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Board Monitoring Mechanisms and Earnings Management of Listed Non-Finance Firms in Nigeria

Kinglsey Lawrence Enoidem
Department of Accounting, Faculty of Business Administration
Akwa Ibom State University, Obio Akpa Campus

Dorathy Christopher Akpan
Department of Accounting, Faculty of Management sciences
Akwa Ibom State University, Obio Akpa Campus

Patrick Edet Akinninyi
Department of Accounting, Faculty of management Sciences
Akwa Ibom State University Obio Akpa Campus

Ese Bassey Nsentip
Department of Accounting, Faculty of Management sciences
Akwa Ibom State University, Obio Akpa Campus

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ABSTRACT: *Management opportunistic behavior has led to manipulations of earnings and thus loss of investments by misguided investors. The board of directors through their supervisory roles tend to monitor and control some of these unbecoming acts of managements. This study therefore examined the effect of board monitoring mechanisms on earnings managements of non-finance firms listed on the floor of the Nigeria Exchange Group from 2012-2021. The independent variable of the study being board monitoring mechanism was proxied by board size (BODS), board independence (BODI) and board gender diversity (BGDV) while the dependent variable being earnings management was proxied by Modified Jones Model (MJON). Furthermore, in line with related extant literature, the study controlled the model goodness of fit by employing the variable of cash flow return from operations (CFOA) The research design adopted for this study was ex post facto, purposive sampling technique was employed and secondary source of data used was obtained from the studied companies' annual report and Nigeria Exchange Group fact book. Least square variable regression was adopted to analyze and test the three hypotheses formulated for the study. The study revealed that board size, board independence, board gender diversity has significant negative effect on earnings management of non-finance firms listed on the floor of the*

Nigeria Exchange Group. It was thus concluded that board monitoring mechanisms have significant effect on earnings management of listed non-finance firms in Nigeria. Based on these findings, it was recommended that board size should not be less than ten members, non-executive directors should constitute 80% of total board members and female members should constitute half of the board size as this composition tends to reduce earnings management of the sampled firms.

KEYWORDS: Board monitoring mechanism, earnings management, board size, board independence.

INTRODUCTION

Lack of goal congruence between the shareholders and management has been one of the major drives for monitoring role of the board of directors. The board of directors thus constitute a key internal control mechanism that serves as an interface between owners of capital (shareholders) and those who (manages) utilize that capital and create value (maximize shareholders' wealth). Additionally, the boards of directors monitor the firm's accounting system by ensuring the managers observe the relevant accounting principles and standards in preparing financial reports, thus guaranteeing the credibility of accounting information. The board's supervisory role in financial reports is vital because opportunistic managerial behaviors associated with earnings manipulation may mislead shareholders (Alfina & Wijayanti, 2018). Thus, earnings management refers to the manipulation of financial reporting process by management in an attempt to achieve certain incentives (Olaoye & Adewumi, 2019). Iturriaga and Hoffmann (2005) opined that earnings management may emerge as an aftermath of agency problem. Managers could engage in creative accounting while preparing the financial report with the aspiration of elaborating their position, without considering the facts that stakeholders rely on the information provided in the financial reports. According to Mertzanis (2020), the collapse of global enterprises was caused by an imbalance of funding structures, the inability to meet outstanding commitments, the lack of supervisory systems, and the financial and administrative corruption of audit firms.

Corporate monitoring mechanism is most often seen as the structures and relationships that determine a company's direction and performance. The Board of Directors is usually the center of governance; therefore, relationships with other vital participants, shareholders, and management are essential (Alfina & Wijayanti, 2018). Corporate governance through monitoring mechanism of the board is concerned with maintaining order between economic and social goals and between the individual and community goals. The corporate governance framework aims to encourage efficient use of resources and equally require accountability for managing these resources. It aims to harmonize personal and corporate interests and the broader community as much as possible (Alfina & Wijayanti, 2018). Hence, in line with the studies of Alfina and Wijayanti, (2018) this

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study identifies board size, board independence and board gender diversity as board monitoring mechanisms.

Effective and stronger board monitoring mechanism is expected to guard against earnings management. Corporate Governance (CG) can protect stakeholders' interest by introducing and strengthening business regulations which enhance accountability, integrity and transparency thus rationalizing the decision-making process as well as mitigating the agency problem between the management and the shareholders. The Board of directors is one of the most powerful CG mechanisms to oversee a firm's progress, enhance the quality of disclosure by monitoring and controlling the management's activities and increasing a company's alignment with its stakeholders (Reddy & Govender, 2013). Prior studies find that large boards are considered ineffective owing to lack of coordination, slow decision-making, and free riding amongst directors (Türegün, 2018). Therefore, smaller boards may be more effective in monitoring unethical managerial behaviours than larger ones. Furthermore, in terms of the variable of board independence, Türegün (2018) reported a negative relationship between the proportion of independent directors and earnings management among firms listed in Borsa Istanbul. Conversely, Alareeni (2018) who considered listed firms from Bahrain found that the proportion of independent directors had a positive effect on EM. Therefore, non-executive directors are expected to constrain executives to monitor the financial information elaboration process.

