

Board Gender Diversity Effect to Various Earnings Management Estimation Models

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ABSTRACT

This study examines the impact of board gender diversity across earnings management techniques. We employ the Generalised Method of Moments (GMM) technique to examine data gathered from Malaysian manufacturing companies' annual reports on Bursa Malaysia between 2016 and 2021. Our analysis is based on a sample of 1,290 firm-year observations. The presence of the female board was significantly influenced by the accrual earnings shown by Modified Jones, Kothari's model, and abnormal production cost earnings management. However, when the board consists of 30% women, only abnormal production cost earnings management, cash flow from operations and discretionary expenses were considered significant. The results of this study provide valuable insights to authorities, managers, and investors on the representation of women on corporate boards, as highlighted in the MCCG 2021 guidelines as a means of enhancing the implementation of earnings management.

Keywords: earnings management, board gender diversity, developing countries, Malaysia, manufacturing companies

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INTRODUCTION

Board gender composition has been a discernible surge in academic and regulatory attention over the past decade which highlighted the presence of females on board. It is intricately linked to the clarification of various functions and tasks of a well-diversified board (Mukarram et al., 2018). There has been a growing global movement to improve and enhance gender diversity in the corporate force which is driven by the acknowledged valuable contributions and qualities that women contribute to the table (Mathisen et al., 2013). The presence of female directors on the board is linked to a positive effect on various corporate outcomes, better performance, and informativeness of share prices (Gul et al., 2013; Srinidhi et al., 2011; Terjesen et al., 2016; Chen et al., 2018). A diverse and inclusive workforce performs twice faster decision making with better business decisions up to 87% (Larson, 2017). In recent years, gender diversity has increasingly received attention. There is a growing global consensus that having women on the board can enhance good governance and corporate decision making (Nguyen et al., 2020). Furthermore, prior literature on decision-making (Bilimoria, 2000), provides substantial evidence that female directors prefer collaboration and power sharing over male directors during board deliberations. On the other hand, female directors are more independent and have higher attendance rates compared to males (Adams & Ferreira, 2009).

Several countries have responded by introducing legislation requiring a minimum representation of female on board (Terjesen & Sealy, 2016). For example, Norway has a requirement that corporate boards to have 40% female representation and penalties given for non-compliance companies. In line with this, minimum female board representation of 25% and 40% has been proposed by Sweden and Spain, respectively. The European Union (EU) proposed a 25% female board presence target for large listed companies, in line with this move (Terjesen et al., 2009; Terjesen & Sealy, 2016). In Malaysia, the Malaysian Code of Corporate Governance (MCCG) encourages to have females on the board. It has made significant progress on gender diversity over the past 10 years because of the consistent efforts made by many stakeholders. Additionally, the Securities Commission of Malaysia also announced a three-year strategic plan to advance corporate governance priorities, and one of them is promoting gender diversity on the boards by achieving 30% women on the boards by 2020. The Malaysian

Code of Corporate Governance (MCCG) 2017 requires companies to disclose their gender diversity policy and expects large companies to have at least 30% women on the board. According to the Regional Analysis Report by Sustainable Stock Exchanges and International Finance Corporation, the listed companies in four emerging countries, Malaysia, South Africa, Nigeria and Kenya, have more than 20% females on the board. However, in Malaysia the 30% female on the board target is yet to be achieved. Hence, the 2021 updated MCCG includes recommendations and best practices, which had to emphasise again the composition of 30% women on the board.

The board's function is to ensure that corporate strategic objectives to deliver value to stakeholders are met. This requires them to bring diverse skills, such as superior monitoring skills on managerial behaviour, to reduce opportunism and encourage interest alignment (Mensah & Onumah, 2023). Board members with different characteristics add value to firm performance. For instance, personalities, beliefs, gender, qualifications and skills to bring to their board duties, which characteristics practically gender, may explain why the board has better monitoring skills, particularly concerning earnings management monitoring towards a firm's performance. Females on the board is recognised as an element of good corporate governance, including monitoring earnings management practices and improving the company's performance (Cumming et al., 2015; Nguyen et al., 2020). It is challenging for companies to manage the responsibility to ensure the improvement and maintenance of shareholders' wealth in a turbulent business environment. Due to poor performance, companies use many techniques to manipulate and present a positive image to shareholders and stakeholders on good financial performance. This practice is called earnings management (Purwanti et al., 2015).

