Do Female Directors Manipulate Earnings?

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**Abstract**

This study aims to examine the effect of female directors in firm’s earnings management for a sample of 263 Malaysian listed firms over 2013-2017 period. After running a robust panel regression, the result of this study shows that firm that have higher participation rate of women in the boardroom will have a higher tendency of manipulating earnings. The reason why there is a significant relationship between female directors and earnings management might be caused by the corporate culture pressure on women. The findings provide insight for industry and policymakers on the impact of gender diversity on earnings management. It may serve as a guideline in their selection of the organization’s top management and decision-making process.

**Keywords:** Female directors, earnings quality, women on board, earnings management.

**Introduction**

The presence of female directors has become a globally used indicator of good corporate governance (i.e., Casey et al., 2011; Kirsch, 2018). The general perception of women’s characteristics is an obstacle for them to move up to a higher level on the work ladder. They are continually being questioned on their ability to manage the organization due to the general perception of their characteristics of being emotional, meticulous, and fussy. Besides that, cultural and social attitudes towards men and women indirectly contribute to the lacking of women involvement in the board of directors.

Niederle & Vesterlund (2011) argue that women tend to withdraw from competition for promotions while Matsa & Miller (2011) find that females tend to occupy the executive office suite for them to escape from work-life imbalance associated and stress. Their expertise limitation in a particular field of business also is one of the restrictions for them to move up the ladder to the boardroom.

Research findings on the relationship between the participation of female directors and firm performance have produced a different outcome. Certain studies found that women’s participation in boardroom contributes a positive result to firm performance. For example, Adams & Ferreira (2009) found that there is a significant
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positive relationship between gender diversity and return on assets. The result is in line with the univariate-test result, which indicates that there is a significant positive relationship between higher gender diversity in top management and a higher level of firm performance. This result is supported by research done by Lückerath-Rovers (2013) on firms in the Netherlands. He found that female directors perform better in terms of ROE than firms without females on their boards. Carter et al. (2010) show that gender diversity contributes positively to financial performance through firm financial performance and audit function. However, arguments arise that gender diversity could bring to conflict of different opinions and eventually could reduce firm performance. For instance, there is Wang & Clift (2009), who argue that a firm's financial performance has no substantial relationship with gender diversity. Carter et al. (2010) find that as there is a lack of talented females in a specific field, the positive effect of gender diversity is only applied for the female-exclusive work environment.

In regards to the association between female directors and earnings management, several attempts have been conducted with different research settings. For instance, non-trivial associations have been found in the UK (Arun et al., 2015), China (Ye et al., 2010), Korea (Kim et al., 2017), or Europe (Gray et al., 2015). Thus far, most of these empirical findings are based on OECD countries, and little is known about female directors and earnings management from Malaysia, notwithstanding a few recent studies (e.g., Abdullah & Ismail, 2016). Comparatively, this study is different from previous similar studies and covers the whole non-financial listed firms instead of certain industries or specific ownership like what Abdullah & Ismail (2016) did.

The majority of the board members in many corporations are occupied by the male (Brahmana & Chen, 2017; Krishnan & Parsons, 2008). With the dominance of males in the boardroom, yet, the earnings reporting issue does not seem to decline (Krishnan & Parsons, 2008). Business ethics literature such as Betz et al. (1989), Krishnan & Parsons (2008), or Gupta et al. (2019) surmise men are more likely to break the related administrative laws in order to benefit personally. With the stagnant numbers of female participation in the board room and increasing earnings manipulation cases, this research postulates the possibilities of the link between female directors and earnings management.

Females are different from the man in terms of leadership styles. Females show more significant concern for interpersonal relationships and rely on rules of fairness. They are said to be more emotionally oriented as compared to men in solving problems. It is well documented that in terms of attitudes towards ethics and risks, females are more risk-averse. Some studies relating gender to ethical value show that in terms of judgment and behavior, women are more ethical and will not tolerate illegal acts and fraudulent financial reporting (Kaplan et al., 2009; Miethe & Rothschild, 1994; O’Fallon & Butterfield, 2005). Female directors can bring a healthy balance to business where they complement men in management and served as internal monitoring by focusing on the ethical considerations in the board’s decision (Krishnan & Parsons, 2008). In turn, it may improve board monitoring as they can constrain earnings management more compared to the male counterpart.