Furthermore, Corporate governance literature depicts that women are more ethical in their judgments and behaviour (O'Fallon & Butterfield, 2013; Vermeir & Van Kenhove, 2008). They are thus less likely to engage in unethical behavior, thus effectively mitigating managerial opportunism (Zalata et al., 2019). Recent research studies further demonstrate that female directors are ethical and risk-averse in financial decision-making (Doan & Iskandar-Datta, 2020; Yahya et al., 2020). Finally, board frequent meetings is presumed to be a good strategy for monitoring and controlling managers' behaviour. Effective board is expected to meet regularly to stay on top of accounting and control related matter to make sure financial reporting process is functioning properly. On the overall, managers sometimes make changes to earnings information in financial reports to either convey a more positive impression to stakeholders about the company's financial and economic performance or to influence contractual outcomes that are based on accounting statistics. In order to obtain desirable rewards, managers may be inclined to manipulate earnings information (Lacina, Lee, & Kim, 2018).

Many financial crises and scandals have rocked the global economy, including the bankruptcy of major companies in the world, making financial statement reliability and credibility a serious issue in current researches. This is as a result of weak and ineffective corporate governance mechanism of those organizations. However, prior researches show that corporate entities suffer from serious deficiencies and crises as a result of unfaithful representation of facts and figures. One of the main causes of the global financial disaster is earnings management by the management to fulfil their

personal intent. These misrepresentations misdirect the investors from having adequate and appropriate information to evaluate corporations' financial position and going concern status. On the other hand, International financial reporting standards are designed to eliminate prejudice in accounting measurement and to present financial data in a clear manner. However, the flexibility with which these standards allow management to choose between accounting rules and processes has made management to abuse this flexibility to achieve their purposes and aims, thereby jeopardizing the credibility of financial reports and, consequently, stakeholders' confidence.

Although prior studies have examined the effect of board characteristics on earnings management, the findings are mixed and there is no consensus as to the effect of board monitoring mechanism on earnings management (Alareeni, 2018; Alzoubi, 2018; Arioglu, 2020; Arun et al., 2015; Asogwa et al., 2019; Rajeevan & Ajward, 2020). Institutional setting of these studies explained the inconclusive results considering most of them were done in countries with strong investors protection mechanism (Mnif & Cherif, 2021; Ferris & Liao, 2019; Ramachandran et al., 2015; Chen et al., 2015; Arun et al., 2015) hence leaving a gap for further studies in developing countries like Nigeria. This study would be significant to many stakeholders including the investors, management, policy makers and scholars. The investors would benefit as the outcome if this study would enable them to know how effective corporate governance mechanism can affect their investments. This study would also be significant as it would enable them to assess and regulate the activities of corporate organizations especially manufacturing companies. It would give government insight on the steps to take to enforce compliance to corporate governance code in order to safeguard the investors' investments and the economy at large. This study would contribute to knowledge by expanding the existing literature and providing empirical evidence of the effect of board monitoring mechanism on earnings management of listed non-finance firms in Nigeria. The rest of this study is organized into literature review and hypotheses development, methodology, data analysis and discussion and summary and conclusion.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Board monitoring mechanisms

According to Harford (2012), corporate monitoring mechanism is a board's role in monitoring the organization's management. Board of directors plays a pivotal role in corporate governance and is appointed by the shareholders to govern the company. Therefore, corporate monitoring mechanism is viewed as a bestowed responsibility of board of directors in governing the organization to ensure that those, who invest in the company, are able to obtain a return on their investments. In this respect, the board has the legal mandate to protect the right of investors as well as their shareholders. Corporate governance corresponds to the mechanisms that ensure that the business finance providers will get a return on their investment (Shleifer & Vishny, 1997). Following an encompassing definition as put forward by OCED (1999), corporate governance relates to the internal means by which corporations are operated and controlled. The distribution of rights and

responsibilities among different stakeholders in the corporation such as: the board, managers, shareholders, customers, employees, among others, is specified by governance structures which also spell out the rules and procedures for making decisions on corporate affairs. In most related studies, corporate governance has been documented as a factor that impacts on performance and reliability of financial reports of firms which is effective on financial reporting quality and market value of companies.

