# MODERATING EFFECT OF INSTITUTIONAL OWNERSHIP ON BOARD DIVERSITY AND EARNINGS MANAGEMENT OF QUOTED SERVICES FIRMS IN NIGERIA

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***ABSTRACT***

*The practice of earnings manipulation undermines the credibility of financial reporting, leading to a misrepresentation of a firm's financial health and potentially misleading stakeholders. Despite global efforts to enhance corporate governance frameworks, including the emphasis on board diversity, the effectiveness of these measures in curbing earnings management varies across different contexts. This study examined the moderating effect of institutional ownership on board diversity and earnings management of quoted services firms in Nigeria. The population of this study consists of all the twenty-two (22) quoted service firms in Nigeria while seventeen (17) service firms were used as the sample size. The hypotheses were tested using a random effect regression model after conducting diagnostic tests. The results show that board size has a significant negative effect on earning management of quoted service firms in Nigeria. However, the study shows that board meeting frequency has an insignificant positive effect on earnings management of quoted service firms in Nigeria. Also, the study further shows that institutional ownership has significantly moderates the relationship between board size and earning management of quoted service firms in Nigeria. Also, the study found that institutional ownership does not significantly moderate the relationship between board meeting frequency and earning management of quoted service firms in Nigeria. The study recommends that the that service firms in Nigeria should consider increasing their board size to enhance the effectiveness of their governance structures. A larger board brings diverse expertise and viewpoints that improve decision-making and monitoring of financial activities. Firms should ensure that board expansion is done strategically, focusing on the inclusion of members with diverse skills, relevant experience, and a commitment to ethical financial reporting.*

**Keywords: Board Size, Board Diversity, Board Meeting Frequency, Earnings Management, Institutional Ownership**

## INTRODUCTION

Earnings management, which is defined as "the process of managing a company's reported earnings to achieve a predetermined goal," is a practice that has received considerable attention on a global scale, considering its implications on corporate governance and investor confidence. This practice may adversely affect the transparency of financial reporting, which may, in turn, affect stakeholders adversely. The board of directors is considered to be the highest governing authority of a company, and hence, its role is very significant in controlling and monitoring earnings management practices. Board diversity, including factors such as board size, independence, financial expertise, gender diversity, and meeting frequency, is now considered to be a very important factor for boards to address the problem of earnings management (Abubakar et al., 2018). The presence of institutional ownership, defined as "institutional investors as significant shareholders," may also affect this relationship, especially for quoted services firms in Nigeria.

In Africa, the relevance of board diversity is being acknowledged in the pursuit of enhanced corporate governance. The African business environment is characterized by distinct challenges, such as relatively lax regulatory frameworks and divergent stages of corporate governance development (Adeyemi & Fagbemi, 2023). These circumstances render the significance of board diversity even more important in countering earnings management. In Nigeria, the emphasis on board diversity has been heightened, particularly in the wake of corporate scandals and financial crises that have undermined investor confidence. Nigerian companies, especially in the service industry, are operating in an environment where regulatory supervision is in the process of development, and corporate governance is still evolving. In this scenario, the board structure and its operations assume significance in suppressing earnings management.

Corporate governance and earnings management have emerged as important issues of concern among the stakeholders of the financial markets, especially with regard to service firms. Earnings management, which involves the manipulation of financial reports with the intention of achieving certain goals, can greatly affect the financial position of the firm, leading to improper decisions by the stakeholders. Diversity of the board, which is a vital component of corporate governance, helps to address the issue of earnings management in the organization (Amadi & Yusuf, 2023).

Board size, as an important aspect of board diversity, has been examined in terms of its association with corporate governance and earnings management. Large boards are thought to offer greater scope in terms of providing diverse expertise, thereby ensuring effective monitoring and control over managerial activities. Yet, in terms of its association with earnings management, there are mixed findings. Large boards are found to be effective in earnings management, while there are other findings that suggest large boards are not effective in earnings management due to coordination problems (Pillai & Al-Malkawi, 2018; Lakhal, 2020). The number of meetings that the board holds can be another factor that may affect earnings management. For instance, more meetings may make the directors more aware of the activities going on in the firm, which may make them less likely to manipulate earnings. Research has suggested that boards that meet more frequently can monitor their firm better (Vafeas, 1999; Kent et al., 2016).

Another important factor is institutional ownership, which is a measure of the percentage of a firm's shares held by institutional investors. Institutional ownership is also important for corporate governance because these investors are better placed to influence management to act in a manner that is most desirable for shareholders, hence reducing earnings management. The moderating effect of institutional ownership on the relationship between board diversity and earnings management is also gaining attention because institutional ownership can influence the effectiveness of board diversity in controlling earnings management (Shleifer & Vishny, 1986; Bushee, 1998).

The objective of this study is to investigate the moderating impact of institutional ownership on the relationship between board diversity and earnings management in quoted services firms in Nigeria. It specifically aims to find out the impact of board size and board meeting frequency on earnings management, with emphasis on the moderating role of institutional ownership.