Note that the participation of female directors in Malaysia, itself, offers a different perspective. In 2010, there are only 91 women (13.0 percent) served as a member of the board of directors in government-link companies as according to Central Bank of Malaysia analysis. As of November 2010, among 200 companies listed on the
Malaysia Stock Exchange, women only accounted for 7.6 percent of the participation rate of board members. The same scenario also exists in Malaysia's 100 largest domestic companies, where only 7.8 percent of its board members are women. Up to 2019, 15.4 percent of female directors on the board across listed companies in Malaysia.

This study attempts to give a clearer idea of the relationship between the woman on board and earnings management. In particular, this study aims to examine the relationship between the existence of female directors and earnings management within Malaysian listed companies. Female director has a significant influence on earnings management. Previous research such as Farrell & Hersch (2005) reveal that gender diversity has a significant relationship with higher financial performance. Erhardt et al. (2003) examine the same framework for 112 large US companies. They find a positive influence of board diversity on return on assets and return on investments. In a more particular research, (Singh & Vinnicombe, 2004) argue that female directors tend to take their roles very seriously in boardrooms. In turn, it leads to "more civilized behavior" and better governance. It is in line with the findings from Srinidhi et al. (2011), who find that firms with a higher proportion of female directors on the board have lower earnings management and higher earnings quality. They also find that females do not only have the characteristics of greater risk aversion and ethical behavior, but they are also doing well at obtaining voluntary information that helps them in reducing asymmetry information.

The argument of those previous research relies on agency perspective where managerial motives and incentives can significantly affect the quality of financial reporting of a firm. Empirical findings from Gavious et al. (2012), Kaplan et al. (2009), and Liu et al. (2016) confirm this postulation by presenting empirical findings about positive association between female directors and earnings quality. As such, an important determinant of earnings quality very much depends on managerial characteristics. The gender diversity within board members may affect the firm’s financial performance and corporate governance (Srinidhi et al., 2011). Hence, the following hypothesis is suggested:

H₁: Females directors have significant influences on the firms' earnings management.

Research Method
The sampling frame of this study is non-financial listed companies in Malaysia. The first criterion only took non-financial listed companies that actively traded from 2013 to 2017. We exclude financial industry because it is highly regulated and different nature of business. At first, the population size was 805 firms. In the end, total of the observations are 1841 firm-year from 263 firms with the 7-year observation period. This study took year-period (2013-2017) for two reasons. First, the data for the concomitant variation of female directors is started in 2013. Second, data availability is mainly provided in that particular year.

The financial data is obtained from DataStream. Meanwhile, the female director's data is retrieved from the annual report. The directors' list is sorted, sorted by gender, and calculated by taking the proportion of female directors. Therefore, we use the combination of cross-sectional data and time series data for the hypothesis testing. The panel regression is conducted to test all the variables.

This Research use the performance-augmented discretionary accruals model of Beneish (1999) to measure earnings management. Beneish (1999) model calculates a
percentage based on the absolute value of abnormal accruals. It is a proxy for the chance of earnings manipulation. The output of the model is an M-score that can be interpreted into a probability of involvement of activities of earnings management.

This approach is consistent with prior studies. It is considered to be more appropriate in accrual accounting systems and tax-oriented reporting regimes (see Bartov et al., 2000; Carter et al., 2010; Francis et al., 1999; Lee & Choi, 2002). Likewise, Healy & Wahlen (1999) state that earnings management occurs due to managerial judgment towards the accounting process. Managers find a loophole in the accrual accounting system for their financial reporting and structuring transactions. The purpose is to alter financial reports to either mislead some stakeholders about the company’s underlying economic performance or to influence contractual outcomes that depend on reported accounting numbers.

Beneish (1999) model is based on 5-variables. The formula is as follows.

\[
M\text{-Score} = -4.84 + 0.920 * DSRI + 0.528 * GMI + 0.404 * AQI + 0.892 * SGI + 4.679 * ACCR
\]

DSRI = Days sales in receivables index = \(\frac{\text{netAR}_t}{\text{Sales}_t} / \frac{\text{netAR}_{t-1}}{\text{Sales}_{t-1}}\)  

GMI = Gross margin index = \(\frac{\text{Sales}_t - \text{Cost of Goods Sold}_t}{\text{Sales}_t}\)  

AQI = Asset quality index = \(\frac{\text{Current Assets}_t + \text{netPPE}_t}{\text{Total Assets}_t} / \frac{\text{Current Assets}_{t-1} + \text{netPPE}_{t-1}}{\text{Total Assets}_{t-1}}\)  

