

## Can female director on board curb earnings smoothening practices in Nigerian listed non-financial firms?

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<https://doi.org/10.33003/fujafr-2025.v3i4.233.264-279>

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### Abstract

**Purpose:** The corporate world has shown tremendous compliance with a corporate governance code of gender sensitivity in developed countries. The emerging markets of Africa, specifically, Nigeria, companies are under tremendous pressure to ensure flexibility in the management of their business board composition. Therefore, the purpose is to provide empirical insights on female board members mitigating earnings management, which plays a critical role in shareholder confidence and corporate firm performance.

**Methodology:** Covering a period from 2015 to 2024, of publicly listed 111 and after filter 76 non-financial firms used, this study adopted a panel dataset using fixed and random effects regression analysis to assess the relationship between female inclusion on board and earnings management.

**Results and conclusion:** Findings reveal that women on board are negatively and statistically significant associated with real earnings management as a result of lack of compliance to 30 percent of women representation on boards. This study is one of the first to provide thorough empirical support for the idea that female on boards composition mitigates earnings management practice in emerging markets and adopted all listed nonfinancial firms.

**Implication of findings:** Based on the conclusion, the study recommends that policymakers, company executives, and researchers to increase female on board to reflect corporate governance code of 30 percent for effectiveness and transparency on financial reporting quality.

**Keywords:** Corporate governance, Earnings management, Gender diversity, Female director, Real earnings management, Nigeria.

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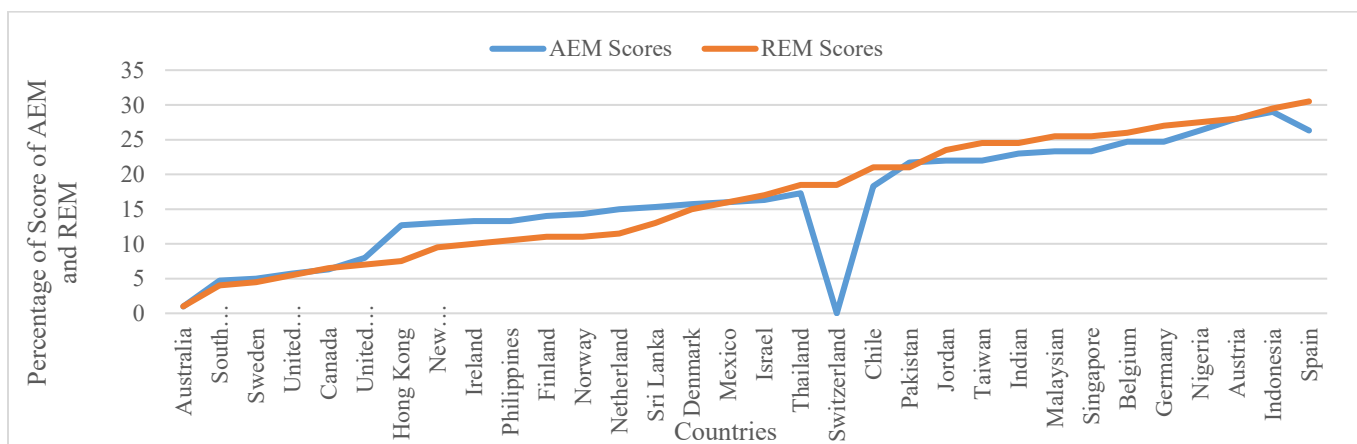
### 1. Introduction

The earning smoothening using real earnings management (REM) is an alternative of action executives and can be used to achieve their profit objective desired. It's a practice that goes against the company's regular operation to deceive some stakeholders into thinking about the firm's financial reporting targets during the routine operations (Rowchowdhury, 2006). Within the broader research literature, earnings management is widely understood as the deliberate manipulation of reported earnings, sometimes bordering on fraudulent financial reporting – with the aim of advancing the interests of one party at the expense of others. Earnings management is commonly classified into two distinct categories: accrual-based earnings management and real earnings management (REM). Accrual-based earnings management occurs when managers exercise discretion over accounting choices, estimates, or policies to alter reported earnings without directly affecting the firm's underlying cash flow (Dechow et al., 1995; Healy & Wahlen, 1999; Jones, 1991).

In contrast, real earnings management (REM) involves the deliberate alteration of reported earnings through the strategic timing or structuring of actual operating, investment, and financing activities. Unlike accrual-based methods, these actions directly impact the firm's cash flow and may deviate from optimal business practices (Roychowdhury, 2006; Gunny, 2010; Lenard & Yu, 2012). Although much of the earlier literature focused on the use of discretionary accruals for earnings management, managers can also achieve similar objectives through real operational decisions. Osma and Noguera (2007), for instance, found that boards with greater independence tend to manipulate earnings by adjusting research

and development expenditures. This illustrates that earnings management can occur across multiple dimensions of real activity. Numerous studies have investigated real earnings management, with particular emphasis on investment-related activities such as the timing or scaling of capital expenditures and R&D spending (Bartov, 1993; Bens et al., 2002; Bushee, 1998; Dechow & Sloan, 1991).

It is desirable to state that empirical studies on earnings management using both techniques (AEM and REM) have produced mixed results in non-financial firms. Some studies conclude that a positive link exists (Enomoto et al., 2015, Baatour et al., 2017; Almashaqbeh et al., 2019; Janssen, 2019; Suman & Singh, 2020). Some other studies concluded a negative association (Bzeouich et al., 2019; Chatterjee, & Rakshit, 2020; Orazalin, 2020). However, prior studies have investigated the issue of earnings management in selected Sub-Sahara Africa on single earnings management techniques (accruals) and ignoring the REM (Obigbemi et al., 2016; Mensah, 2021; Ndulue et al., 2021). Still non-financial firms in Sub-Sahara Africa countries practice earnings management more than several developed and other developing countries such as USA, Norway, Sweden, South Korea, Spain, Sri Lanka, Switzerland, Taiwan, Thailand, UK, Pakistan, Singapore, South Africa, and the Philippine. For example, Enamato et al. (2015) in their study reported that 39 countries are practicing earnings management using both AEM and REM (see. Figure 1) which revealed scores of countries, particularly Sub-Sahara African region (Nigeria) active in practicing AEM and REM.