Earnings management is a critical issue in corporate governance, especially in relation to quoted services firms in Nigeria. The issue of earnings management is a problem because it compromises corporate governance. The process of earnings management undermines corporate governance because it creates a false representation of a firm's financial position. Despite all the global efforts to strengthen corporate governance practices, including those relating to board diversity, there are divergent opinions regarding their effectiveness in addressing earnings management in different contexts (Abdullahi et al., 2021).

For instance, in Nigeria, where corporate governance is still in its development stage, factors such as a lack of effective oversight by boards contribute to the problem of earnings management. This, therefore, calls for a more detailed understanding of the relationship between board diversity and earnings management, considering that, for instance, a larger board might offer a wider scope of skills, but at the same time, might also be characterized by problems of coordination, hence making its oversight function less effective (Adeyemi & Fagbemi, 2023).

Another important issue is the board meeting frequency, which is also crucial in affecting the board's ability to oversee the management of the firm, as well as the accuracy of the firm's financial reports. However, in Nigerian firms, the infrequent meetings of the board make it difficult for the board to manage the firm, thereby increasing the risk of earnings management (Obamuyi & Edogbanya, 2023).

Institutional ownership has been suggested as a possible moderating element that may strengthen the efficacy of board diversity in the management of earnings. This is because institutional investors, with their substantial financial interests, are more inclined towards ensuring good corporate governance practices. However, the role of institutional ownership in moderating the relationship between board diversity and earnings management in Nigeria is an area that is not well explored. Considering the challenges that quoted services firms in Nigeria face, the moderating role of institutional ownership in the relationship between board diversity and earnings management is important in the development of effective corporate governance practices (Adewale et al., 2021).

The empirical research, for example, Imaowaji and Ogboin (2022) and Eman et al. (2022), carried out in Nigeria used data from both pre- and post-IFRS implementation in Nigeria, which impacts the validity of the results due to the impact created in financial reporting as a result of the International Financial Reporting Standard implementation in Nigeria. Additionally, many research studies carried out in this field have had mixed results; therefore, the need to introduce institutional ownership as a moderator in this current study. The identified gaps in the literature require further research in this field; therefore, the need for this study: the moderating role of institutional ownership on board diversity and earnings management of quoted services firms in Nigeria. This is intended to update the literature up to 2023, using the correct panel regression method, and focusing only on the periods of IFRS implementation in Nigeria.

The main objective of this study is to examine the moderating effect of institutional ownership on board diversity and earnings management of quoted services firms in Nigeria. The specific objectives are to: (i) determine the effect of board size on earnings management of quoted service firms in Nigeria; (ii) evaluate the effect of board meeting frequency on earnings management of quoted service firms in Nigeria (iii) determine the moderating effect of institutional ownership on board size and earnings management of quoted service firms in Nigeria; and (iv) evaluate the moderating effect of institutional ownership on board meeting frequency and earnings management of quoted service firms in Nigeria.

The formulated hypotheses are in line with the specific objectives as follows: $Ho_1$: Board size has no significant effect on earnings management of quoted service firms in Nigeria; $Ho_2$: Board meeting Frequency has no significant effect on earnings management of quoted service firms in Nigeria; Ho3: Institutional ownership has no significant moderating effect on board size and earnings management of quoted service firms in Nigeria; $Ho_4$: Institutional ownership has no significant moderating effect on board meeting frequency and earnings management of quoted service firms in Nigeria.

## REVIEW OF RELATED LITERATURE

### Conceptual Framework

The conceptual framework for the research as adapted from Yusuf (2020) includes two proxies (Board Size and Board Meeting Frequency) as the independent variable and a proxy (Earnings Management) as the dependent variable with a moderating variable of Institutional Ownership.

