’s Q is not significant at conventional level (p=-0.35).

In summary, findings indicate that when firm performance is measured using ROA, there is a significant relationship between the presence of women in corporate board and firm performance. However, there is no significant relationship between the two variables when measured using Tobin’s Q. These findings suggest that female directors create economic value, but the market discounts their impact. The same applies when there is additional injection of share capital to the firm, as the findings indicate that there is no significant relationship between the presence of women in corporate board and firm performance when measured using ROE. The conflicting results for the three performance indicators are informative of the different ways, by which societal perceptions towards women affect the relationships we studied.

Conclusion

Previous studies have concluded that gender diversity in the boardroom affect the financial performance of a firm either significantly, or otherwise. In Asia, it may result in a different scenario as the corporate governance application and acceptance in Asia is not as strong as in Western countries. To determine this, we investigated the effects of gender diversity on firm’s financial performance in Malaysia. Unlike previous studies done in Malaysia, this study used the three firm’s performance measures ie ROA, ROE and Tobin’s Q and nonfinancial firms listed on Bursa Malaysia for the period spanning from 2011 to 2017 on large cap only from the consumers industry section. Using the pooled ordinary least square model, the fixed effect model and the random effect model, we tested the gender diversity presence in the boardroom relationship with firm’s performance. We controlled the firm size by controlling the firm’s common equity, total assets and total revenue.

Our study found that there is a significant relationship between women presence in corporate board with the firm’s performance, as suggested by ROA. This is consistent with the findings reported by Shamsul Nahar and Ku Nor Izah (2013). Representation of women in corporate board of a firm is expected to contribute a different perspective, as well as a more comprehensive decision-making process, which is crucial for firm’s strategic manoeuvring of its future long-term performances and sustainability in business. However, based on our results, we failed to find any significant relationship between the presence of women on board and firm performance using Tobin’s Q and ROE. Our findings make an important contribution to the theory on the performance consequences of female directors on boards. The conflicting impacts, significantly affecting accounting performance when using ROA and failed to significantly influence market performance and ROE suggests that female directors are subject to a biased evaluation by the market and increase in capital injection, which undervalues their presence on boards.
The conflicting results of the two performance indicators speak for the importance of assigning theoretical meanings to performance indicators and treating them as indicative of different contextual characteristics. In view of the conflicting result, it can be argued that the advantages of having women on corporate board are not reflected in the measure of firm’s performance in totality, and as a result, may result in lukewarm acceptance by corporates board members to favour the female appointment in Malaysia. The discrimination of corporate women to be accepted in the corporate board may persist in the corporate governance landscape in Malaysia.

The issue of board diversity, especially gender diversity remains unsettled as the findings are not as expected. Perhaps, gender diversity is best measured by non-financial performance rather than financial performance. Perhaps, women representation on board may be conditional. Hence, one size may not fit all. Thus, future research may need to look at the importance of gender diversity on a different angle, such as perception behaviour of the market on gender diversity. Another limitation of this study is that the results are valid only in Malaysian firms. The study was carried out only on one industry with large cap listed on Bursa Malaysia and cannot be generalized to firms in other industry listed on the same stock exchange. Consistent with the research reported by Joecks, Pull and Vetter (2012), future research may look at firms in other industries with different level of women presence on corporate boards as firms should also consider the value of female directors with reference to the characteristics of the context in which they operate.

References