**Figure 1: Earnings management (AEM and REM) scores for 39 countries**

In developing economies like Nigeria, far from being indifferent, the Nigerian government has demonstrated strong commitment to tackling weak corporate governance practices, viewing them as a major impediment to attracting foreign direct investment. A key initiative in this regard has been the joint establishment by the Securities and Exchange Commission (SEC) and the Corporate Affairs Commission (CAC) of a Code of Best Practices in Corporate Governance. The two regulators explicitly stated that companies adhering to internationally recognized governance standards are significantly more likely to attract global investors than those perceived to fall short of such benchmarks.

When managerial compensation is tied to reported financial performance, strong incentives emerge for managers to engage in earnings management in order to inflate results. In most firms, executive remuneration combines direct components (base salary plus performance-based bonuses) with indirect

benefits (enhanced reputation, future promotion prospects, and greater job security), all of which are typically contingent upon the firm meeting or exceeding predetermined performance benchmarks. Managers are inherently granted a degree of discretion in financial reporting. When this discretion is combined with compensation structures tied to reported earnings, the risk of agency problems increases significantly. Consequently, managers bear both ethical and professional responsibility to ensure that stakeholders receive reliable, high-quality earnings information that accurately reflects the firm's economic performance (Krishnan & Parsons, 2008).

The government has put in place specified mechanisms to be monitored by regulatory authorities and accountants to minimize the occurrence of earnings smoothening. However, dubious financial reporting of non-financial firms revealed that corporate governance code on board structure is still deficient. This code had spelled out the basis of best practice in corporate governance, according to the requirements for listed firms on the NGX. Hence, firms listed must establish an effective independent board composition for effective monitoring for mitigating earnings smoothening.

One of the main goals of this method is to boost investor confidence and improve the reliability of financial reports produced by companies. Under Nigerian corporate governance code of 2018 to enable the board to take on more tasks, more obligations are delegated to the board as mechanisms for control and minimize earning management manipulation incidences. The female directors on boards of directors have significantly increased in recent years, and gender equality is now a primary issue for policy makers and quality of financial reporting and academia (Shahab et al., 2020; Nguyen et al., 2020; Quartararo & Ruspini, 2021). Many European and non-European countries have taken important steps to improve the representation of women on boards, including requiring publicly traded companies (like Australia, Denmark, and New Zealand) to disclose their diversity policies and enacting laws requiring the appointment of a certain number of female directors to company boards (like Austria, Belgium, France, Iceland, Italy, Netherlands, Norway, Spain, Germany, India, and Malaysia).

As a result of the growing trend of female empowerment around the world and the board diversity initiative spearheaded by "The Big Three"<sup>1</sup> US institutional investors since 2017 (State Street Global Advisors, 2017), California became the first US state to mandate the presence of female directors in boardrooms in September 2018 when Senate Bill 826 was passed. Every publicly traded firm with its headquarters located in California is required to have a minimum of one female director by the end of 2019. Furthermore, by the end of 2021, these companies must have at least two female directors if the board consists of five people, and at least three female directors if the board consists of six or more people (2018).

While it is true that these regulations are in part motivated by the fact that having more women on boards of directors is consistent with the case for fairness (female director is an important member of the board of companies which represent equity and fairness). For instance, gender diversity board has some sort of practical benefit (Zalata et al., 2019b; Nicholls, 2020; Rosenblum, 2018). In particular, the business justification is based on the notion that gender diversity can boost the value of shareholders by ensuring that female directors provide effective monitoring. Similarly, numerous scholars argue that the presence of women on corporate boards should influence business performance in addition to being morally right (Zalata et al., 2019b; Poletti-Hughes & Briano-Turrent, 2019). Additionally, they argue that obligatory quotas are unnecessary if female directors simply increase the firm's economic worth, as this will naturally increase their participation on boards (Luo et al., 2017).

In the context of Bangladesh, it is particularly important to investigate whether the presence of female directors enhances transparency and accountability or constrains earnings management practices. To the best of our knowledge, no prior study has examined the relationship between female board representation and earnings management in Bangladesh. Corporate governance mechanisms are generally classified into two categories: internal and external. Internal mechanisms encompass ownership structure, capital structure, and board characteristics, whereas external mechanisms primarily involve the market for corporate control (Martin-Reyna & Duran-Encalada, 2012). This study focuses on female directorship in companies listed on the Dhaka Stock Exchange (DSE), Bangladesh. It examines the extent to which female board representation influences earnings management behaviour, with a particular emphasis on real earnings management (REM) practices in an emerging-market context. Specifically, we investigate the association between female directorship and REM by employing three independent variables: (1) the presence of at least one female director, (2) the proportion of female directors on the board, and (3) the presence and proportion of independent female directors.

This study contributes to the existing literature in two important ways. First, it provides fresh empirical evidence supporting the growing consensus that women in senior executive and board positions exhibit monitoring and decision-making behaviour largely indistinguishable from that of their male counterparts. Second, it offers a novel theoretical discussion of how gender biases in board appointment processes may distort the perceived effectiveness of female directors, thereby generating testable implications for future research.

The central policy and academic implication of our findings is that earlier evidence suggesting that female directors unambiguously improve board monitoring and reduce earnings management should be re-evaluated with caution. Such results may partly reflect discriminatory selection mechanisms (i.e., only exceptionally risk-averse or conservative women being appointed to boards) rather than inherent gender differences in behaviour. Our conclusions align with a stream of research showing that commonly observed gender differences in risk aversion, ethics, or leadership style tend to disappear or reverse among individuals selected into high-stakes, high-profile roles (Eagly & Johnson, 1990; Croson & Gneezy, 2009; Adams & Funk, 2012; Adams & Raganathan, 2015; Sila et al., 2016).