Earning management is frequently defined as income smoothing, which has been the subject of various research in the past (Dechow & Skinner, 2000). This practice involves the use of accounting techniques such as expense manipulation, revenue recognition and asset valuation to manipulate the financial statements (Brigham and Houston, 2019). Income smoothing is done to present more constant earnings, according to Bell and Carcello (2000), the practice of it is due to the pressure from those who are interested in the organisation's financial and managerial performance. The practice of earnings management, either real or accrual-based, is critical in financial

reporting and has broad implications towards stakeholders such as investors, regulators, and the public. According to Roychowdhury (2006), real earnings management is defined as “departures from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing that certain financial reporting goals have been met in the normal course of operations”. Real earnings management reconstructing actual business activities and transactions, such as abnormal levels of production costs (ABPROD), abnormal levels of cash flow from operations (ABCFO), and discretionary expenses (ABDIS), to achieve the desired outcome (Roychowdhury, 2006). The ABPROD earnings management is when the company manipulates the production costs to achieve a desired level of reported earnings, which involves misrepresenting actual costs of the production process. According to Roychowdhury (2006), companies may offer price discounts to boost their sales, and only manufacturing companies can have inventory overproduction. This shows that inventory overproduction and cost manipulation can be used to manage a company’s earnings and avoid reporting losses (Dechow et al., 1995). ABCFO refers to significant changes expected or normal cash flow patterns of a business. Financial distress or mismanagement within a company indicates ABCFO practice, where the company struggles to generate sufficient cash from its core operations to meet its financial obligations (Brigham & Ehrhardt, 2019). In meeting the financial goals, management can control or adjust the discretionary expenses as it involves choices regarding the amount, time or classification of certain costs. The practice of ABDIS earnings management can artificially inflate or deflate a company’s reported earnings. Manipulating the expenses, such as research and development, employee training and advertising, influenced the financial statements to present a favourable financial position and meet specific targets (Ge & Kim, 2014).

Earnings management has become a significant concern over the last two decades, as it is a critical indicator of financial reporting quality (Ali & Kamardin, 2018). The rise of financial scandals and the failure of high-profile companies due to financial reporting fraud has elevated earnings management to the top of the priority list for many stakeholders who rely on accounting information data (Callao et al., 2014). The importance of transparency in financial reporting cannot be overstated since it is a critical defence against accounting scandals that have ruined corporate names and eroded investors’ trust. Notably, prominent incidents like Enron, WorldCom,

HealthSouth, Tyco, and Global Crossing (Khanna et al., 2015) serve as important reminders of the perils of disguised financial reporting practices. The leveraging of flexibility given by the accounting standards (Healy & Wahlen, 1999), gives the opportunity for corporate executives to adjust the reported earnings, which can impact bonuses and income tax liabilities (Yami et al., 2023). Financial reports are more than just a document; it is the primary source of information for investors and shareholders, and inaccuracies in the report limit the investor's capacity to make the best decisions (Xie et al., 2003). Therefore, effective corporate governance practices (Khanna et al., 2015) establish robust regulatory monitoring to enhance the transparency and accountability of financial statements (Yami et al., 2023). Measures are not only able to prevent corporate scandals but also instil investors' confidence and ensure the transparency and integrity of financial reports by mitigating the risk of earnings management. As a result, comprehending the subtleties of how gender diversity in the boardroom may influence decisions and strategies linked to profit management estimating models is critical. This study aimed to shed light on this essential aspect, providing insights into whether a relationship between gender diversity and earnings management exists. Hence, this study intended to add to the continuing debate on corporate governance, emphasising females on the board and promoting gender diversity in the boardroom.

Following this introduction section will be the literature review and hypothesis development. Next, the methodology section will highlight the sample firms, year of study, variable measurements, and the research design and models. The findings and discussion section will table the research results. Finally, the last section concludes the overall study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This study investigated the relationship between board gender diversity (BODGEN) and earnings management (EM). The literature review is to discuss empirical studies that are concerned with the association between BODGEN and EM.