Earnings management

Earnings management is a classical issue that has been extensively evaluated and reviewed from various perspectives and dimensions in the accounting literature. Healy & Wahlen (1999) opined that management of earnings occurs whenever managers make use of their intuition when financial statement are being prepared by formulating financial transactions that would modify the financial statement which may delude financial users regarding the economic performance of the entity. Earnings management refers to the manipulation of financial reporting process by management in an attempt to achieve certain incentives (Olaoye & Adewumi, 2019). The alarming cases of reported earning manipulation have been an issue of great concern to investors and regulators in the world over particularly in Nigeria and has raised investors skepticism on the credibility of financial reports of companies (Farouk & Isa, 2018). Iturriaga & Hoffmann (2005) opined that earnings management may emerge as an aftermath of agency problem. Earnings management occurs when managers intentionally make operating decisions that have actual cash flow consequences with the goal of altering reported earnings.

Board size and earnings management

Board size is the number of executive and non- executive directors on firm board of directors. In conformity with agency theory, the size of an organization's board is organized based on the scope and complexity of the firms' production process; implying that larger and complex processes would require larger board size (Fama & Jensen, 1983). The board of directors is viewed as a critical mechanism for checking managerial opportunism and ensuring that organizational actions accord with stakeholder interests (Williamson, 2020). The strategic role of the board beyond acquiring resources or representing stakeholder interests, involves taking important decisions on strategic change that help the organization adapt to important environmental changes (Mintzberg, 2013; Pearce & Zahra, 2022; Zald, 2021). Researchers have generally argued that larger and more diverse boards of directors reduce uncertainty surrounding strategy development and enhance company performance (Pearce & Zahra, 2022). Various studies have tried to establish an interrelationship between the board size and the effectiveness of the board. Jensen (1993) averred that a smaller board would be more effective due to fewer difficulties in coordination of efforts and the smaller board may be less burdened with political problems and might be able to provide quality financial reporting oversight. However, there are opposing views that suggests that a large board is more effective as they have information and expertise leverage over boards with a few members (Dalton, 1999) and a board with more members would be able to have access to a broader

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and wider range of experienced members (Xie et al., 2013). Campos et al. (2022) maintains that the board size should be neither big nor small and recommends that the appropriate board size should be between five and nine members. Kouki et al. (2011) reviewed corporate governance attributes influences on earnings management and concluded that board size should not be too large neither should it be too small so as to prevent business decisions that are solely beneficial to the managers. From a resource-based view and resource dependency theory, larger boards enjoy the advantage of having members with different expertise and experience that can improve the quality of board decisions and ultimately enhances firm value (Loderer & Peyer, 2012). Alareeni (2018) reported a negative association between earnings management and board while Ebrahim (2017) found that larger boards are associated with lower levels of discretionary accruals. However, Ferris and Liao (2019) who used a sample of 51,147 firm-year observations drawn from 46 countries found no relationship between size of the board and earnings management. It was thus based on the above argument that this study hypothesized that;

H_{01}: Board size has no significant effect on earnings management of listed non-finance firms in Nigeria

Board independence and earnings management

According to Fuzi, Halim, and Julizaerma (2016), independent directors are directors that are not full-time employees as compared to the executive directors who are full-time employees and are involved in the day-to-day operation of the company. An independent member of the board of directors is a board member free from any conflict of interest, independent in the protection of investors and the improvement of the quality of control exercised by the board. These directors help guide the firm's strategic policies and make them more effective in managing firm risks. Board independence refers to a corporate board that has most outside directors who are not affiliated with the top executives of the firm and have minimal or no business dealings with the company to avoid potential conflicts of interests (Liu, Miletkov, Wei & Yang, 2015). The term independent directors have been used interchangeably with the term non-executive directors and outside directors. Independence is a tool for solving a specific problem and represents a procedural instrument to protect weak groups within the company while mitigating agency costs. Alves (2011) empirically examined the effect of board structure on the magnitude of EM and found that a high proportion of non-executive directors on the board lower the magnitude of discretionary accounting accruals. Rajeevan and Ajward (2020) examined the association between corporate governance attributes and the extent of EM among quoted companies in Sri Lanka and reported that firms with a higher proportion of non-executive directors could constrain EM. Türegün (2018) also reported a negative relationship between the proportion of independent directors and EM among firms listed in Borsa Istanbul. Conversely, Alareeni (2018) who considered listed firms from Bahrain found that the proportion of independent directors had a positive effect on EM. Using UK data, Peasnell et al. (2005) document an adverse relationship between the percentage of outsiders on the board and income-increasing abnormal accruals. Moreover, Niu (2006) provides evidence supportive of the

negative association between levels of board independence and EM in Canada. In Jordanian context, Abed et al. (2012) find no effect of board independence on abnormal accruals through the period 2006-2009. Thus, based on the foregoing this study hypothesized that;

H_{02}: Board independence has no significant effect on earnings management of listed non-finance firms in Nigeria