This study makes several important contributions to the literature. First, while the majority of earnings management research in developing countries has traditionally focused on accrual-based manipulation, the present study shifts the attention to real earnings management (REM), which remains significantly under-explored in the Bangladeshi context. Second, although Razzaque et al. (2016) examined the link between REM and family ownership, the role of corporate governance mechanisms – particularly board gender diversity – has been largely overlooked and left for future research. By explicitly investigating the relationship between female directorship and real earnings management, this study fills a critical gap in the extant literature on corporate governance and financial reporting quality in Bangladesh. This study utilizes an extensive panel dataset spanning 18 years (2000–2017) of publicly listed firms in Bangladesh. To enhance the robustness of the findings and to account for potential structural changes over time, the sample is partitioned into two distinct sub-periods. This research marks the first comprehensive, long-horizon examination of the relationship between female directorship and real earnings management in the Bangladeshi capital market.

Hence, female on board enhances financial reporting's integrity by lowering the likelihood and severity of fraud (Wang et al., 2022). Female directors are less likely to engage in misconduct, more risk averse and less overconfident, and more moral and less tolerant of managerial opportunism (Shahab et al., 2020;

Usman et al., 2022; Zalata & Abdelfattah, 2021;). As a result, increased representation of women on board positions enhances corporate governance procedures and limits earnings management (Gull et al., 2018; Zalata et al., 2022; Dobija et al., 2021). Therefore, evidence on female on board revealed a mix finding whether it can eliminate or not of earnings management manipulation. In the African region and specifically Nigeria, majority of the studies examines board diversity of female on board against financial performance, few used accrual-based earnings management (manufacturing companies) while real earning management largely ignored in nonfinancial companies and lacked empirical evidence due to paucity of literature which makes the choice of real based earnings management, as a surrogate for earnings smoothening.

Following the discussions, the focus of current research is to investigate if female on board curb earnings management in Nigeria. The study provide answer to the underlying issue: that does female representative mitigate real earnings management? Therefore, the study hypothesizes thus:

H1: Female inclusion on board can significantly curb real earnings management in Nigerian non-financial firms.

The idea that increasing board diversity with female representation on boards in particular could enhance the caliber of corporate governance has gained more attention during the last three decades. These studies (Fan et al., 2019; Zalata et al., 2019; Naaraayanan & Nielsen, 2020; Shahab et al., 2020; and Dobija et al., 2021) examined how the presence of women in boardrooms affected various aspects of firms' effectiveness. The outcome of their findings shows that there is a strong preposition that appointing additional female directors in a large number improve organizational wellbeing in curbing earnings smoothening. Compared to enterprises led by male CEOs, those with female CEOs have lower leverage and less volatile profitability (Faccio et al., 2016). The CEO's power to raise the danger of a stock price decline is diminished by female directors (Shahab et al., 2020). Their presence improves corporate occupational welfare and governance and raises the bar for sustainability reporting (Fine et al., 2020). Compared to their male colleagues, female directors exhibit greater independence and better attendance (Dang et al., 2020). They are more creative and risk-averse (Zalata et al., 2019b). Therefore, having more women on corporate boards increases profitability and increases the value of the company. It can also increase strategic control compared to their male counterparts, according to Dang et al. (2020), women have a unique cooperative leadership style that is more democratic, moral, transformative, communal, and participatory.

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Following the discussions, the focus of current research is to investigate if female on board curb earnings management in Nigeria. The study provide answer to the underlying issue: that does female representative mitigate real earnings management? Therefore, the study hypothesizes thus:

H2: Female inclusion on board can significantly curb real earnings management in Nigerian non-financial firms.

## 2. Literature review

Conceptually, Healy and Wahlen (1999) define earnings management as the deliberate use of managerial judgment in financial reporting and the structuring of transactions to alter reported financial statements, with the intent either to mislead certain stakeholders regarding the firm's true underlying economic performance or to influence contractual outcomes that are tied to reported accounting figures. The definition provided by Healy & Wahlen (1999) highlights several critical dimensions of earnings management. First, it underscores that managers can manipulate reported earnings by exercising professional judgment in areas such as accounting estimates (e.g., depreciation methods or useful lives). Second, it emphasizes that earnings management can be used to deliberately mislead stakeholders about the firm's true underlying economic performance. This is particularly feasible when managers possess asymmetric information data that are not accessible to external parties and exploit this informational advantage for opportunistic or unethical purposes.

Roychowdhury (2006) defines real earnings management as "management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds." His seminal work focuses on detecting REM through abnormal patterns in operating activities (e.g., sales manipulation, overproduction, and discretionary expense reduction). Subsequent studies have widely validated the Roychowdhury (2006) model, confirming its strong explanatory power in identifying real earnings management practices (Cohen et al., 2008; Cohen & Zarowin, 2010).

Female director is an individual who is in charge of overseeing the company's operations for the company's benefit and objectives. This is explained in the Financial Services Authority Regulation (OJK) Number 57 of 2017 concerning Corporate Governance of Securities Companies Engaged in Underwriting and Securities Brokerage Activities. Since women are recognized to be more careful, moral, and risk-averse than men, their substantial duties and power are thought to lessen the propensity to engage in earnings management. This conduct is essential in lowering opportunistic behavior that uses corporate resources for private benefit (Mardianto & Susanti, 2022).

Income smoothening is a tool in earnings management practices. Management uses income smoothening to reduce variances in net income in the company's financial statements, claims Widyantoro et al. (2023). There are two categories of income smoothening, specifically: Of course, the term "smooth" refers to a natural smoothening of income, which means that there is a nature to profit-making that can lead to a stable final profit. The second type, Intentionally Smooth, is separated into two categories: Artificial Smoothening, which is an accounting process used to transfer income or expenses from one period to another, and Real Smoothening, which is a management action to control actual transaction events carried out with the effect of smoothening on profits for specific economic events.