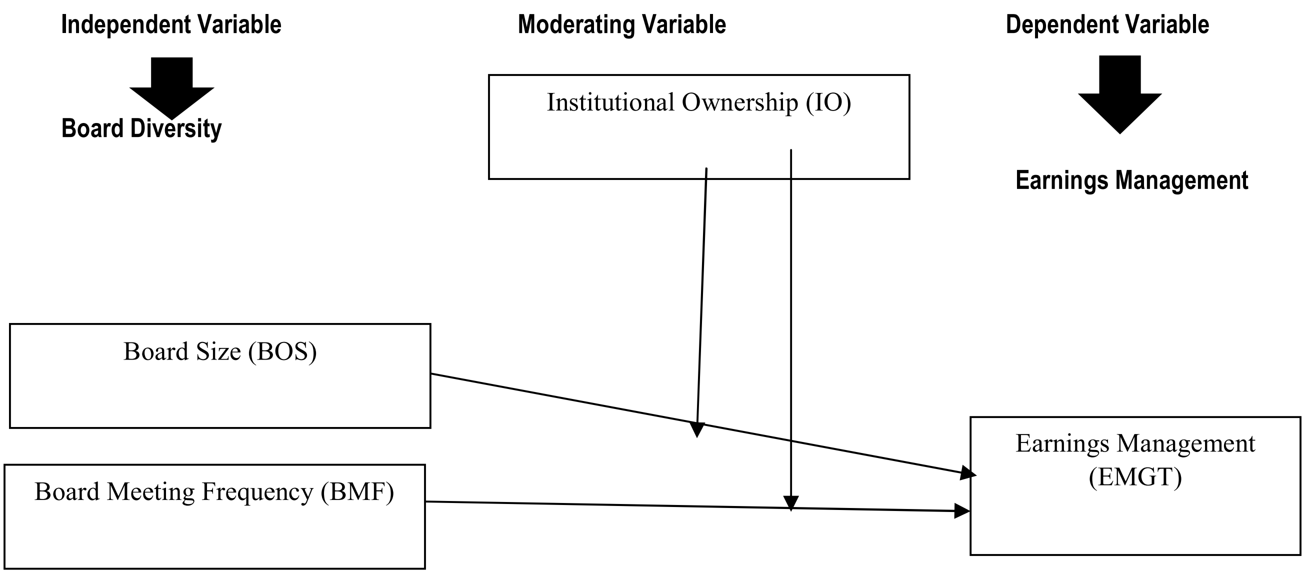



**Figure 1: Conceptual Framework of the Study**

### Earnings Management

Earnings management has been generally defined as the use of managerial discretion in financial reporting to influence reported earnings. Dechow et al. (2021) have defined it as the manipulation of financial reports to achieve certain objectives like meeting earnings targets or influencing stock prices, which is done by exploiting the flexibility of accounting rules. Healy and Wahlen (2020) have also defined earnings management as accounting decisions made by managers to mislead stakeholders about a firm's economic performance or to influence contractual outcomes related to accounting numbers.

According to Jones et al. (2022), earnings management can be described as management's action in the financial reporting process to influence financial reports, and it may involve both permissible discretionary actions and aggressive actions that push the boundaries of accounting rules. Scott (2023) further argues that earnings management can be achieved through various actions such as revenue recognition timing, expense deferral, or provisions and reserves adjustments, and he highlights that although some of these actions are within the scope of accounting rules, others can lead to unethical financial reporting. Xie et al. (2024) further argue that earnings management can be described as the use of discretion in financial reporting and transaction design to influence views of a firm's financial condition, and they highlight that although earnings management is often necessary due to market pressure, compensation incentives, or the need to smooth earnings, excessive earnings management can misrepresent a firm's financial condition. Earnings management, as used in this research, is the manipulation of financial reporting by company executives to achieve predetermined financial objectives.

**Board Size**

Board size, generally speaking, is the number of directors, both executive and non-executive, that make up the overall board of a particular organization. Abdullahi et al. (2021) highlight that the size of the board is important because it impacts the overall dynamics of the board. In addition, it can be noted that even though a larger board can be advantageous because of the overall information it can provide, it can also be a disadvantage because of the overall complexity that comes with it. In the same vein, Adeyemi and Fagbemi (2023) highlight that the size of the board varies from one organization to another. In addition, smaller boards tend to be more cohesive.

According to Adewale et al. (2021), board size has implications for the monitoring role of the board and its ability to ensure checks and balances on the management. The authors noted that while large boards may be inefficient, small boards may lack diversity of thought. Ofoegbu and Odoemelam (2021) also defined board size as the total number of directors on the board, including both independent and non-independent directors. The authors noted that while larger boards may improve governance through diversity, the advantages tend to decrease beyond an optimal point. In the Nigerian scenario, Okoye et al. (2023) listed board size as one of the determinants of board effectiveness, especially in emerging markets where the structure of governance is still evolving. The authors noted that a well-sized board improves representation and facilitates effective decision-making. In line with these perspectives, this study defines board size as the total number of directors, both executive and non-executive, on a firm's board.

**Board Meeting Frequency**

Board meeting frequency is the number of times the board of directors of a firm holds meetings in a given period of time, which is normally a financial year. According to Ahmed and Hossain (2020), board meetings should be held from time to time for the effective monitoring of management, decision-making, and dealing with issues that arise from time to time. Brown and Caylor (2021) also observe that boards that hold board meetings frequently are more active and vigilant.

Duru et al. (2022) and Hermalin & Weisbach (2023) highlight that the meeting frequency of the board reflects the diligence of the board. The meeting frequency of the board helps to ensure that the directors communicate effectively with each other, monitor the management of the organization, and ensure that the directors are well informed when making strategic decisions. Mishra & Mohanty (2024) add that the meeting frequency of the board is vital, especially during times of uncertainty. This study, therefore, defines the meeting frequency of the board as the regularity with which the directors of a particular organization meet to ensure the discharge of their duties.

**Theoretical Framework**

**Agency Theory**

- **Explanation**: The theory of agencies, developed by Jensen and Meckling (1976), explains the conflicts of interest between the principal and agents of a company. The theory indicates that managers may adopt opportunistic behaviors, such as earnings management, to achieve their personal objectives instead of those of shareholders when there is a separation between ownership and control.
- **Application**: This theory is pertinent to the understanding of how board attributes (such as board size, independence, financial expertise, gender diversity, and meeting frequency) can offset the problem of agency and earnings management. The mediating role of institutional ownership as a monitoring mechanism is also supported by agency theory.**Resource**

**Dependence Theory**

- **Explanation**: Resource dependence theory was first proposed by Pfeffer and Salancik (1978). According to this theory, organizations are dependent on external resources, and the role of the board of directors in acquiring these resources is very vital. This theory also implies that having a diverse board can influence the acquisition of valuable resources, which can have a positive influence on the firm's performance.
- **Application**: This theory argues in favor of analyzing board diversity (size, independence, accounting expertise, and gender diversity) and its effect on earnings management. This theory also proposes that institutional investors could affect the relationship between board diversity and earnings management as a source of resource access.