Board Gender Diversity and Earnings Management

Better firm financial performance results from implementing good governance on board diversity (Zahid et al., 2019). The presence of women on a board increases oversight and improves overall board performance (Adams et al., 2009). Males are said to be more forceful and hostile than females (Terjesen et al., 2016), as females can deal with uncertainties and are more adaptable (Weick & Sutcliffe, 2011). According to Sarin and Wieland (2016), female directors have higher ethical behaviour than male directors. Therefore, female members have a better implementation of community values such as donations or having charitable events, compassion, empathetic thinking, confidence and benevolence, while maintaining a positive connection with stakeholders (Kohlberg, 1976).

According to Hassan and Marimuthu's (2018) research on Malaysian listed businesses, having a diverse board of directors significantly improves financial performance. According to Karim et al. (2023), gender diversity had a moderating effect on the association between ownership structure and corporate sustainable performance in Malaysia but not in Pakistan. Researchers suggested that Pakistan should reform their CG structure as the country's poor economic conditions result in a limited effect of ownership structure on corporate sustainable performance and a negligible moderating effect of gender diversity on the board. On the other hand, the presence of female directors on the board had a negative relationship with earnings management (Gavious et al., 2012; Nadeem et al., 2019; Mnif & Cherif, 2021). Having females on the board reduced earnings management as there is an accounting aggressiveness when they are on the board (Gavious et al., 2012).

Janssen (2019) showed that EM and gender diversity complement a company's performance. An influential monitoring role exists when females are on the board; there is no evidence that board gender diversity affects the earnings management strategy (Triki Damak, 2018). Suherman et al. (2021) also found that whether a company has a female board of directors in their study of 264 non-financial enterprises listed on the Indonesia Stock Exchange did not affect its effectiveness. Consistent with the findings of Masum and Khan (2019) and Trinchese (2021), there was no significant relationship between the gender diversity of a company's board and its

financial performance. However, it was argued that having just women on the board encourages higher EM in Vietnam, as having women on the board without any leading roles may result in less effective EM monitoring (Vuong, 2021). This is because having female directors without allowing serving or leading the board directly, they cannot monitor the board of directors (Zalata et al., 2019). Hence,

H1: Board gender diversity has a significant effect on Earnings Management.

METHODOLOGY

This study focussed on examining the influence of BODGEN towards EM. This study used the area sampling method with a focus on manufacturing enterprises. The population consisted of listed Malaysian companies on the Bursa Malaysia, and the sample consisted of all manufacturing firms. The sample size was 361 companies from 2016 to 2021. Companies with no annual reports and lacked information were excluded from this analysis, resulting in a final sample of 258 companies.

This industry is significant because the manufacturing sector contributes to the entire economy of Malaysia, making it a vital industry. According to the Malaysia External Trade Statistics (2021), the manufacturing sector was responsible for an impressively high percentage of Malaysia's total exports in 2021, equal to 86.6%. According to the Department of Statistics Malaysia, the manufacturing sector in Malaysia maintained its position as the second largest contributor to Malaysia's Gross Domestic Product (GDP) in the year 2020 (Department of Statistics Malaysia, 2021). This sector accounted for 22.3% of the total. According to the same analysis, the manufacturing sector has been one of the most resilient during COVID-19. It is projected to experience a moderate loss of 2.5% in 2020 when compared to the decline of 5.6% that the economy as a whole will experience. Hence, this study focussed on whether the existence and composition of females on the board in the Malaysian manufacturing sector practice earnings management.

Variables' Measurement

Earnings Management

In this study, the dependent variable was EM, which was obtained from the Refinitiv Eikon DataStream. EM was measured in this study utilizing both discretionary accruals and actual proxies, i.e. accrual-based and real-based earnings management. The Kothari Model and Modified Jones Model was employed in this study as the accrual-based earnings models. The Modified Jones model calculates non-discretionary accruals and residuals (Dechow et al., 1995). However, Kothari et al. (2005) underlined that when a company grows utilizing the Modified Jones model, there may be an increase in discretionary accruals. As a result, Kothari et al. (2005) incorporated the Return on Asset (ROA) in order to control any severe operating performance. As a result, the EM calculation for the Modified Jones and Kothari Model was as follows:

Modified Jones Model:

$$\frac{TACC_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{\Delta TA_{t-1}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + \varepsilon_t \quad (1)$$

Kothari Model:

$$\frac{TACC_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{\Delta TA_{t-1}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + \beta_4 ROA_{t-1} + \varepsilon_t \quad (2)$$

TACC_t is the total accruals computed as the company's net income before extraordinary items for the year less cash flows from operations divided by the company's total assets prior period, TA_{t-1} is the total asset prior period, which is t-1, REV_t is the firm's change in sales revenues in year t, and REC_t is the change in accounts receivables. PPE_t / TA_{t-1} is the firm's end-of-year property, plant, and equipment divided by TA_{t-1}, ROA_{t-1} is the return on assets prior period, which is earnings before extraordinary items scaled by lagged of total assets β₀ β₁ β₂ β₃ β₄ are estimated parameters,

and it is the residual or error term that represents this study proxy for discretionary accruals. are estimated parameters, and ϵ_{it} is the residual or error term that represents this study proxy for discretionary accruals.

In this study, apart from accrual earnings, the real-based earnings was used. As the managers tend to use the real based method in manipulating the earnings, this model was used as it has the power to measure the financial statements' preconditions or distortions (Roychowdhury, 2006). Companies are deemed to be engaged in actual earnings management. According to Baatour et al. (2017) and Roychowdhury (2006), earnings management is captured by three models of activity manipulation: abnormal level of discretionary expenses (ABDIS), abnormal level of cash flow from operations (ABCFO), and abnormal level of production costs (ABPROD). Earnings management takes place through these three models ABCFO, ABDIS, and ABPROD.

The ABCFO occurs when the companies boost their operating cash flow by providing high sales discounts or giving easy credit sales to their customers. The operating cash flow was calculated by:

$$\frac{CFO_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{S_t}{TA_{t-1}} + \beta_3 \frac{\Delta S_t}{TA_{t-1}} + \epsilon_t \quad (3)$$

As for ABPROD earnings management presents itself when companies falsify their reported cost of goods sold (COGS). The ABPRO was calculated as follows:

$$\frac{PROD_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{S_t}{TA_{t-1}} + \beta_3 \frac{\Delta S_t}{TA_{t-1}} + \beta_4 \frac{\Delta S_{t-1}}{TA_{t-1}} + \epsilon_t \quad (4)$$

Lastly, firms that engage in ABDIS are when firms manipulate their Research and Development (R&D) costs and Selling, General, and Administrative (SGA). Hence, ABDIS is calculated by:

$$\frac{DIS_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{S_{t-1}}{TA_{t-1}} + \epsilon_t \quad (5)$$

Board Gender Diversity

Board gender diversity data was gathered from the annual reports in the director's profile. It represents female directors on the board. Two proxies of board gender diversity were used in this study, which were denoted as 1 or 0, as 1 represented the appearance of female on the board (BODGEN1) (Green & Homroy, 2018) and 30% female on the board (BODGEN2) (Joecks et al., 2013). Hence, this study looked into the relationship of board gender diversity and EM.

Control Variables

Corporate governance and EM in previous studies frequently used firm size as the control variable. The firm size is determined as the natural logarithm (LN) of the company's total assets. Corporate governance compliance and company performance can all be influenced by firm size (Alipour et al., 2019; Yin & Wang, 2017). Furthermore, firm size is essential in deciding effective governance practices because larger firms perform better (Bhatt & Bhatt, 2017) because they can diversify their risks (Wahab et al., 2007). Sincerre et al. (2016) accounted for business size in their analysis because larger firms are more complex and may play a role in managing a company's earnings.

The study's control variable, firm growth, is essential to have under control because it is more effective than uncontrolled in identifying the presence of EM (Collins et al., 2017). If the variable is not controlled, the EM estimate could be biased. It is determined by comparing changes in revenue over prior sales (Christina & Alexander, 2019) and total assets over the prior year (Asgari et al., 2015; Debnath, 2017; Iqbal et al., 2015). Growth is critical since a growing firm will participate in more EM (Madhogarhia et al., 2009). This is the point at which it may result in moral hazard consequences, increasing corporate risk (Asgari et al., 2015). Additionally, depending on how management exercises accounting discretion, directors may utilise it to ensure that the interests of shareholders are compatible, which is why business growth is crucial to the management of firms (Gorganlidavaji & Vakilifard, 2014). According to the findings, EM and the firm's potential for growth were negatively correlated.