This current study is anchored by “echelon theory” based on the principles and ideas behind the diversity of board of director (Hambrick & Mason,1994). According to Bromiley & Rau (2016), the upper echelon theory may be used to describe how each leader's knowledge, skills, beliefs, and traits might affect them and how these traits play a significant part in strategic decision-making and resource allocation. Since corporate performance explains the outcomes of actions taken by top management, Hence, it is crucial to examine the upper echelon theory pertaining to the traits and makeup of the board of directors' composition ((Escandon-Barbosa & Salas-Paramo (2024). This is due to the fact that different genders have distinct traits, and top management will use a range of alternate ideas when making decisions (Mardianto & Susanti, 2022).

Empirically, the inclusion of female directors on corporate boards is widely regarded as enhancing board quality and effectiveness. Women directors are often perceived to bring greater independence, stronger ethical standards, enhanced reputation, and superior monitoring of managerial decision-making. These perceived benefits have prompted regulators in many jurisdictions to introduce legislation or guidelines mandating a minimum level of female representation on boards. Empirical evidence suggests that female directors typically possess comparable if not superior educational qualifications, professional competence, integrity, and a heightened ability to detect earnings manipulation relative to their male counterparts (Lakhali et al., 2015; Singh et al., 2008). A higher proportion of female directors on corporate boards is associated with more rigorous oversight of the chief executive officer and stronger monitoring of managerial actions. This enhanced governance mechanism helps mitigate agency problems and reduces conflicts of interest between managers and shareholders (Adams & Ferreira, 2009).

Female directors tend to exhibit greater independence and are therefore able to make a stronger contribution to the board's monitoring and oversight responsibilities compared to their male counterparts. The study of Christiansen et al. (2016) posited that female representation has a stronger effect in an industry that employ relatively more females on board, which they found that, the effect is stronger when comparing high intensity female sectors with low-intensity female sectors. Also, firms with relatively few women in its workforce would not see a positive change in financial performance. Unlike, Abdullah & Ismail (2016) that employed modified Jones model and examined women participation on the board can reduced earnings management. The sampling frame of their study are all companies listed on the Main Market of Bursa Malaysia during the years 2008-2011 with discretionary accrual to measure the extent of earnings management. They discovered that the presence of women directors on the board is associated with income-reducing earnings management.

Research examining the impact of female board representation on earnings management remains limited (Fan et al., 2019;) and has produced inconclusive findings (Zalata et al., 2019; Naaraayanan & Nielsen, 2020; Shahab et al., 2020; Dobija et al., 2021; Chamo et al., 2025). In developed economies, however, several studies have shown that the presence of women on corporate boards significantly contributes to constraining earnings management practices. Einer & Söderqvist (2016) adopted a model of accrual-based measure of earnings management which separates accruals into nondiscretionary and discretionary of modified jones by Dechow et al. (1995) to investigates earnings management and female representation on the board of directors of Norwegian firms between 2006 and 2010. They found a significant and negative association between gender diversity and earnings management. Another reasons, Hoang et al. (2017) in their study investigated the effect of board diversity on earnings quality with two dimensions of board diversity measures in this study cover a wide range of structural and

demographic attributes of board of directors, using a diversity-of-boards index of 150 listed firms in Vietnam and used Dechow & Dichev (2002) model. They found no significant difference in the relationship between board diversity and earnings quality after using weight and unweight approach to construct board diversity indices.

In addition, nevertheless, Gull et al. (2018) in their study on how specific attributes of female directors influences earnings management. They applied GMM estimation technique, with a sampled of 394 French firms listed in Euronext Paris during the period of 2001 to 2010. Their study revealed a positive and significant relationship between female directors and earnings management. Similarly, Saona (2018) posited that having a balanced board in terms of gender diversity mitigates earnings management practices after investigating the impact of board gender diversity as instrument of corporate governance in mitigating earnings management practices in some selected European countries.

Empirical evidence suggests that female executives and directors exhibit a stronger adherence to ethical standards in the workplace and are significantly more inclined than their male counterparts to report incidents of fraud, financial irregularities, or misstatements in financial reporting (Ebaid, 2023). Likewise, Dama (2018) conducted a study in the French context with a sample of 120 firms from SBF from 2010-2014 to examines the influence of board gender diversity on earnings management. The study used an estimation of generalized least squares to test the panel regressions. The study results suggested that women on board are effective in their monitoring role and revealed a significant negative effect of board women presence on earnings management practices level.

Similarly, Akpan et al. (2025) examines gender diversity on from sustainability performance in health care services firm of Nigeria. Their study reveals that a positive and significant of gender diversity on sustainability performance. in addition, Al Azeez et al. (2019) in their study found that gender diversity has a significant impact on the reduction of earnings management, suggested that higher gender diversity creates a good supervision mechanism between the boards and management via enhancing independence and better monitoring system. This is because gender diversity increases creativity and innovation in firms which are considered as valuable.

Despite this, Almashaqbeh et al. (2019) in their study employed longitudinal data of non-financial firms quoted on the Amman Stock Exchange from 2011 to 2015 and analyzed using descriptive statistics and panel corrected standard errors regression, to investigate the effect of board diversity on real earnings management in Jordan. Their study adopted a model of Cohen et al. (2008) to measured real earnings management and revealed that women on board deter real earnings management. On the contrary, Razak & Helmy's (2020) study found a negative impact of female directors on earnings management. It could be observed from the previous literature that board diversity is an area that is critical in an organizational setting. In addition, Pavlovic et al. (2018) in their study determined the board's interaction with women and earnings management with a sample of 36 firms of Serbian agricultural companies listed on the Belgrade Stock Exchange from 2015-2016. Their study utilized Jones model, 1991 for EM, and found that proportion of women on the board shows an insignificant and negative relationship with EM.