**Empirical Review**

However, a number of empirical researches have been conducted to investigate the association between board characteristics and earnings management in various industries and countries, but with inconclusive results. In Nigeria, Muktar et al. (2024) examined the characteristics of deposit money banks from 2012 to 2021 and concluded that board independence is significantly associated with a decrease in earnings management, but board size is insignificant. Likewise, Benjamin and Murtala (2023) found that board gender diversity and board expertise are significantly associated with a decrease in earnings management among listed consumer product companies, but board independence and board meetings are insignificant. Imaowaji and Ogboin (2022) examined listed healthcare companies and concluded that board independence and board meeting frequency are significant in explaining earnings restatement. Kajola et al. (2020) and Ikumapayi et al. (2018) also found that board size and board independence are significant in limiting earnings management among Nigerian companies, but other characteristics such as board meetings and gender diversity are insignificant. Although important, the aforementioned researches in Nigeria were generally conducted using data that ended between 2019 and 2021, which is relatively old.

Moreover, evidence from other jurisdictions also shows mixed findings. Eman et al. (2022) found that in Egypt, larger boards have a negative effect on real earnings management, whereas more frequent board meetings have a positive effect on earnings management. Rishiram and Gurjeet (2022) found that in FTSE 350 firms, independence and females on the board have a significant influence on discretionary accruals; however, board size and more frequent board meetings have no influence on discretionary accruals. Cho and Chuneyoung (2022) found that in Vietnam, larger boards have a negative influence on earnings management; however, the influence of other board attributes related to ownership was mixed. Peter et al. (2022) found that in East African firms, larger boards have a positive influence on earnings management; however, independence, females on the board, financial expertise on the board have a negative influence on earnings management, and firm size moderates these relationships.

Other research works also show ambiguous results. The research works of Muhammad & Musa (2018) and Abubakar et al. (2018) concluded that certain board attributes, such as women directors and board size, are negatively related to earnings management in Nigeria's banking sector, while audit committee and board expertise are sometimes related to increased earnings management. However, Daniel et al. (2019) concluded that board size is not significantly related to real earnings management in Nigeria, while Jessie & Jeyaraj (2019) concluded that board size and CEO duality are negatively related to earnings management in the UK setting. The research works of Muhammed (2020), Tian (2020), and Nahid & Nader (2016), conducted on Pakistan, China, and Iran, respectively, also show that board attributes are related to earnings management to a greater extent, but this relationship varies significantly across different settings. Overall, all research works show ambiguous results, a heavy dependence on non-Nigerian data, and a heavy dependence on older data, which highlights the need for newer data to be considered for Nigeria's economic scenario.

**Moderating Effect of Institutional Ownership on Board Diversity and Earnings Management**

Recent studies conducted in Nigeria have offered consistent findings regarding the moderating impact of institutional ownership on the association between board diversity and earnings quality. In this regard, the study conducted by Ojo and Chukwu (2023) focused on Nigerian service firms listed between 2018 and 2022 and utilized the Generalized Least Squares regression and interaction analysis to investigate the impact of institutional ownership on the association between board diversity and earnings quality. The findings of the study indicated that institutional ownership moderates the association between board gender and educational diversity and earnings management; nevertheless, board size was not significant in this regard. Overall, the study highlighted the vital role of institutional investors in improving the quality of earnings and recommended that policymakers should implement measures to increase institutional involvement in corporate governance practices. The study utilized recent data and, therefore, reflects the current economic conditions of Nigeria.

Likewise, the study conducted by Amadi & Yusuf (2023) utilized the Generalized Least Squares Regression method for the dataset of service sector firms between 2017 and 2022, where the authors found that institutional ownership reinforces the negative relationship between board diversity and earnings management, specifically in terms of gender and educational diversity. Again, board size was found to be insignificant in the model. The study suggested that firms should use institutional ownership to support board diversity initiatives in terms of improving the quality of financial reporting. The study is found to be relevant in terms of recency.

Previous study results by Eze & Okoro (2021) over the 2015-2020 period also found that institutional ownership moderates the relationship between board gender diversity and earnings management, resulting in lower earnings management practices. However, board size diversity was found to be insignificant unless it was moderated by institutional ownership. Adewale & Okeke (2020) found similar results over the 2015-2019 period, where institutional ownership reinforces the relationship between board gender diversity in reducing earnings management, while board size diversity was found to be insignificant in the model. Although the above study results are informative, they are, however, based on relatively older data, thereby emphasizing the need for more current study results.