Higher levels of financial leverage are associated with a more notable tendency for enterprises to manage their profitability (Akhtar et al., 2021). According to Brahmana et al. (2018), an increase in leverage had no noticeable effect on earnings management, as there was no correlation between leverage and earnings management. Nonetheless, Sincerre's (2016) study found that businesses with a lot of leverage were likelier to alter their profits to break loan agreements. Dechow et al. (2000) stated that high-leverage corporations manipulated earnings downward to highlight the firm's financial issues and secure better contract renegotiations or higher terms to avoid a technical default. Leverage will be higher with more substantial ties. Moreover, firms exhibiting elevated levels of leverage are inclined to surpass debt agreements, so contributing to enhanced earnings management (Reyna, 2018). Leverage is hence under the control variable. Depending on how management applies accounting discretion, firm expansion is significant to ensuring that the interests of shareholders are aligned (Gorganlidavaji & Vakilifard, 2014). According to the findings, EM and the firm's potential for growth were negatively correlated.

Leverage was the final control variable in this study; it is a means through which the company can obtain debt funding. The total debt to total assets ratio calculates leverage (Alipour et al., 2019; Bose et al., 2018). Researchers found that companies with high leverage were incentivised to distort earnings to break the debt contract terms (Sincerre et al., 2016). Leverage is a significant study variable because, as Andrikopoulos and Kriklani (2013) discovered, environmental information disclosure was expensive, and the liquidity constraints of highly leveraged companies tended to negatively impact the amount of environmental information that must be disclosed.

Data Analysis

This study used panel data and multiple regression to control the firm characteristics and investigate the association between the variables. With the usage of Variance Inflation Factors (VIF), the issue of multicollinearity among independent variables was avoided. Ten or less is the acceptable average VIF (Yahaya et al., 2022; Yusoff et al., 2022).

The Wald test and the autocorrelation Wooldridge test were run to identify autocorrelation and heteroscedasticity issues. However, the Wooldridge test results for autocorrelation were not considered reliable for a short period. The data in this analysis was six years, from 2016 to 2021. As a result, the autocorrelation problem needed to be addressed when looking at short-panel data.

When estimating panel data, the aggregated Ordinary Least Squares (OLS), Fixed-Effect (FE), and Random-Effect (RE) models are typical estimation techniques. The OLS model assesses the relationship between dependent and independent variables. The OLS estimator is reliable, but it needs more effectiveness due to heteroskedasticity and autocorrelation in the data. As a result, experiments were done on the FE and RE models. A Hausman test was performed to ascertain which model was superior, the FE or the RE models.

Although the heteroskedasticity issues and autocorrelation can be resolved with the model-adjusted standard error, Wintoki et al. (2012) claimed that the endogeneity bias persists since the FE and RE models regulate the unobserved heterogeneity. The endogeneity problem is not addressed in the models, which are caused by time-invariant endogenous variables, measurement errors, and reverse causality, which occur frequently in finance research.

In order to address the concerns and enhance the precision of this investigation, it was determined that the generalized method of moments (GMM) estimation technique was appropriate for minimising errors, thereby controlling for endogeneity, autocorrelation, heteroskedasticity, and omitted variable biases. Therefore, this study used a valid methodology and instrument to ensure accurate and dependable outcomes. Sargen test was carried out to confirm the instrument's authenticity.