Couple with Zalata et al. (2019) extracted data from the financial statement for the years 1992 to 2014 from the 2014 Annual Compustat to examine the effect of gender of CEO on earnings management. They found that the classification change by female CEOs declined dramatically following the enactment of the punitive SOX Act, also that the observed differences in financial reporting behaviour between male and female CEOs appear to be because female CEOs are more risk-averse but not necessarily more ethically sensitive than their male counterparts. On the contrary, Hala (2019) determined the role of women executives on earnings management with a population comprises companies listed on the Indonesia Stock Exchange within six years and 341 were chosen through purposeful sampling from a population of 2046 firms. The study adopted a Jones Model to proxy earnings management with panel data and Ordinary Least Square approach. The estimation results suggested that women in top supervisory roles have no significant impact on earnings management while women in top management have a substantial negative effect on earnings management. Also, women in top management and supervisory roles also contributed to enhancing the financial statements by reducing the probability of earnings management activities.

Furthermore, the study explicitly acknowledges the importance of including relevant control variables such as firm size, firm age, profitability, and board size that may significantly influence the earnings management outside female on board.

### 3. Methodology

The study examines the relationship between female director on earnings smoothening of listed nonfinancial firms in Nigeria Exchange Group (NGX). The study uses secondary sources of data from annual reports and accounts from MachameRatios Database in line with prior corporate governance codes (Wu et al. 2020; Chamo et al., 2025). Furthermore, the study treats all 111 firms listed on the NSE's main board as of January 2010 as a population for analysis to provide findings with broad generalizability throughout the country's economic sectors. However, due to the nature and objectives of this research, various filters are used to disqualify firms that are deemed unsuitable for the study.

**Table 1: Population and Sample Size**

S/N	Sectors	Nigeria
1	Agriculture	5
2	Conglomerate	5
3	Construction/Real Estate	8
4	Consumer Goods	20
5	Healthcare	10
6	ICT	9
7	Industrial Goods	13
8	Natural Resources	4
9	Oil and Gas	12
10	Services	25
Population		<b>111</b>
Less: Firms Filtered		<b>35</b>
Total Sample		<b>76</b>

Source: Design by Researcher, 2025.

Prior research on EM was based on the Dechow et al. (1998) model, which Roychowdhury (2006) amended. As a result, subsequent research has adjusted Roychowdhury (2006) models to quantify REM. Interestingly, writers like Roychowdhury (2006) concentrate more on corporate finance and associated literature's concentration on EM. The Cohen et al. (2008) model, which includes three proxies for REM, was used in this investigation as used by previous studies such as Anifoweshe et al. 2017, Wu et al. 2020). They are: 1) discretionary spending, 2) manufacturing costs, and 3) cash flow from operations are as follows:

$$\text{PROD}_{it} / \text{Assets}_{it-1} = \alpha_0 + \alpha_1 [1 / \text{Assets}_{it-1}] + \beta_1 [\text{Sales}_{it} / \text{Assets}_{it-1}] + \beta_2 [\Delta \text{sales}_{it} / \text{Assets}_{it-1}] + \beta_3 [\Delta \text{sales}_{it-1} / \text{Assets}_{it-1}] + \epsilon_{it} \quad (1)$$

As an approximate residual of Equation 1, RMPROD, the abnormal production cost level, is calculated. By lowering the cost of sold goods, higher residuals result in more significant inventory overproduction and higher reported revenue growth. Additionally, following Roychowdhury (2006), the following equation is used in this study to estimate the average level of discretionary spending:

$$\text{DISEXP}_{it} / \text{Assets}_{it-1} = \alpha_0 + \alpha_1 (1 / \text{Assets}_{it-1}) + \beta_1 (\text{Sales}_{it-1} / \text{Assets}_{it-1}) + \epsilon_{it} \quad (2)$$

Where: where for firm *i* in period *t*, CFO<sub>*i* *t*</sub> represents the current cash flow from operation. DISEXP<sub>*i* *t*</sub> represents the discretionary expenses (selling general and administrative costs and R&D, with those for managerial and marketing expenses, advertising, and R&D). S<sub>*i* *t*</sub> represents the sale revenue. *it*, ΔS<sub>*i* *t*</sub> is the change in sales revenues of firm *i* in year *t*. A<sub>*i* *t-1*</sub> represents the lagged value of the total assets. The definition and measurement of the study variables depicted in Table 1.

**Table 2: The operationalization of the variables.**

Synonym	Variable	Operationalization
<b>Dependent Variable</b>		
REM	Real Earnings Management	Abnormal operational cash flow (Actual CFO – Estimate CFO) + abnormal cost of goods sold (Actual COGS – Estimated COGS) + abnormal discretionary expense (Actual DC – Estimated DC). by Roychowdhury (2006).
<b>Independent Variable</b>		
FEMB	Female on Board	Proportion of female directors on the board (Razak & Helmy, 2020; Akpan et al., 2025).
<b>Control Variables</b>		
FSIZE	Firm size	The natural log of total assets (Mohammed et al., 2024).
FAGE	Firm age	Firm listing age in NGX (Wu et al., 2020).
FPRF	Profitability	Ratio of profit after tax to a total asset of the company (Widyantoro et al. (2023).
BSIZE	Board Size	The total number of directors on the board (Wu et al., 2020).

Source: Authors' compilation, 2025.

The following regression model was created for this investigation and was used to achieve the study's goals:

$$\text{REM}_{it} = \beta_0 + \beta_1 \text{FEMB}_{it} + \beta_5 \text{FSIZE}_{it} + \beta_7 \text{FPRF}_{it} + \text{BSIZ}_{it} + \epsilon_{it} \quad (3)$$

Whereas: EM = real earnings management (Abnormal Production Costs, Abnormal cost of goods sold, and Abnormal Discretionary Expenses); FEMB = Female on board; FSIZE = Firm size; FAGE = Firm age, FPRF = Firm profitability, and BSIZE = Board size.  $i$  = firm;  $t$  = year;  $\beta_0$  = the intercept;  $\varepsilon$  = the error term;  $\beta_1, \beta_2, \beta_3, \beta_4$  = the coefficients; Our database creates panel data by combining cross-sectional and time-series data. We applied the Hausman test to identify which estimate model among fixed or random effects is most appropriate. We check the models' underlying assumptions on issue of multicollinearity or heteroscedasticity. The Breusch-Pagan or Cook-Weisberg tests is used to determine whether there is a lack of heteroscedasticity.