SGI = Sales growth index = \(\text{Sales}_t / \text{Sales}_{t-1}\)  

ACCR = Total accruals = \(\frac{\text{IBE}_t - \text{CFO}_t}{\text{Total Assets}_t}\)  

Prior studies in earnings management such as Bartov et al. (2000), Carter et al. (2010) and Lee & Choi (2002) state that the basic factors that affect the practice of earnings management are firm size, firm’s profitability, growth, and leverage. These factors are set as the control variables in determining the level of earnings management in the sample firms. The primary relationship between earnings management and the control variables are written in a functional form as follows:

\[
\text{Earnings Management} = f(\text{Size},\text{growth},\text{Leverage})
\]

To empirically estimate the model above, we construct the multiple regression model as below is estimated:

\[
EM = \beta_0 + \beta_1 \text{SIZE}_{1,t} + \beta_2 \text{GROWTH}_{1,t} + \beta_3 \text{LEV}_{1,t} + \epsilon_{1,t}
\]

Where EM is Earnings management, SIZE, or firm size is a Log of assets, GROWTH is the ratio of a firm’s capital expenditure to sales.; and LEV is the Leverage Ratio, which is used to measure the ratio of debt to common share equity.

To answer the main research question, this study add the female directors (FEMALE) in the baseline model. Female directors treat as a main effect, meanwhile, the other regressors are the control variables. The estimation model is as follow:

\[
EM = \beta_0 + \beta_1 \text{SIZE}_{1,t} + \beta_2 \text{GROWTH}_{1,t} + \beta_3 \text{LEV}_{1,t} + \beta_4 \text{FEMALE}_{1,t} + \epsilon_{1,t}
\]

FEMALE is the total number of female directors to the total number of board directors. The percentage of female directors is used by many researchers in their research to represent the board gender diversity, such as Srinidhi et al. (2011).

\[
\text{Female directors} = \frac{\text{Total Number of Women on Board}}{\text{Total Number of Board of Directors}} \times 100
\]
Result and Discussion

The result of this study is based on the final sample of research after omitting companies with insufficient data and newly listed companies. The final sample consists of 263 Malaysia listed companies. All variables are presented by using ratio. The sample firms' board of directors consists of 0.087 women, on mean, and a range from 0 to 0.50. It implies that averagely 8.7% of board members in the sample are women within the period of 2013 - 2017. This data is consistent with the data provided by Bursa Malaysia, whereas there were around 10% of female directors in all listed companies.

Meanwhile, the mean value of earnings management is -1.38. Note that companies with M-score higher than -1.78 are likely to manipulate accounts. Data shows there was a good portion of the sample conducting the earnings management. Lastly, the control variables, such as firm size, leverage, and growth, are having 5.43, 0.55, and 2.07, respectively.

The standard deviation for earnings management is 2.850, while female directors are 0.112. Size, leverage, and growth show 0.550, 1.667, and 34.901 as their standard deviation, respectively. For the descriptive statistic, data is normally distributed especially female directors, size, and leverage. Meanwhile, the rest, such as earnings management and growth, has minor skewness. However, this research uses the logarithm approach to normalize the data to avoid the normality issue.

Table 2. displays the panel regression estimation of the model that serves as the baseline model in this context. The dependent variable is earnings management, while independent variables are the firm characteristic that consists of firm size, leverage, and growth. Female directors are not included in the regression. Heeding the recommendation of Baltagi (2015), it used White robust standard errors that control for heteroskedasticity errors, on top of firm clustering, year clustering, and industry effect that induce a within-firm serial correlation error structure.

The findings show that leverage has a significant relationship with earnings management at 1 percent if cluster the year and cluster the firm. However, firm size and growth show no significant relationship with earnings management. In terms of leverage, the regression result shows that there is a significant relationship between leverage and earnings management. The coefficient for leverage is 0.064, implying the increase of one-unit leverage will increase by 0.064 of earnings management.

The main hypothesis is that females directors have significant influences on the firms' earnings management. Therefore, we run the full model (estimation model [2]) under Fixed Effect panel regression. It is also based on White robust standard errors that control for heteroskedasticity errors, as well as firm clustering, year clustering, and industry effect that induce a within-firm serial correlation error structure. The dependent variable is earnings management, while independent variables are the firm characteristic that consists of firm size, leverage, growth, and female directors.