Empirical Model

To investigate the influence of BODGEN on EM, we used the following multiple regression model: The empirical models proposed in this study were as follows. The first model was on the influence of BODGEN on EM. The model was as follows:

$$EM = \beta_0 + \beta_1 BODGEN_{it} + \beta_2 SIZE_{it} + \beta_3 GRWTH_{it} + \beta_4 LEV_{it} + \epsilon_{it} \quad (6)$$

RESULTS

Data and Descriptive Analysis

The dependent, independent, and control variable descriptive statistics for the sample observations are shown in Table 1. The mean value of the dependent variable, accrual earnings management Modified Jones (AEMK), was 0.0122. The lower mean value for accrual earnings management Khotari (AEMK) was 0.0074, with a range of 0.1530 to 0.1981 and -0.1251 to 0.1721, respectively. The mean value of abnormal production costs (ABPRO) was 0.0132, with a range of -0.2992 to 0.3451, while the mean of abnormal operating cash flows (ABCFO) was 11.7858, with a range of 10.7201 to 12.5932. Consequently, abnormal discretionary expenses (ABDIS) had a range of -1.2494 to -2.6176, with a mean of -1.3042.

The independent variable in this study was board gender diversity with a mean value of 0.6983 and 0.1253 for BODGEN1 and BODGEN2 respectively. Based on this study, more than 50% of manufacturing companies had females on the board, however less than 15% manufacturing companies complied with MCCG on having 30% females on the board. It showed that the listed Malaysia manufacturing companies had gender diversity on board, however, did not achieve the 30% female on the board as pointed out in MCCG 2017 and MCCG 2021. This indicated the compliance of board composition was still lack in the manufacturing industries.

Finally, referring to the three control variables comprising firm leverage (LEV), firm growth (GRWTH), and firm size (SIZE), the mean value of natural log assets was 12.8922, ranging from 10.8190 to 16.1158. Growth (GRWTH) had a mean of 4.4207 and ranged from 2.5575 to 6.1030. The leverage ratio (LEV) of the listed manufacturing enterprises ranged from 0.0021 to 0.6120, with an average value of 0.1626. This suggested that the companies did not rely much on leverage.

According to Tabaschnick et al. (2013), normality is a necessary assumption that must be made before to analysis in order to guarantee the reliability and accuracy of tests. The variable's skewness and kurtosis can be used to determine its normalcy test with a high sample size (greater than 200) (Pallant, 2010). A logarithmic transformation was used in this study to make sure the variables regulated the skewness and kurtosis of the distribution. The outcome demonstrated that, in accordance with the general rule, the distribution of skewness and kurtosis was appropriate. According to Zikmund (2003), a normal distribution can have skewness and kurtosis values of zero and ± 3 , respectively. That is contingent on the sample size, though Kline (2005) stated that if the sample size was big, the normality assumption will be broken if the kurtosis value is greater than ± 8 and the skewness value is greater than ± 3 . Based on the result in this study the highest kurtosis was 6.1 and highest skewness was 2.2.

Correlation Analysis and Multicollinearity Test

The Pearson correlation matrix between the variables in the study is displayed in Table 2. To assess the multicollinearity assumption, the correlation matrix between the dependent and independent variables is presented in the Table. The results showed that BODGEN1 was significantly correlated against AEMK, ABPRO and ABCFO at the 5% and 1% significance level. On the other hand, BODGEN2 was significantly correlated will all EM except ABPRO.

A test of the variance inflation factor (VIF) showed the absence of multi-collinearity. The VIF was between 1 and 2 in this study. Moreover, the mean VIF of this study for BODGEN1 was 1.5 and BODGEN2 was 1.51, which is less than 10, indicating that perfect multicollinearity in the model was absent (Yahaya et al., 2022; Yusoff et al., 2022).

Board Gender Diversity and Earnings Management

The result as shown in Table 3 provides evidence that BODGEN1 was positive and significant at the 5% level with AEMJ, AEMK and ABPRO while negative and significant at the 5% level with ABCFO and ABDIS. It indicated that having females on the board does not ensure managers reduce the manipulate of EM. The practices of manipulating cash flow

and discretionary expenses were reduced when a female was on the board. However, the misinterpretation of actual production cost may lead when there was a female on the board. This might be due to the empathetic thinking of females (Kohlberg, 1976) to offer lower prices to stakeholders (Roychowdhury, 2006).

Positive and significant results were also found in the relationship of BODGEN2 with ABPRO and ABCFO, and negative significant results between BODGEN2 and ABDIS. However, there was no significance of BODGEN2, AEMJ and AEMK. Real earnings management is an attractive option compared to accrual-based EM (Roychowdhury, 2006). This is because real earnings management is less likely to be detected compared to the accrual-based method by external auditors (Cohen et al., 2008) or regulators (Roychowdhury, 2006). Hence, having 30% females on the board in manufacturing listed companies did not ensure any EM practices by the company.