#### 4. Results and discussion

This section begins with descriptive statistics correlation matrix, data analysis and discussion to describe the female inclusion on board of directors and real earnings management of listed nonfinancial firms in Nigeria Exchange Group. The descriptive statistics consist of mean standard deviation, minimum and maximum of the variables with observation of independent and dependent variables dataset are examined in this section Table 3, while the correlation to the relationship between the variables are also depicted in Table 4.

**Table 3: Descriptive statistics result**

Variable	Mean	Std. Dev.	Min	Maxi	N	JB
REM	0.041	0.028	0.000	0.306	760	0.676 (0.000)
FEMB	10.856	11.412	0.001	0.226	760	0.000 (0.601)
FSIZE	7.080	0.816	5.093	9.241	760	0.000 (0.000)
FAGE	26.183	13.379	1	55	760	0.000 (0.001)
FPRF	9.370	14.420	-9.410	179.917	760	0.000 (0.000)
BSIZ	8.967	2.665	4	19	760	0.251 (0.003)

Source: STATA 15 Output (2025).

Table 3 describes a statistical summary of the study variables for 760 observations. The mean value of REM model is 0.041 which means that on average, firms have a moderate level of manipulating REM. Std. Devi. = 0.028 which has a moderate variation across companies. Minimum and maximum of 0.000 and 0.306 indicates that some non-financial firms are practicing REM while others achieve some level of income smoothening. The analysis reveals that the proportion of female directors who simultaneously serve on the board of director remains relatively low. A closer examination of the data shows that while the majority of firm-year observations (760) have at least one female director on the board which reveals an average mean of 11% with a close range of Std. Devi of 11.412 the min and maxi value of 0.001 and 0.226 shows that many companies are still reluctant to appoint a woman to the board structure. These findings underscore the need for stronger regulatory intervention. Regulators should therefore enforce stricter compliance with existing gender-diversity requirements on corporate boards and, additionally, introduce specific policies mandating or strongly encouraging the inclusion of female directors on audit committees (Al-Absy., 2022). The Jacque-Bera statistics p-value of 0.000 validates the series' normality and the improbable existence of outlier values.

Regarding the control variance of specific characteristics, firm size (FSIZ) with a mean: 7.080, representing a typical firm size has an annual turnover of N7.080.000. With Std. Dev.: 0.816, showing moderate variation in firm size. Range: 5.096 to 9.241, implying firms are relatively large and engage in REM smoothening. The implication is that a larger firms tend to have greater resources, which may

encourage higher REM manipulation. The smaller firms may require capacity-building initiatives to improve governance and reporting. The table 3 indicates that the average firm age, measured from the date of incorporation, is approximately 26 years. Firm age in the sample ranges from a minimum of 1 year to a maximum of 55 years. The firm's profitability (PROF) mean value of N4.368 which reveals close to break-even level with a Std. Dev. of #14.438 indicating a significant variation on profitability. The min and max of -9.410 and 179.917 suggest negative or low profitability for some companies, which some are with high profit performance, this indicates a substantial difference level of REM practices, and profitability will influence the decision of manipulation of earnings and firms with losses could not engage in REM. In addition, a company Board Size (BSIZ) with a mean value of 8.967, indicating an average board size of 9 members. Std. Dev. of 2.665, showing moderate variation in board size across firms while the range of 4 to 19, suggesting some firms operate with very small boards, while others have large ones. The average board size in the sample falls below the maximum limit of 15 members stipulated by the Securities and Exchange Commission (SEC) Code of CG (2003). Hence, the variability highlights the differing CG structures among nonfinancial firms

**Correlation matrix**

The Pearson correlation matrix was utilized to investigate the relationship among the variables, which is displayed in Table 4 below:

**Table 4: Pearson correlation matrix result**

Variable	REM	FEMB	FSIZE	FAGE	PROF	BSIZ
REM	1.000					
FEMB	-0.013	1.000				
	0.691	0.027				
FSIZE	0.049	0.077	1.000			
	0.3688	0.027				
FAGE	0.013	-0.002	0.157	1.000		
	0.697	0.968	0.000			
PROF	0.057	0.025	-0.099	-0.062	1.000	
	0.140	0.438	0.006	0.078		
BSIZ	-0.047	0.057	0.454	0.066	-0.100	1.000
	0.197	0.089	0.0000	0.080	0.006	

Source: STATA 15 Output (2025).

The correlation matrix was used to assess whether there is a nexus among the variables of the study between female director and real earnings management, with control variables of firm size, firm age, profitability, and board size. For FEMB is negatively correlated with REM with -0.013 at 10%. This is an indication that a greater percentage of nonfinancial companies has no female or little number on board is an evidence of REM practices. Therefore, firm should comply with CGC of 30% of women inclusion on board to mitigate REM. Firm size (FSIZE) of 0.049 at 1% shows a positive nexus against REM. This indicates that larger companies are more likely to practice REM. Also, profitability (PROF) = -0.231 at 1% is negative and insignificant with REM A negative correlation shows nonfinancial engages in income smoothening using REM model. This implies that financially sound companies have the capacity to engage on REM. Board size (BSIZ) of -0.047 at 1% shows a negative relationship with REM which indicates that larger boards are associated with REM. The implication is that larger boards may provide diverse perspectives and increase REM smoothening of non-financial firms.

### *Multicollinearity test*

The variance inflation factor (VIF) explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. The VIF scores for all independent and control variables are less than 2, much below the cut-off value of 10, indicating that there are no collinearity issues between the study variables as depicted in Table 4 (Gujarati, et al., 2009; Yu et al., 2015). Consequently, the model used in this work establishes the absence of the multicollinearity issue.