Board gender diversity and earnings management

Women representation in business management has been the focus of public debates from researchers, policy makers and investors in the recent decade. The 21st century workforce is typified by more women and employees with diverse ethnic backgrounds, alternative lifestyles, and intergenerational differences than in the past. According to Adams and Ferreira (2019), female directors are said to possess higher levels of awareness and demonstrate this type of behavior more easily. Diversity could be defined as broad (Pelled, 2018) with respect to demographic attributes, or narrow (Carter, Simkins & Simpson 2022) with respect to the percentage of women or minorities on the board of directors. The study views board diversity as the presence or participation or female representation in the organizations board. Corporate governance literature depicts that woman are more ethical in their judgments and behaviour (O'Fallon & Butterfield, 2013). They are thus less likely to engage in unethical behavior, thus effectively mitigating managerial opportunism. Recent research studies further demonstrate female directors are ethical and risk-averse in financial decision-making (Yahya et al., 2020). In a similar vein, a study by Chen et al (2015) found that female directors are important in industries characterized by male CEO overconfidence. Chen et al (2015) also noted that female directors are less aggressive in investment and acquisition decisions, thus, higher financial performance. Therefore, there is a greater possibility that women on boards will restrain unethical practices such as EM. However, Arun et al. (2015) found that firms with a higher percentage of female and independent female directors have a higher earning quality. Gavious et al. (2022) reported a similar finding among Israeli high technology firms listed in the USA (traded on the NYSE or the NASDAQ) between 2012 and 2019. Thus based on the foregoing, it was hypothesized that;

H_{03}: Board gender diversity has no significant effect on earnings management of listed non-finance firms in Nigeria

THEORETICAL REVIEW

This theory was supported by agency theory as propounded by Jensen and Meckling in 1976. According to this theory, when given the freedom to act, agents frequently act in their own interests without giving adequate thought to the interests of the principal (Jensen & Meckling, 1976). As such, this theory states that the interest of shareholders is to maximize their shareholder value and while that of the managers is opportunistic and self-serving (Podrug et al., 2010). This

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might even lead to managers taking on short-term gains and adopting accounting methods to manage earnings in order to showcase their expertise with the intention of empire building for private gains (Visvanathan, 2019). In an attempt to minimize managers self-interest, shareholders has to pay agency cost. Jensen and Meckling (1976) describe agency cost as *"the sum of monitoring expenditure by the principal to limit the aberrant activities of agent".* Although agency costs are inevitable, with good corporate governance practices, these costs can be reduced (Gursoy & Aydogan, 2002). To reduce agency costs, owners use monitoring mechanisms to steer the company in the direction that they aim by the means of two ways - (1) contractual agreements (2) monitoring of agents by BoD. First the contracts allow individuals to act in their self- interest as long as the interests of maximizing shareholder value retains, the BoD on the other hand, acts as a governing function to monitor the actions of managers to ensure there is alignment between their interest and that of shareholders (Jensen & Meckling, 1976). This theory supports this study because the board of directors, through their monitoring and supervisory roles ensure that managers are not using accounting methods to manipulate financial statements in an attempt to achieve selfish goals.

Empirical review

Etuk and Akpan (2023) examined the effect of corporate governance mechanism on annual report readability by drawing samples from oil and gas firms that were listed on the floor of the Nigerian Exchange Group (NGX) from 2012-2021. In this study, board size, audit firm type, and ownership structure were the corporate governance mechanism employed. The dependent variable of annual report readability was proxied in terms of annual report page length in line with related extant literature. Specifically, to examine the cause-effect relationships between the dependent variables and independent variables as well as to test the formulated hypotheses, the study used a panel regression analysis. The result showed that board effectiveness has a significant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. However, audit quality had an insignificant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. Furthermore, ownership concentration had an insignificant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. Specifically, it was concluded that a large board size will increase annual report readability of listed oil and gas firms in Nigeria. It was also recommended that the size of the board should be considerably increased in order to increase annual report readability.

Akpan and Nkanga (2023) examined the effect of corporate governance attributes on segment reporting of listed conglomerates firms in Nigeria. Ex post facto research design was adopted for the study and five listed conglomerate firms were purposively selected. Secondary data were extracted from these companies' annual reports and the Nigeria Exchange Group fact book. The data for the study was analyzed using OLS regression technique and the findings revealed that board size, board diligence and board gender diversity have significant positive effect on segment reporting measured

by the number of reportable segments. Thus, it was concluded that corporate governance attributes have a significant effect on segment reporting and performance of the studied firms. Based on the above, it was recommended that the size of the board of directors should be large and balanced enough to accommodate members with cognate experience, expertise and equity in the representation of female.