The hypothesis in this study was partially supported. The appearance of females on the board has a significant relationship towards EM. However, when there is 30% of females on the board, it showed that the Modified Jones, Kothari model was insignificant.

Table 1: Descriptive Statistics of All Variables, N=1548

Variable	Denotation	Mean	Median	Min	Max	SD	Skewness	Kurtosis
Accrual earnings management Modified Jones	AEMJ	0.0122	0.0056	-0.1530	0.1981	0.0807	0.2711	3.1127
Accrual earnings management Kothari	AEMK	0.0074	0.0032	-0.1251	0.1721	0.0692	0.3823	3.0419
Abnormal production cost	ABPRO	0.0132	-0.0005	-0.2992	0.3451	0.1545	0.2058	2.8694
Abnormal operating cash flows	ABCFO	11.7858	11.8523	10.7201	12.5932	0.4563	-0.5804	2.973
Abnormal discretionary expenses	ABDIS	-1.3042	-1.2494	-2.6176	-0.3113	0.5306	-0.4683	3.1681
Board Gender 1	BODGEN1	0.6983	1.0000	0.0000	1.0000	0.4591	-0.8642	1.7468
Board Gender 2	BODGEN2	0.1253	0.0000	0.0000	1.0000	0.3312	2.2633	6.1227
Firm Size	SIZE	12.8922	12.7753	10.8190	16.1158	1.2574	0.5761	2.9843
Firm Growth	GRWTH	4.4207	4.4180	2.5575	6.1030	0.7724	-0.1260	2.8141
Firm Leverage	LEV	0.1970	0.1626	0.0021	0.6120	0.1604	0.7441	2.7720

Table 2: Correlations Coefficients

Variable	AEMJ	AEMK	ABPRO	ABCFO	ABDIS	BODGEN1	BODGEN2	SIZE	GRWTH	LEV
AEMJ	1.0000									
AEMK	0.8293***	1.0000								
ABPRO	-0.0359	0.1482***	1.0000							
ABCFO	-0.1907***	-0.0608**	-0.1106***	1.0000						
ABDIS	0.1341***	0.0309	-0.2253***	-0.0342	1.0000					
BODGEN1	0.0101	-0.0557**	-0.0987***	0.1107***	-0.0121	1.0000				
BODGEN2	-0.0543**	-0.0592**	-0.0148	0.1045***	-0.0565**	0.2488***	1.0000			
SIZE	-0.1207***	-0.1640***	0.1121***	-0.0901***	-0.2630***	0.0823***	0.1760***	1.0000		
GRWTH	-0.0246	-0.0661***	0.1023***	-0.2316***	-0.1453***	0.0065	0.0700***	0.6936***	1.0000	
LEV	0.0017	0.1551***	0.2267***	-0.0685***	-0.1170***	-0.0713***	0.0729***	0.1953***	0.1539***	1.0000

Note: *** significant at 1%, ** significant at 5%

AEMJ is the residual value of discretionary accrual by Modified Jones Model; AEMK is the residual value of discretionary accrual include ROA by Kothari Model; ABPROD is the residual value of abnormal production cost; ABCFO is the residual value of abnormal operating cash flow; ABDIS is the residual value of discretionary expenses; BODGEN1 is the existence of female on board; BODGEN2 is the 30% of female on board; SIZE is the natural log of total assets; GRWTH is the changes in total assets over the previous year total assets; LEV is the ratio of total liabilities to total assets.