**Table 5: Multicollinearity result (VIF)**

Variables	VIF	1/VIF
FSIZE	1.29	0.774999
BSIZE	1.26	0.791877
FAGE	1.03	0.972973
FPRF	1.02	0.984755
FEMB	1.01	0.990707
Mean VIF	1.11	

Source: STATA 15 Output (2025).

### *Panel regression result*

Table 5 presents key model-fit statistics in its lower panel, including the coefficient of determination ( $R^2$ ) and the F-statistic. This section reports and interprets the results obtained from the estimated regression panel model.

**Table 6: Panel multiple regression result (REM - random effect)**

Variable	Coeff	Std. Error	t	P>t
C	.033	0.018	1.81	0.070
FEMB	-.000	0.000	-0.43	0.667
FSIZE	0.002	0.003	0.89	0.374
FAGE	-0.000	0.000	-1.04	0.296
PROF	0.000	0.000	2.73	0.006
SGRW	-2.360	0.000	-0.15	0.884
BSIZE	-0.001	0.000	-2.39	0.017
LR Chi	5(0.000)	5(0.006)		
VIF Test	1.11			
Heteroscedasticity	22.71 (0.000)	-		
Adj. R. Square	0.024			
Panel Effect	44.88 (0.000)			
Hausman	0.817			
Observation (N)	760			

**Notes:** REM: Residual value of real earnings management; FEMB is the percentage of women sitting on the board; control variables are: FSIZE is the log of total asset; FAGE: Age of incorporation to date; PROF is the net income divided average total asset; BSIZ is the total number of the directors sitting on board. P-values \*\*, \*\*\*, implies statistical significance at 5% and 1% levels respectively Note: \* is 1% level of significance, \*\* is 5%. NGX: Nigeria Exchange Group.

Table 6 shows an adjusted R-squared value approximately 2.4% of the variability on female board member (FEMB). This shows a moderate explanatory power suggesting other factors within 2.4% will influence REM while other factors remained outside the model of the study. The model fitness of P-value of 0.000 reveals a significant effect at 5% level confirming the importance of independent variables in explaining the dependent variable. The multi multicollinearity with a mean VIF value of 1.11, which is lower than the benchmark value not exceeding 4 (Yu et al., 2015) therefore suggest there is multicollinearity presence in the model variable of the study. (R2) was 0.4034, which means that model one (1) explains about 40.34% of AEM variation. The F-value of the model was 2.02 and was statistically significant at 10%. The F-value suggests that the regression fit in predicting the model (Wooldridge, 2009). The fraction of variance due to differences across panels ( $\rho$ ) was 70.08, while the intercepts (constant) coefficient was 0.251158.

The regression results reported in Table 5 indicate that the presence of female directors (FEMD) exerts a negative and statistically significant effect on REM ( $\beta = -.000$ ,  $p > 0.667$ ) among listed nonfinancial companies in Nigeria. This finding aligns with Almashaqbeh et al. (2019), who documented an insignificant relationship between female on board and real earnings management. Furthermore, Gul et al. (2009) suggest that female directors exhibit stronger ethical orientation and actively seek voluntary disclosures, thereby reducing information asymmetry. The result provides strong support for Hypothesis which posits that female directors does not have effect on real earnings management in Nigeria listed nonfinancial firms.

Regarding the control variable, table 5 shows several firm-specific variables were incorporated in the model. The regression results from Table 4 show that firm size exhibits a statistically significant relationship with real earnings management (coefficient = 0.002, P.value=0.374). Firm age posits a coefficient of = -0.000, P.value=0.296). The outcome in respect of firm age and real earnings management shows that firm age is negative and insignificantly associated at 1% in explaining real earnings management. The result implies that younger firms are less prone to commit REM than older firms. Firm profitability reveals a coefficient of 0.000 with a P.value of 0.006 which is positive and significant at REM. It also shows that board size and real earnings management with negative coefficient of -0.001 and P.value of 0.017 that is statistically significant. Therefore, this study reveals a negative relationship between board size and real earnings management. The results of the control variables are consistent with previous findings (Elamer & Benyazid, 2018, Wu et al., 2020, Widyantoro et al., 2023, Mohammed et al., 2024).

## **5. Conclusion**

The study investigates the female on board and real earnings management in Nigeria listed nonfinancial companies. The empirical findings demonstrate a statistically significant negative relationship between the female directors and real earnings management (REM) (the latter proxied by abnormal cash flows from operations). Specifically, appointing a female into board of director exerts a strong constraining effect on earnings management practices. Similarly, firms exhibit strong compliance with corporate governance code particularly with 30% of female on board exhibit significantly stronger monitoring, thereby effectively deterring managerial engagement in earnings management (REM).

The findings of this study hold substantial practical and academic value for a wide range of audiences, including policymakers, regulatory authorities, corporate stakeholders, academic researchers, and society at large. The study recommends that firms increase the number of female directors on their boards and, crucially, ensure that at least one female director is appointed to the audit committee. Such measures would significantly enhance the monitoring and supervisory effectiveness of women directors over managerial behaviour and financial reporting practices. The study recommends that future research devote greater attention to the specific attributes of female directors both at the board level and subcommittee in constraining earnings management. Additionally, there is a clear need for the development and validation of new, more nuanced measures of gender diversity beyond simple counts or proportions. Finally, subsequent studies should investigate the contextual, structural, and institutional factors that amplify the monitoring effectiveness of female directors, thereby enhancing their ability to mitigate earnings management practices.