Jusup and Sambuaga (2022) provided empirical evidence regarding the role of gender diversity in the governance function on earnings management practices. Analysis of the results was done using multiple linear regression method on a sample of 45 LQ companies for the period 2016-2020. They noted however that the percentage of women on the board of directors does not affect the company's earnings management practice. The study concluded that the presence of women in the governance function can reduce agency problems in companies, but the overall proportion of women has not been empirically proved. Zgarni and Fedhila (2022) examined the effect of board characteristics on real earnings management. Using panel data, the authors show that board gender diversity has a disciplinary role in real earnings management as measured by discretionary revenue on equity securities. However, they show that board independence increases the real earnings management. As for board size, board duality, as well as the number of meetings carried out per year by the board of directors, they prove that they have no significant effect on real earnings management.

Zalata, Ntim, Alsohagy, and Malagila (2022) focus on the financial background of female directors, an area which remains largely unexplored in existing literature. The results show that the participation of female directors with relevant financial background improves earnings quality more than the participation of female directors without such background. In addition, their findings suggest that only female directors possessing relevant financial background and having fewer outside directorships are able to mitigate earnings management. Gull, Nekhili, Chtioui, and Nagati (2022) apply the system GMM regression estimation approach on a matched sample of French firms listed on Euronext Paris during the period 2001-2019 to investigate the relationship between board monitoring mechanism and earnings management by considering statutory and demographic attributes of directors. Primarily, they find a negative relationship between board size and the magnitude of earnings management. Githaiga, Kabete, and Bonareri (2022) examined the effect of board characteristics on earnings management (EM) from a developing region perspective. The study used the system generalized method of moments (SGMM) estimation model to take care of potential endogeneity and reverse causality. The findings revealed a positive and significant relationship between board size and EM. The findings further indicated that board independence, board gender diversity, and board financial expertise had a negative and significant effect on EM. Akpan, Simeon and Nkpodot (2022) evaluated the moderating effect of audit committee gender diversity on the relationship between social responsibility disclosure and earnings management of selected consumer goods companies in Nigeria. Earnings management was the dependent variable and the independent variable employed in this study was corporate social responsibility measured

as social donation disclosure, employee relation disclosure, while audit committee gender diversity was used as the moderating variable. Ex post facto research design was adopted, secondary data were used and three hypotheses were tested. The results showed that audit committee gender diversity significantly moderate the relationship between social donation disclosure and earnings management. Also, the study found that audit committee gender diversity significantly moderates the relationship between customer complaints disclosure and earnings management. Finally, the result showed that audit committee gender diversity significantly moderates the relationship between employee disclosure and earnings management. In line with the findings of this study, it was concluded that that more gender diversified audit committee boards have the capacity to weaken the opportunistic behavoiurs of such managers. The study recommended that efforts by stakeholders to promote CSR activities should be pursued alongside institutional monitoring mechanisms such as audit committee boards that is unbiased against female members. This effort will ensure that managers' opportunistic tendencies do not override the ethical and legitimate purpose of CSR initiatives.

Ibrahim and Danjuma (2020) examined the effect of corporate governance on the performance of quoted deposit money banks in Nigeria. The study employed panel data analysis using regression model to investigate the connection between corporate governance proxy (Board size, Board composition and Firm size) and Return on Asset (ROA) of quoted deposit money banks in Nigeria for a period of 5 years (2015-2019). Data for the study were obtained from audited annual reports of fifteen (15) listed banks on floor of the Nigeria Stock Exchange. Findings revealed that there is significant relationship between board composition, board size and firm size and the ROA of deposit money banks in Nigeria. They concluded that board composition has a positive impact on performance while board size has a negative impact on the performance signifying that an increase in board size decreases performance of quoted deposit money banks.

Akinleye and Fajuyagbe (2019) examined corporate governance and financial performance of selected Nigerian multinational firms from 2012 to 2016. Specifically, the study focused on the effect of board size, activism and committee activism on return on asset and firm growth rate. The data were analyzed using static panel estimation techniques. While board size and board activism exerted significant negative impact on return on asset, committee activism exerted insignificant impact. The results of the study further showed that board size and board activism exert insignificant negative impact on firm's growth rate, while committee activism insignificantly spurs firm's growth rate.

METHODOLOGY

The research design adopted for this study was expost factor and this was suitable for this study because the data used was secondary. The population of this study was made up all non-finance firms listed on the floor of the Nigerian Exchange Group (NGX) as at 2021 financial year. This

covered firms in all the non-finance sector which includes Agriculture, Consumer goods, Industrial goods, Oil and gas, Healthcare, Services, Natural Resources, ICT, and Conglomerate. The sample size of 70 companies was purposively selected based on certain selection criteria. The data that were used in this study were secondary sourced from the sampled companies' annual financial statements for the periods as well as the Nigerian Exchange Group factbooks. The Least Square Variable Regression analysis was used to test the hypotheses of this study. This study measured earnings management using the modified Jones Model. The modified Jones Model is computed as:

Formula	$TA_{it} = \alpha_0 \frac{1}{A_{it-1}} + \alpha_1 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}$
Variables	TA_{it} - Total Accruals in year t A_{it-1} - Total Assets in year t -1 ΔREV_{it} - Annual change in revenues in year t ΔREC_{it} - Annual change in receivables accounts in year t PPE_{it} - Gross property, plant and equipment in year t ε_{it} - The error term