Table 1. Descriptive Result

| Variable   | Mean   | Std. Dev. | Min   | Max   |
|------------|--------|-----------|-------|-------|
| M-Score    | -1.381 | 2.850     | -7.703| 73.503|
| Female     | 0.087  | 0.112     | 0.000 | 0.510 |
| Size       | 5.434  | 0.552     | 4.294 | 7.622 |
| Leverage   | 0.555  | 1.667     | 0.000 | 45.019|
| Growth     | 2.072  | 34.901    | -45.603| 1073.790|

Source: Processed Data, 2019
Table 2. Baseline model

|                | Panel Regression Estimation of Model |
|----------------|--------------------------------------|
| SIZE           | 0.036 0.036 0.046 0.035 0.035         |
|                | (0.635) (0.635) (0.549) (0.5932) (0.593) |
| LEVERAGE       | 0.063** 0.063** 0.064*** 0.0256 0.026 |
|                | (0.010) (0.010) (0.001) (0.442) (0.442) |
| GROWTH         | 0.0002 0.0002 0.0002 -0.0001 -0.0001  |
|                | (0.569) (0.569) (0.594) (0.776) (0.775) |
| CONSTANT       | -1.679*** -1.679*** -1.734*** -1.652*** -1.652*** |
|                | (0.0001) (0.0001) (0.0001) (0.0000) (0.0000) |

|                | Firm Clustered Year Clustered Year Effect Industry Effect Adj R² |
|----------------|---------------------------------------------------------------|
|                | Yes Yes Yes Yes Yes Yes                                       |
|                | No No No Yes No Yes                                          |
|                | Yes No Yes No No Yes                                          |
|                | 0.230 0.230 0.219 0.202 0.204                                 |

Source: Processed Data, 2019

Note: The figures stated are the coefficient values and figures in parenthesis are the probability values. *, **, and *** denotes the significance level at 1%, 5%, and 10% respectively.

Table 3. reports the full estimation model of the panel regression. The results show that female directors significantly affect earnings management ($\beta = 2.211 \rho=0.0005$). These results mean that a higher portion of the women-on-board lead to a higher chance of earnings management. In economic terms, it can be interpreted as for the increase of one standard deviation from female directors. It leads to an increase of 0.2470 earnings management score ($2.211 \times 0.112$) or equal to 8.65% of earnings management standard deviation. Therefore, this research found that the higher proportion variance of female directors leads to the variance's increase in earnings management.

The results of the control variables indicate that all control variables have no significant effect on earnings management, except for the leverage. Table 3. reveals that higher leverage leads to higher earnings management, which is consistent with the findings in Table 2. Practically, the coefficient of 0.065 implies that the increase of one-unit leverage will increase by 0.065 percent of earnings management.

The presence females in the board room has the effect of increasing earnings management instead of mitigating it. The result provides an answer to the question of whether female directors have effects on the firm's earnings management. Furthermore, the result supports the hypothesis that female directors are significantly related to firms' earnings management. It is in line with the previous study by Kaplan et al. (2009), which shows that the firm's earnings are positively associated with gender diversity in senior management. Srinidhi et al. (2011) also stated that there is a positive relationship between the presence of female directors and the firm's earnings. This study does not conclude that those female directors create earnings management.
Table 3. Full Model

Panel Regression Estimation of Model

|        | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|--------|---------|---------|---------|---------|---------|
| SIZE   | 0.032   | 0.032   | 0.041   | 0.033   | 0.033   |
|        | (0.643) | (0.643) | (0.559) | (0.589) | (0.589) |
| LEVERAGE | 0.064*** | 0.064*** | 0.065*** | 0.037   | 0.037   |
|        | (0.007) | (0.007) | (0.007) | (0.209) | (0.209) |
| GROWTH | 0.0002  | 0.0002  | 0.0002  | -0.0003 | -0.0003 |
|        | (0.576) | (0.576) | (0.601) | (0.421) | (0.421) |
| FEMALE | 1.932*** | 1.932*** | 1.915*** | 2.211*** | 2.211*** |
|        | (0.0006) | (0.0006) | (0.0006) | (0.0005) | (0.0005) |
| Constant | -1.813*** | -1.813*** | -1.859*** | -1.823*** | -1.823*** |
|        | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

Firm Clustered Yes Yes Yes Yes Yes
Year Clustered No No No Yes Yes
Year Effect No Yes Yes No No
Industry Effect Yes No Yes No Yes

N 870 870 870 870 870
Adj R² 0.172 0.172 0.182 0.272 0.277

Source: Processed Data, 2019

Note: The figures stated are the coefficient values and figures in parenthesis are the probability values. *, **, and *** denotes the significance level at 1%, 5%, and 10% respectively.