## METHODOLOGY

An ex post facto design was employed in this study to examine the research questions. The population for this study includes all the twenty-two (22) quoted service firms on the Nigerian Stock Exchange as of the 31st December 2023 calendar year. The list is attached as appendix A. The sample size for this study includes all the firms quoted in the services sector, at least one year before the implementation of International Financial Reporting Standards (IFRS) totaling seventeen (17) firms in Nigeria covering 2012-2023 based on the filter criteria stated below. The filter criteria are stated thus: (i) A firm must have been quoted on the floor of the Nigerian Exchange (NGX) group at least a year before the implementation of IFRS in (2012), and (ii) A firm must be quoted on the Nigerian Exchange group and its shares are often traded on the floor of the exchange for the periods covered by the study. Based on this, the sample size for this study is 17 firms as attached in appendix B. The data was extracted from the audited financial reports/statements of the sampled firms for a specified period of this study. The technique of data analysis employed for this study is a pooled ordinary least square regression model. This study employed this technique to examine the board diversity, measured by board size and board meeting frequency, moderated by institutional ownership, on earnings management of quoted service firms in Nigeria. The data was analyzed using STATA 15, and the results were employed to test the formulated hypotheses for this study. A series of robustness tests were conducted to test the validity of this research study.

### Model Specification

This study used two models to attain the objectives of the study. The first model was used to show the direct relationship between board size (BOS) and board meeting frequency (BMF). The moderating variable was institutional ownership (IO) with earnings management, but without moderation. The second model was used to show the indirect relationship between board size (BOS) and board meeting frequency (BMF); this model was used to show the moderating variable of institutional ownership (IO) with earnings management. The first model was used to show the direct relationship between board size (BOS) and board meeting frequency (BMF); the moderating variable was institutional ownership (IO) with earnings management as adapted from Adewale and Okeke (2020) as follows:

EMGT = $f$(BOS, BFE, IO)

Econometrically the equation is express thus:

$EMGT_{it} = \alpha + \beta_1 BO_{it} + \beta_2 BFE_{it} + \beta_3 IO_{it} + e_{it}$……. (Model I)

Where:

$\beta_1$ and $\beta_2$ = Coefficients of proxies of independent variable.

$\beta_3$ = A coefficient of moderating variable

EMGT = Earnings Management

α = Constant

BOS = Board Size

BMF = Board Meeting Frequency

IO = Institutional Ownership

e = Error term

i = Firms

t = Periods and

$f$ = Functional relationship.

The second model is specified to determine the indirect relationships of independent variables and dependent variables, considering the moderating effect of institutional ownership. However, in the second model, the researcher was able to capture both the direct and indirect relationships of board size (BOS) and board meeting frequency (BMF); and these variables were moderated by institutional ownership (IO) to affect EMGT. The model was specified to;

EMGT = $f$(BOS + BMF + IO + IO*BOS + IO*BMF

The above function is rewritten econometrically, as follows:

$EMGT_{it} = \alpha + \beta_1 BOS_{it} + \beta_2 BMF_{it} + \beta_3 IO_{it} + \beta_4 IO^*\beta_4 BOS_{it} + \beta_5 IO^*\beta_5 BMF_{it} + e_{it}$…… (Model II)

Where:

EMGT = an indicator representing earnings management (proxy for dependent variable);

α = Intercept term (a constant);

$\beta_1$, $\beta_2$, $\beta_4$ and $\beta_5$ = Coefficients of the proxies of independent variable;

$\beta_3$ = Coefficient of a moderating variable.

A-priori expectations: $\beta_1$, $\beta_2$, $\beta_4$ and $\beta_5 < 0$

These a-priori expectations mean that increase in board diversity will reduce earnings management of quoted service firms in Nigeria.

**Variables Measurement and Justification**

**Table 1** below explains the variables under study.

| Variable | Acronym | Type of variable | Measurement | Justification |
|---|---|---|---|---|
| Earnings Management | EMGT | Dependent | Absolute discretionary accruals, calculated using Modified Jones model. | Imaowaji and Ogboin (2022) and Eman *et al.* (2022). |
| Board Size | BOS | Independent | This is the total number directors on the board. | Eman *et al.* (2022) and Rishiram and Gurjeet (2022). |
| Board Meeting Frequency | BMF | Independent | This is the total number of meetings held by the board of directors in a year. | Abubakar *et al.* (2018), Imaowaji and Ogboin (2022) and Rishiram and Gurjeet (2022). |
| Institutional Ownership | IO | Moderator | This is the percentage of share held by the institutional investors in a firm. | Ojo and Chukwu (2023) and Amadi and Yusuf (2023). |

**Source:** Researcher's compilation, 2024.

## RESULTS AND DISCUSSION

Appendix C indicates the data employed to investigate the moderating effect of institutional ownership on board diversity and earnings management for quoted service firms in Nigeria for a period of twelve (12) years (2012-2023). The data analysis employed descriptive statistics, Shapiro-Wilk normality test, Pearson correlation, Heteroskadasticity test, Breusch & Pagan Lagrange Multiplier test, and Pooled Ordinary Least Square Regression.