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Table 3: The Relationship between BODGEN and EM

Variables	AEMJ	AEMK	ABPRO	ABCFO	ABDIS
BODGEN1	0.0356**	0.0295**	0.0646**	-0.0616**	-0.1979**
	0.0163	0.0143	0.0344	0.0309	0.1024
BODGEN2	-0.0536	-0.0135	0.0699**	0.1013**	-0.4114**
	0.0580	0.0221	0.0375	0.0517	0.1665
SIZE	-0.0908***	-0.0718**	0.0145	0.1062***	-0.0002
	0.0344	0.0298	0.0219	0.0302	0.0504
GRWTH	0.1558***	0.1446***	-0.0715***	-0.0311**	0.0172
	0.0529	0.0435	0.0260	0.0147	0.0281
LEV	-0.1301	-0.1265	0.5351***	-0.2285**	-0.3590**
	0.2337	0.2148	0.1515	0.1166	0.1696
Constant	0.4946	0.4925**	-0.0121	2.3654***	-0.4311**
	0.3308	0.2615	0.1996	0.2085	0.6061
Observations	1290	1290	1290	1290	1290
Groups/Instruments	18/258	17/258	26/258	28/258	27/258
AR(2)	0.1080	0.1940	0.2940	0.2140	0.2040
Hansen Statistic	0.1570	0.3990	0.0800	0.2580	0.3340
Prob > F	0.0020	0.0090	0.0000	0.0000	0.0000

Note: ***, **, and * significant at 1%, 5% and 10% significance level respectively.

DISCUSSION AND CONCLUSION

Compliance with good corporate governance can result in a beneficial outcome, with the primary benefit of reducing the tendency towards earnings management. Having a comprehensive, transparent, and understandable information on the company's financial performance, accounting policies, operations, and other non-financial reports builds stakeholders' trust. Companies that disclose information transparently are more likely to gain the trust of the shareholders, regulators and investors (Fuadah et al., 2022; Wong et al., 2023). Shareholders can make better decisions about whether to invest in or continue to invest with the company as the disclosure of financial information is clear and comprehensive (Nnko, 2023). Furthermore, a transparent disclosure will clarify what the market expects with the company's financial performance (Parks et al., 2023). The stakeholders' access to financial and non-financial information allows them to assess the company's risk factor and financial health. Engagement in earnings management activities will affect the company's performance and the trust of stakeholders. Moreover, earnings management is frequently related to dishonesty, where management interferes rather than shows accurate results for the company's good (Gustina, 2012). Furthermore, from the standpoint of moral ethics, something ethical must be based on honesty and cooperation. Most importantly, moral ethics has the characteristic of prioritising the interests of others or common interests over personal interests (Arita et al., 2021). Hence, earnings management practices should be avoided to enhance the company's performance and the trust of stakeholders.

The board of directors may influence the earnings management practices and affect the company's financial performance. Gender diversity is essential to reduce earnings management to ensure that companies have better firm performance (Mensah & Onumah, 2023). Implementing effective governance with diverse boards is linked to improved financial performance in companies (Zahid et al., 2019). This is where males exhibit more assertive and confrontational behaviors, while females are often seen as better at handling uncertainty and adapting to change (Terjesen et al., 2016; Weick & Sutcliffe, 2011). The presence of female directors on the board may reduce earnings management practices (Mnif & Cherif, 2021), potentially due to a less aggressive accounting approach when women are part of the board (Gavious et al., 2012). Based on other studies, having females on the board

reduced the practices of earnings management (Gavious et al., 2012; Nadeem et al., 2019; Mnif & Cherif, 2021). However, in this study, the relationship between board gender and earnings management had mixed results. Having females on the board may reduce or increase the manipulation of earnings. The result also supported the study of Triki Damak (2018), where when 30% of females were on the board, the accrual earnings management was insignificant.

The results of this investigation have applications. The first is to authorities or regulators since the board members' efficacy may guarantee the calibre of environmental information reported, and maintaining regulatory compliance is essential to avert legal problems and fines. Second, excellent environmental reporting may increase investors' and stakeholders' trust in morals of a business's. The board members' financial knowledge may improve the data's calibre. Finally, this study gives recommendations for businesses to consider while shedding light on corporate governance and environmental disclosure for academics and researchers.

In summary, we want to draw attention to the fact that board gender diversity and earnings management were the exclusive subjects of this study. There were certain restrictions that need to be understood. This study only analysed the sample of listed Malaysian manufacturing businesses. It did not generalise all listed companies in Malaysia. Subsequent investigations could concentrate on other board characteristics such as board competency, board independence and board tenure and broaden the scope of the analysis to encompass other industries. This is to offer more convincing proof of disclosure of Malaysian listed businesses and can be included in future studies.

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