However, the significant effect from the portion of female directors implies that female directors share similar agency issues like male directors. The participation of females in the boardroom can be treated as a solution for earnings management, it is described in the results that the existence of female directors does not lead to decreasing earnings management.

The result of this study shows that a firm with a higher participation rate of females in the boardroom will have a higher tendency of manipulating earnings. One of the reasons is the pressure on females when they run the company. According to The International Labor Organization (ILO), higher performance standards are often expected from females. It is challenging for females to get a seat in the boardroom. Thus, to secure the position, female directors see earnings management as a tool to stay on with the high position (Mínguez-Vera & López-Martínez, 2010). Another explanation is about ethical decision making. This results confirm the findings from Glover et al. (2002), and Zalata et al. (2019). The jargon of women’s emancipation has brought up another ethical issue in organizations. Female directors, like male directors, are more likely to behave unethically in business to achieve their goals. Gender factor does not play as a key factor in ethical behavior in an organization (Zalata et al., 2019). No matter what is gender, female or male, the financial misreporting will take place as part of the agency problem (self-interest).

In terms of contingency theory, if the shareholder wants to secure their earnings, they should work on the board structure related to the number of board members (Donaldson, 2014; Ghofar & Islam, 2015). In a study conducted by Chong...
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(2006), earnings management is seen as a logical result of the flexibility in financial reporting options. It is not considered as a bad financial reporting option provided the management uses earnings management to establish a stable financial performance by using acceptable and voluntary business decisions. Adams & Ferreira (2009) supported the view. They surmise that female directors could believe that to protect the firm from the consequences of unforeseen events when contracts are rigid and incomplete; earnings management might be seen as a useful way of doing so.

However, the result of this study is not consistent with (Adams & Ferreira, 2009; Gavious et al., 2012). For example, Gavious et al. (2012) conduct a study on Israel high-technology firms listed in the USA. They find that the proportion of women in the boardroom will have lower earnings management. The study conducted by Adams & Ferreira (2009) in USA evidence that firms with a female on board are associated with better earnings quality and reduced earnings management practice. Wang & Clift (2009) also argue that the firm's financial performance has no substantial relationship with gender diversity.

The difference in the results obtained might due to different social roles played by females in different countries. Both studies are conducted in the USA that has a different context with Malaysia. Different cultures might contribute to the different outcomes of the research. Females are expected to play supporting roles instead of the leading role in Asian culture. In Malaysia, the issues of females' participation in top management only emerge in recent years. Although there is a low rise in the participation of females in the boardroom, males continue to dominate the board of directors (Lückerath-Rovers, 2013). It indicates that it is hard for sole female directors to be heard and to convince male directors of her viewpoint on top of other reasons, such as financial reporting may depend on managerial motives and characteristics. It may explain why, instead of mitigating earnings management, the participation of female directors enhances earnings management.

Conclusion
This research aims to investigate the female director’s effects on earnings management. Using robust panel regression, we reveal that a higher portion of female directors leads to the tendency of earnings management. The contribution of this research leads to the implication for Contingency theory, whereby it investigates how the female's role in the boardroom affects the board's ability to protect shareholders' interest in the level of earnings management. The findings show that females are one of the essential contingency factors in the efforts of mitigating earnings management.

Practically, this study provides insight for industry and policymakers on the impact of gender diversity on earnings manipulation. The findings may serve as a wake-up call to investigate the effectiveness of governance structure in enhancing earnings predictability in emerging countries. The finding can be used practically for policymakers, such as the Malaysian government, as the finding shows that an increase in the portion of female in the boardroom has the effect of rising earnings management. The government always emphasizes that the board of female directors has to be increased.

However, all of these findings need to be validated by further research with different research settings to verify some facts about certain characteristics embedded in these unique settings. The focus of this study has to examine the female directors
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It is limited to the scope of study where it limits into non-financial listed firms in Malaysia. A few extensions can be further built upon the scope of analysis. First, more in-depth insights can be gained through an examination of the possible differential effect of female directors from the financial industry perspective. Secondly, the board capital, such as networking, experience, and education, may give an interesting platform for the effects on earnings management. Lastly, some corporate governance attributes such as controlling shareholders, board monitoring, board personality, and board structure can be another interesting extension of study for this analysis.

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