### Descriptive Statistics

Table 2 below is the descriptive statistics that summarise the entire data set.

| Variable | Obs | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| EMGT | 204 | 0.014 | 0.017 | 0.001 | 0.089 |
| BOS | 204 | 8.966 | 2.251 | 5 | 18 |
| BMF | 204 | 4.417 | 1.082 | 2 | 8 |
| IO | 204 | 39.224 | 18.517 | 8.55 | 86.1 |

**Source:** Researcher's Computation (2024) Using Stata 15

From the table, we can see that the minimum value of earnings management (EMGT) is 0.001, the maximum value is 0.089, while the mean value is 0.014. This shows that the average value is included in the range, providing an indication of an average spread over the period of study. The standard deviation is 0.017, which is higher than the mean, providing an indication that the variability in earnings management is high among the firms. From the table above, it is also evident that the minimum value of the board size (BOS) is 5, the maximum value is 18, while the mean value is 8.966. It is evident that the mean value is included in the range, which gives an indication of an average distribution over the study period.

Moreover, the standard deviation of 2.251 is lower than the mean, which gives an indication that the board size is moderately dispersed over the study period. In the same regard, the board meeting frequency (BMF) ranges from 2 meetings to 8 meetings, while the average value is 4.417 meetings per year. It is evident that the standard deviation of 1.082 is lower than the mean, which gives an indication of low dispersion in the board meeting frequency.Institutional ownership (IO) ranges from 8.55% to 86.10%, while the average value is 39.224%. It is evident that the standard deviation of 18.517 is lower than the mean, which gives an indication of moderate variability in the institutional ownership of the sampled firms.

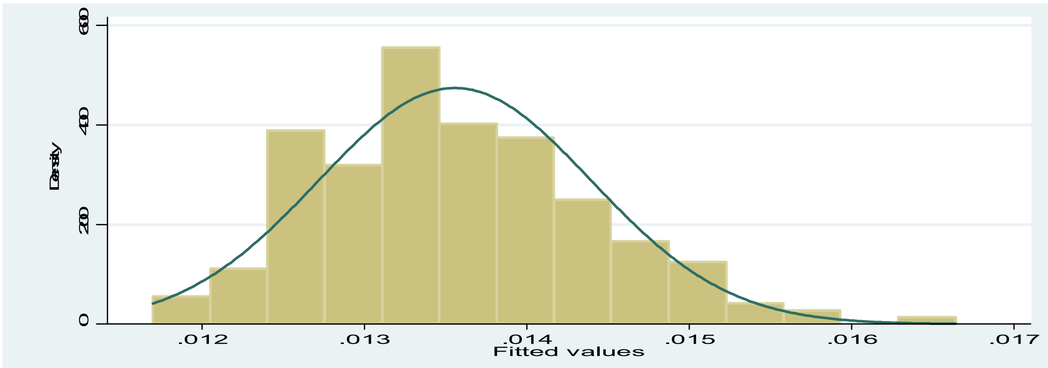
### Shapiro-Wilk Normality Test

Table 3 and figure 2 below shows the results obtained from the normality test that was conducted with the use of Shapiro-Wilk normality test and normal distribution curve. The decision rule for this test is that if P-Value > 0.05, the residual is normally distributed, but if P-Value = <0.05, the residual is not normally distributed.

| Variable | Obs | W | V | Z | Prob>Z |
|---|---|---|---|---|---|
| Residual | 204 | 0.98003 | 3.031 | 2.554 | 0.00533 |

**Source:** Researcher's Computation using STATA 15 software

Figure 2: Normal Distribution Curve




From table 3 above, the residual and Z-value of 2.554 and the probability of value of 0.005 that is less than 0.05, which signifies that the residual is normally distributed around the mean. This is further collaborated by the normal distribution curve shown in figure 2 above. This implies that one of the basic assumptions of linear regression technique that allows only normally distributed residual has not been satisfied.

**Correlation Matrix**

Table 4 below is the Pearson correlation matrix for the data set to show the extent of interdependent variables.

| Variable | EMGT | BOS | BMF | IO |
|---|---|---|---|---|
| EMGT | 1 | | | |
| BOS | 0.0336 | 1 | | |
| BMF | 0.0295 | 0.1515 | 1 | |
| IO | 0.0277 | -0.0747 | 0.2486 | 1 |

**Source:** Researcher's Computation (2024) Using Stata 15

On the other hand, the correlation matrix is employed to investigate the strength of association between the dependent variable and the independent variables, as well as the association between the independent variables, to identify the existence of any potential multicollinearity. As indicated in Table 4, the correlation coefficients generally show weak associations between the variables.For example, the relationship between the size of the board (BOS) and earnings management (EMGT) is weakly positive, with a correlation coefficient of 0.0336, implying that the association between the two variables is approximately 3%. Likewise, the relationship between the number of board meetings (BMF) and earnings management (EMGT) is weakly positive, with a correlation coefficient of 0.0295. In addition, the relationship between institutional ownership (IO) and earnings management (EMGT) is weakly positive, with a correlation coefficient of 0.0277. In addition, the correlation between the independent variables is low, with all the correlation coefficients significantly lower than the threshold of 0.85 set by Gujarati (2003). This shows that the model satisfies one of the assumptions of linear regression.

**Heteroskedasticity Breusch-Pagan Test**

Heteroskedasticity Breusch-Pagan tests whether or not the estimated variance of the residuals from regression is dependent on the values of the independent variables.