### Reference

- Akpan, D. C., Otung, A. U., & Nsentip, E. B. (2025). Board Gender Diversity and Corporate Social Responsibility: Evidence from Listed Healthcare Firms in Nigeria. *FUDMA Journal of Accounting and Finance Research [FUJAFR]*, 3(2), 56-69
- Al-Absy, M. S. M. (2022). Impactful women directors and earnings management. *Cogent Business & Management*, 9(1), 2148873.
- Almashaqbeh, A. A., Abdul-Jabbar, H., & Shaari, H. (2019). Ownership Structure and Real Earnings Management: Jordanian Evidence. *International Journal of Business Management and Commerce*; 4(2), 34 - 48.
- Almashaqbeh, A., & Hijattulah Abdul-Jabbar, H. S. (2019). The Effect of Board Diversity on Real Earnings Management: Empirical Evidence from Jordan. *International Journal of Financial Research*, 10(5), 495-508.
- Bromiley, P., & Rau, D. (2016). Social, behavioral, and cognitive influences on upper echelons during strategy process: A literature review. *Journal of Management*, 42(1), 174-202.
- Chamo, M. A., Kantudu, A. S., & Isa, M. A. (2025). Board diversity and financial instrument risk disclosure of deposit money banks in Nigeria. *FUDMA Journal of Accounting and Finance Research [FUJAFR]*, 3(1), 40-52.
- Chatterjee, C. (2020). Board quality and earnings management: Evidence from India. *Global Business Review*, 21(5), 1302-1324.
- Chatterjee, C. (2021). Ownership pattern, board composition, and earnings management: evidence from top Indian companies. *International Journal of Disclosure and Governance*, 18(2), 179-192.
- Chatterjee, R., & Rakshit, D. (2020). Association between earnings management and corporate governance mechanisms: A study based on select firms in India. *Global Business Review*, 1(19), 02-19 <https://doi.org/10.1177/0972150919885545>.
- Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. *The accounting review*, 83(3), 757-787.
- Ebaid, I. E. S. (2023). Board characteristics and the likelihood of financial statements fraud: Empirical evidence from an emerging market. *Future Business Journal*, 9(1), 47.
- Enomoto, M., Kimura, F., & Yamaguchi, T. (2015). Accrual-based and real earnings management: An international comparison for investor protection. *Journal of Contemporary Accounting & Economics*, 11(3), 183-198.
- Escandon-Barbosa, D., & Salas-Paramo, J. (2024). The Effect of the Board of Directors on Perceived Risk and the Non-Financial Performance of Firms. *International Journal of Organizational Leadership*, 13(1), 117-141.

- Gujarati, D.N., Porter, D.C., & Pal, M. (2009). The Nature of Multicollinearity. *Basic Econometrics*. 315-345. McGraw Hill.
- Janssen, J. (2019). The influence of gender diversity and earnings management on the short-and long-term financial performance of European firms, Master's Thesis Economics: *International Business*, 1-45.
- Kliestik, T., Belas, J., Valaskova, K., Nica, E., & Durana, P. (2021). Earnings management in V4 countries: the evidence of earnings smoothing and inflating. *Economic Research-Ekonomska Istraživanja*, 34(1), 1452-1470.
- Mardianto, & Susanti, D. (2022). Pengaruh Direksi Wanita Terhadap Manajemen Laba Mardianto. *Jurnal Akuntansi Bisnis*, 20(2), 221-234.
- Mensah, E. (2021). The effect of IFRS adoption on financial reporting quality: Evidence from listed manufacturing firms in Ghana. *Economic Research-Ekonomska Istraživanja*, 34(1), 2890-2905.
- Mohammed, A., Musa, A., & Abdullahi, A. (2024). Firm Specific Characteristics and Sustainability Performance in Emerging Economies: Evidence from Nigeria. *ESUT Journal of Accountancy*, 13(2).
- Nguyen, A.H., Nguyen, L.H., & Doan D.T. (2020). Ownership structure and earnings management: empirical evidence from Vietnam real estate sector. *Real Estate Management and Valuation*, 28(2), 37-51.
- Obigbemi, I.F., Omolehinwa, E.O., Mukoro, D.O., Ben-Caleb, E., & Olusanmi, O.A. (2016). Earnings management and board structure: evidence from Nigeria. *Sage Open*, 6(3), 1-15. <https://doi.org/10.1177/2158244016667992>.
- Orazalin, N. (2020). Board gender diversity, corporate governance, and earnings management: Evidence from an emerging market. *Gender in Management: An International Journal*, 35(1), 37-60.
- Razak, B., & Helmy, H. (2020). Pengaruh dewan direksi wanita, dewan komisaris wanita dan kualitas pengungkapan corporate social responsibility terhadap manajemen laba. *Jurnal Eksplorasi Akuntansi*, 2(4), 3434-3451.
- Roychowdhury, S. (2006). Earnings Management through real activities manipulation. *Journal of Accounting and Economics*, 42, pp. 335 - 370.
- Quartararo, C., & Ruspini, E. (2021). A Gender-sensitive Tool to Promote Gender Equality in Academia. The Gender Budget Report. *Gendered academia*, 83.
- Shahab, Y., Ntim, C. G., Ullah, F., Yugang, C., & Ye, Z. (2020). CEO power and stock price crash risk in China: Do female directors' critical mass and ownership structure matter? *International Review of Financial Analysis*, 68, 101457. <https://doi.org/10.1016/j.irfa.2020.101457>.
- Wang, Y., Yu, M., & Gao, S. (2022). Gender diversity and financial statement fraud. *Journal of Accounting and Public Policy*, 41(2), 106903.
- Widyantoro, D. A., Sumarsono, H., & Marsiwi, D. (2023). Effect of female directors on income smoothening. *Jurnal Proaksi*, 10(3), 382-396.
- Wu, B., Bhulani, N., Jalal, S., Ding, J., & Khosa, F. (2019). Gender disparity in leadership positions of general surgical societies in North America, Europe, and Oceania. *Cureus*, 11(12), 62-85.
- Wu, M., Coleman, M., & Bawuah, J. (2020). The Predictive Power of K-Nearest Neighbour (KNN): The Effect of Corporate Governance Mechanisms on Earnings Management. *SAGE Open*, 10(3), 1-12.
- Zalata, A. M., Ntim, C. G., Choudhry, T., Hassanein, A., & Elzahar, H. (2019). Female directors and managerial opportunism: Monitoring versus advisory female directors. *The Leadership Quarterly*, 30(5), 2-16.