Model specification

Based on the theoretical literature and earlier empirical studies, the model of this study is expressed as follows:

$$MJON_{it} = \beta_0 + \beta_1 BODS_{it} + \beta_2 BODI_{it} + \beta_3 BGDV_{it} + \mu_{it}$$

Thus, the apriori expectation based on the literature reviewed and related theories is stated as follows; $\beta_1 X_{1it} < 0$, $\beta_2 X_{2it} < 0$, $\beta_3 X_{3it} < 0$, <0. The basis for this expectation flows from the outcome of the literature reviewed and empirical findings.

Where:

MJON	=	Modified Jones Model (Measure of Earnings Management)
BODS	=	Board size
BODI	=	Board independence
BGDV	=	Board gender diversity
β_0	=	Constant
β_1- β_3	=	Slope Coefficient
μ	=	Stochastic disturbance
i	=	i^{th} company
t	=	time period

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DATA ANALYSIS AND DISCUSSION OF FINDINGS

This section covers the data analysis techniques, test of hypotheses and discussion of findings.
Table 4.1: Normality test of residua

Variable	Obs	W	V	Z	Prob>z
mjon	700	0.93617	106.679	11.256	0.00000
bods	700	0.70363	85.765	6.179	0.00000
bodi	700	0.39250	43.107	5.502	0.00000
bgdv	700	0.87201	5.108	3.103	0.05890
cfoa	700	0.73054	4.059	3.241	0.05980

Source: Researchers computation (2023)
Table 4.1 shows the result obtained from the Shapiro-Wilk normality test for the data employed in this study. It is observed that the dependent variable of Modifieds Jones Discretionary Accruals (Z=11.256; Prob>Z=0.00000) is not normally distributed since the probabilities of the z-statistics are significant at 1% level. In the case of the independent variables, table 4. shows that board size (Z=6.179; Prob>Z=0.0000), board independence (Z=5.502; Prob>Z=0.0000) are also not normally distributed. However, board gender diversity (Z=3.103; Prob>Z=0.05890) and cash flow return on investment (Z=3.241; Prob>Z=0.05980) are normally distributed since the probabilities of the z-statistics are not significant at 1% level.

Correlation analysis

Table 4.2: Correlation analysis of the relationship between board monitoring mechanisms and earnings management

	MJON	BODS	BODI	BGDV	CFOA
MJON	1.0000				
BODS	0.1500	1.0000			
BODI	-0.0373	0.0954	1.0000		
BOGD	0.1737	-0.1332	-0.1332	1.0000	
CFOA	0.2198	0.1259	0.1259	0.3921	1.0000

Source: Researcher’s computation (2023)

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In the case of the correlation between board monitoring mechanism and earnings management, the result in table 4.2 shows that there exists a positive and weak association between board size and earnings management as proxied by modified Jones discretionary accrual (0.15). There exists a negative and weak association between board independence and earnings management as proxied by modified Jones discretionary accrual (-0.04). There exists a positive and weak association between board gender diversity and earnings management as proxied by modified Jones discretionary accrual (0.17). Also, in the case of the control variable, table 4.2 shows that there exist a positive and moderate association between cash flow on operations and earnings management as proxied by modified Jones discretionary accrual (0.22). All association are seen to be weak, hence, there is no room to suspect of the presence of multicollinearity among the variables under study.

Regression analyses

Specifically, to examine the cause-effect relationships between the dependent variables and independent variables of the study, the study employed a regression technique. However, the study first carried out a pool OLS regression analysis and proceeded to validate the estimates of the OLS results. The result obtained are presented below

Table 4.3 Regression result of the effect of board monitoring mechanism on earnings management

	MJON Model (Pool OLS)	MJON Model (FIXED Effect)	MJON Model (RANDOM Effect)	MJON Model (LSDV Regression)
CONS.	1.185	12.896	3.851	11.118
	{0.073}	{0.000} ***	{0.003} **	{0.000} ***
BODS	-0.057	-0.237	-0.328	-0.237
	{0.925}	{0.000} ***	{0.002***}	{0.000} ***
BODI	0.126	-0.313	-0.241	-0.313
	{0.045}	{0.000} ***	{0.000}***	{0.000} ***
BGDV	-0.400	-0.422	-0.392	-.0422
	{0.000} ***	{0.000} ***	{0.000} ***	{0.000} ***
CFOA	0.052	-1.551	-0.294	-1.551
	{0.579}	{0.000} ***	{0.101}	{0.000} ***
F-stat/Wald Stat	8.99 {0.0000} ***	10.58 {0.0000} ***	34.62 {0.0000} ***	17.02 {0.0000} ***
R- Squared	0.2132	0.1531	0.1134	0.2435
VIF Test	3.02			
Hettero. Test	42.43 {0.0000} ***			
FE/RE		YES [15.53 {0.0000}]	YES [505.35 {0.0000}]	
Hausman Test		43.48 (0.0000) ***		