Table 5 below shows the diagnostic test results using Heteroskedasticity Breusch-Pagan

| Type of test | Chi2 | P-Value |
|---|---|---|
| Heteroskedasticity Breusch-Pagan | 0.23 | 0.6346 |

**Source:** Researcher's Computation (2024) Using Stata 15

The Heteroskedasticity Breusch-Pagan is a statistical test that is used to determine whether the variance of a residual for a particular variable is constant or non-constant over time. Table 5 indicates that the null hypothesis, which states that there is no constant variance in the model, is rejected. This is because, for the model, the Chi2 value of 0.23 and the probability value of 0.6346 are statistically insignificant at all levels, implying that there is no presence of heteroskedasticity in the model.

**Breusch and Pagan Lagrangian Multiplier Test**

Based on the result of the regression for the Random Effect Model, a test for Pooled Ordinary Least Square Regression and Random Effect Model was conducted to get an idea of an actual test to be conducted between Pooled Ordinary Least Square Regression and the Random Effect Model. The result of the Breusch and Pagan Lagrangian Multiplier test indicates that Pooled Ordinary Least Square Regression is preferred to REM. This is based on the chibar2 value of (0.12) and the probability of (0.3609) as shown in table 6 below.

**Table 6:** Breusch and Pagan Lagrangian Multiplier Test

| Variable | Chibar2 | P-Value |
|---|---|---|
| ROA | 0.13 | 0.3609 |

**Source:** Researcher's Computation (2024) using STATA 15 software

**The Moderating Effect of Institutional Ownership on Board Diversity and Earnings Management**

According to Baron and Kenny (1986), moderation analysis involves the estimation of a sequence of regression equations to establish the impact of a third variable on the relationship between an independent variable and a dependent variable. The process involves the assessment of the relationship between the independent variable and the dependent variable, the relationship between the moderator and the dependent variable, and finally the relationship between the independent variable and the moderator on the dependent variable. The moderating variable works by conditioning the nature of the relationship between the independent and dependent variables. Significance is demonstrated by the statistical significance of the moderator or the interaction between the moderator and the independent variable while controlling for the main effects.

In order to test for moderation formally, it is important to demonstrate that the nature of the relationship between the independent variable and the dependent variable shifts at various levels of the moderator variable. This is accomplished by adding a term representing the interaction between the independent variable and the moderator to a regression equation and determining whether it is significant (Baron & Kenny, 1986). Aiken et al. (1991) also recommend adding a baseline regression model with both independent variables and moderators before adding the interaction term to the model. When the interaction term is found to be significant, it is a demonstration of moderation effects. When both the interaction term is found to be significant while the independent variable is still significant, partial moderation is demonstrated; when the interaction term is found to be significant while the independent variable is no longer significant, full moderation is demonstrated. The results for testing for moderation are presented in Table 7.

**Table 7:** Pooled Ordinary Least Square Regression Results: Institutional Ownership Moderating Effect: Board Diversity and Earnings Management

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| Variables | Coefficient | t-value | P-value | Coefficient | t-value | P-value |
| BOS | -0.0076 | -2.14 | 0.033 | 0.0252 | 2.57 | 0.011 |
| BMF | 0.0005 | 1.34 | 0.183 | -0.0026 | -1.48 | 0.140 |
| IO | -0.0387 | -5.07 | 0.000 | | | |
| IO*BOS | | | | -0.0071 | -3.74 | 0.000 |
| IO*BMF | | | | 0.0007 | 1.85 | 0.065 |
| Constant | 0.4369 | 9.87 | 0.000 | 0.2590 | 6.59 | 0.00 |
| Adj. R-Squared | 0.5732 | | | 0.5921 | | |
| Wald Chi2 | 111.76 | | | 120.65 | | |
| Prob>Chi2 | 0.0000 | | | 0.0000 | | |

Note: Model 1 (IVs, MV and DV) and Model 2 (IVs, MV*DV). *p = < 0.05, **p = 0.01

The coefficients in Table 7 under Model 1 indicate that the coefficient of determination ($R^2$) is equal to 0.5732. This implies that board size and board meeting frequency jointly explain about 57% of the total variation in earnings management during the period under investigation. Moreover, the Wald chi-square value of 111.76 with a probability value of 0.0000 indicates that the model is statistically significant and reliable. At the individual level, the coefficient indicates that board size is statistically significant with a p-value of 0.033, whereas board meeting frequency is statistically insignificant with a p-value of 0.183.

As indicated in Model 2 in Table 7 above, the coefficient of determination ($R^2$) improved to 0.5921 after the inclusion of the interaction term between institutional ownership. This indicates that there was a moderating effect on the model. This implies that board size and board meeting frequency, in combination with institutional ownership, jointly explain about 59% of the variation in earnings management during the period under investigation. Moreover, the Wald chi-square value of 120.65 with a probability value of 0.0000 indicates that the model is statistically significant and reliable.

**Test of Hypotheses**

In examining the moderating effect of institutional ownership on board diversity and earnings management of quoted service firms in Nigeria, the following hypotheses were tested using a pooled ordinary least square regression.