Note: (1) bracket {} are p-values; (2) **, *, implies statistical significance at 5% and 1% levels respectively**

Source: Researcher's STATA OUTPUT (2023)

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Table 4.3 represents the results obtained from the multiple regression analysis for this study. From the table it is observed from the pool OLS regression that the R-squared value of 0.2132 shows that about 21% of the systematic variations in earnings management of the pooled non-finance firms in Nigeria was jointly explained by the independent and control variables in the model. This implies that about 79% of the changes could not be explained by the variables in this study. The unexplained part of earnings management could be attributed to the exclusion of other independent variables that can affect earnings management but were captured in the error term. Furthermore, the F-statistic value of 8.99 and the associated p-value of 0.0000 shows that the specified model for the non-finance firms' sample on the overall is statistically significant at 1% level. This means that the regression model is valid and could be used for statistical inferences.

Panel Fixed and Random Effect Regression

Table 4.3, the results of the fixed and random effect regression. The F-statistic and Wald statistic value {10.58 (0.0000) and 34.62 (0.0000)} for fixed and random effect regression respectively shows that both models are valid for drawing inference since they are both statistically significant at 1%. Furthermore, in the case of the coefficient of determination (R-squared), the results from the panel regression shows that the R-Squared value of 0.1531 and 0.1134 for fixed and random effect regression respectively shows that about 15% and 11% of the systematic changes in earnings management of the pooled non-finance firms in Nigeria was jointly explained by the independent variables in both models respectively. The unexplained part of earnings management could be attributed to the exclusion of other independent variables that could affect earnings management but were captured in the error term. The study also conducted the Hausman specification test to decide which of the model is most preferred statistically for interpretation in this study.

Hausman specification test

The Hausman is based on the null hypothesis that the random effect model is preferred to the fixed effect model. Specifically, a look at the p-value of the Hausman test {43.48 [0.0000]} implies a 1% level of significance. This implies that the study should adopt the fixed effect panel regression results in drawing the conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. Following the above, the discussion of the fixed effect results became imperative in testing the hypotheses. However, fixed effect in itself is a problem due to the present of time and cross sectional effect that leads to unobserved heterogeneity. Hence, the study employs the Least Square Dummy Variable Regression to control for the unobserved heterogeneity in the fixed effect regression.

Least Square Variable Regression (LSDV)

In panel data models, dummy variables may be introduced to the least squares to explain the effect of each individual unit of a cross section which is unobserved but correctly specifies the model of relation. Just like the OLS, the Least Square Dummy Variable (LSDV) estimator is also applied to the equations in level form and all the cross section is applied in the actual estimation (Greene,

2009). It could give estimates of variances of α_{it} and ε_{it} separately. In the Least Square Dummy Variable estimation, the individual effect is assumed to be fixed over time in each individual. The fixed effects model is a useful specification for explaining cross section heterogeneity in panel data. Specifically, the study provided interpretation and make policy recommendation with this model. The model goodness of fit as captured by the Fisher statistics (17.02) and the corresponding probability value (0.0000) shows a 1% statistically significant level suggesting that the entire model is fit and can be employed for interpretation and policy implication. Furthermore, an R^2 value of 0.2435 indicates that about 24% of the systematic changes in earnings management of the pooled non-finance firms in Nigeria was jointly explained by the independent variables in both models respectively. The unexplained part of earnings management could be attributed to the exclusion of other independent variables that could affect shareholders' value added but were captured in the error term. This also means that about 76% of the variation in the dependent variable is left unexplained but have been captured by the error term.

Test of hypotheses

In this study, the hypotheses were tested using the result of the least square dummy variable regression in table 4.3.

Hypothesis one

H_{01}: Board size has no significant effect on earnings management of listed non-finance firms in Nigeria.

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board size [coef. = -0.237 (0.000)] has a significant negative effect on the earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. Therefore, the null hypothesis which states that board size has no significant effect on earnings management of listed non-finance firms in Nigeria should be rejected while the alternate should be accepted. The result implies that a unit increase in the number of board members could significantly reduce earnings management of listed non-finance firms in Nigeria during the period under study.

Hypothesis two

H_{02}: Board independence has no significant effect on earnings management of listed non-finance firms in Nigeria.

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board independence [coef. = -0.313 (0.000)] has a significant negative effect on the earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. Therefore, the null hypothesis which states that board independence has no significant effect on earnings management of listed non-finance firms in Nigeria should be rejected while the alternate should be accepted. The result

implies that a unit increase in the number of independent board members could significantly earnings management of listed non-finance firms in Nigeria during the period under study.

Hypothesis three

H_{03}: Board gender diversity has no significant effect on earnings management of listed non-finance firms in Nigeria.

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board gender diversity [coef. = -0.0422 (0.000)] has a significant negative effect on the earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. Therefore, the null hypothesis which states that board gender diversity has no significant effect on earnings management of listed non-finance firms in Nigeria should be rejected while the alternate should be accepted. The result implies that a unit increase in the number of female board members could significantly reduce earnings management of listed non-finance firms in Nigeria during the period under study.

DISCUSSION OF FINDINGS

Board size and earnings management

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board size [coef. = -0.237 (0.000)] has a significant negative effect on the earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. This implies that a unit increase in the number of board members could significantly reduce earnings management of listed non-finance firms in Nigeria during the period under study. The board size is the totality of all the directors either independent and executive. According to the Companies and Allied Matters Act (CAMA) 2020 as amended, every registered company must have at least two board directors. This implies that the number of directors on the board is not fixed or limited as long as its above two. However, it sets out a general principle that the board should be of sufficient size relative to the scale and complexity of the company's operations (SEC code, 2011). This suggests that even the code admits that a company's board size may probably affect its performance. However, the study by Zgarni and Fedhila (2022) did not support our findings as they noted that board size, board duality, as well as the number of meetings carried out per year by the board of directors, proved to have no significant effect on real earnings management.

Board independence and earnings management

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board independence [coef. = -0.313 (0.000)] has a significant negative effect on the earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. This implies that a unit increase in the number of independent board members could significantly earnings management of listed non-

finance firms in Nigeria during the period under study. Board independence means the percentage of independent non-executive directors in the total number of members in the board (Iraya et al., 2015). The independent directors play a major role in arbitrating the conflicts between management and shareholders and enhancing the transparency and compliance of accounting reports. However, the study by Zgarni and Fedhila (2022) did not support our findings as they noted that board independence increases the real earnings management. As for board size, board duality, as well as the number of meetings carried out per year by the board of directors, they prove that they have no significant effect on real earnings management. But the findings of our study was supported by Alves (2011) who indicated that a high proportion of non-executive directors on the board lower the magnitude of discretionary accounting accruals implying that boards consisting of more non-executive members' limit earnings management practices. Also, Rajeevan and Ajward (2020) reported that firms with a higher proportion of non-executive directors could constrain EM.

Board gender diversity and earnings management

The results obtained from least square dummy variable (LSDV) regression model in table 4.4 revealed that board gender diversity [coef. = -0.0422 (0.000)] has a significant negative effect on earnings management of listed non-finance firms in Nigeria when measured using the Modified Jones discretionary accruals during the period under study. This implies that a unit increase in the number of female board members could significantly reduce earnings management of listed non-finance firms in Nigeria during the period under study. The outcome of this study is supported by the work Gull, Nekhili, Chtioui, and Nagati (2022) who found a negative relationship between female directors and the magnitude of earnings management. Also, Chen (2015) also noted that female directors were less aggressive in investment and acquisition decisions and have the capacity to restrain unethical practices such as EM. However, the findings of this is contrary to the work of Jusup and Sambuaga (2022) who noted that the percentage of women on the board of directors does not affect the company's earnings management practice but rather the presence of women in the governance function can reduce agency problems in companies.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The main objective of this study was to examine effect of board monitoring mechanisms on earnings management drawing samples from non-finance firms listed on the floor of the Nigeria Exchange Group from 2012 to 2021 financial year. The results obtained from the data analysis shows that board size, has a significant negative effect on the earnings management of listed non-finance firms in Nigeria. Board independence has a significant negative effect on the earnings management of listed non-finance firms in Nigeria. This implies that a unit increase in the number of independent board members could significantly earnings management of listed non-finance firms in Nigeria during the period under study. Board gender diversity has a significant negative effect on the earnings management of listed non-finance firms in Nigeria. This implies that a unit

increase in board size, board independence and the number of female board members could significantly reduce earnings management of listed non-finance firms in Nigeria during the period under study. Thus, from the findings of this it was concluded that effective board monitoring mechanism can significantly curb earnings management that may be instituted to manipulate accounting figures. Based on the findings of this study, it was recommended that the board size of non-finance firms in Nigeria should not be less than ten (10) members since the corporate governance code is not specific on the size of company's board size. This is because an enlarged board comes with diversification of experience, knowledge and skill that can help detect earnings management strategies put up by managements. Independent directors who do not have any affiliation with management of the companies should constitute about 80% of the total board size as they enhance they transparency and compliance to accounting reports. The female board members s should constitute half the board size as the presence of women in the board generates an advantageous and more detailed decision- making process for firms because women often exert more effort on their duties compared to male counterpart. Also, women have the capacity to restrain unethical practices such as earnings management.

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