$H_{01}$: Board size has no significant effect on earning management of quoted service firms in Nigeria.

The result in table 7 shows that the board size has a t-value of -2.14 and a beta coefficient of -0.0076, with a p-value of 0.033 which is significant at 5% level of significance. This means that board size has a significant negative effect on earning management of quoted service firms in Nigeria and, therefore, the null hypothesis one is rejected.

$H_{02}$: Board meeting frequency has no significant effect on earning management of quoted service firms in Nigeria.

The result in table 7 shows that board meeting frequency has a t-value of 1.34 and a beta coefficient of 0.0005, with a p-value of 0.183 which is not significant at all levels of significance. This means that board meeting frequency has an insignificant positive effect on earning management of quoted service firms in Nigeria and, therefore, the null hypothesis two is accepted.

$H_{03}$: Institutional ownership has no significant moderating effect on board size and earning management of quoted service firms in Nigeria.

Table 7 further presents the result of the explanatory powers of board size in explaining earning management, when moderated with the institutional ownership. The question is whether the board size and earning management of quoted service firms in Nigeria have improved when moderated with institutional ownership? In addressing this question, the beta coefficient of board size when moderated with institutional ownership revealed a negative beta coefficient value of -0.0071; a t-value of -3.74 with a p-value of 0.000. This implies that board size with the interaction of institutional ownership is negatively statistically significant at 5% level of significance, in explaining the earning management of quoted service firms in Nigeria. As observed from table 7 model I above, the result of board size without moderation is significant at 5% level of significance while the indirect relationship of board size in table 7 model II as moderated by institutional ownership has a negative significant effect on earning management. This, therefore, implies that institutional ownership has significantly moderates the relationship between board size and earning management of quoted service firms in Nigeria. This result gives the basis for rejecting the null hypothesis three which states that institutional ownership has no significant moderating effect on board size and earning management of quoted service firms in Nigeria.

$H_{04}$: Institutional ownership has no significant moderating effect on board meeting frequency and earning management of quoted service firms in Nigeria.

Table 7 further presents the result of the explanatory powers of board meeting frequency in explaining earning management, when moderated with the institutional ownership. The question is whether the board meeting frequency and earning management of quoted service firms in Nigeria have improved when moderated with institutional ownership? In addressing this question, the beta coefficient of board meeting frequency when moderated with institutional ownership revealed a positive beta coefficient value of 0.0007; a t-value of 1.85 with a p-value of 0.065. This implies that board meeting frequency with the interaction of institutional ownership is positively statistically insignificant at all levels of significance, in explaining the earning management of quoted service firms in Nigeria. As observed from table 7 model I above, the result of board meeting frequency without moderation is not significant at 5% level of significance while the indirect relationship of board meeting frequency in table 7 model II as moderated by institutional ownership has a positive insignificant effect on earning management. This, therefore, implies that institutional ownership does not significantly moderate the relationship between board meeting frequency and earning management of quoted service firms in Nigeria. This result gives the basis for accepting the null hypothesis four which states that institutional ownership has no significant moderating effect on board meeting frequency and earning management of quoted service firms in Nigeria.

**Discussion of Findings**

This study found out that board size has a significant negative effect on earnings management for quoted service firms in Nigeria. This means that when the board size increases, earnings management for quoted service firms in Nigeria will decrease by -0.0076. The study finding is consistent with the a-priori expectation of the researcher and is also consistent with the agency theory because the theory advocated for monitoring practices such as board size to mitigate agency costs and earnings management. The study finding is also consistent with the empirical study conducted by Eman et al. (2022) but is inconsistent with the empirical study conducted by Rishiram & Gurjeet (2022).

The study also found that the board meeting frequency is insignificant and positively related to the earnings management of the quoted service companies in Nigeria. This means that as the board meeting frequency increases, the earnings management of the quoted service companies in Nigeria will also increase by 0.0007. This result contradicts the researcher's a-priori hypothesis and does not support the agency theory because the theory proposed that monitoring tools such as board meeting frequency can reduce agency problems and earnings management. This result is consistent with the empirical result of Rishiram and Gurjeet (2022). However, this result is inconsistent with the empirical results of Abubakar et al. (2018) and Eman et al. (2022).

The study further revealed that board size with the interaction effect of institutional ownership is negative and statistically significant at 5% level of significance for explaining earning management for quoted service firms in Nigeria. As observed from table 7 model I above, the result of board size without moderation is significant at 5% level of significance; on the other hand, the indirect relationship between board size as presented in table 7 model II with institutional ownership has a negative significant effect on earning management. This therefore implies that institutional ownership significantly moderates the relationship between board size and earning management for quoted service firms in NigeriaThis finding is consistent with a priori expectations of the researcher; it also supports the agency theory because the theory suggested that monitoring mechanisms like board size can help to reduce agency problems and earnings management. The role of institutional ownership as a monitoring mechanism which can influence these relationships is consistent with agency theory. The result does not support the empirical finding of Ojo & Chukwu (2023) and Amadi & Yusuf (2023).

The study equally showed that the frequency of board meetings with the interaction of institutional ownership was positively statistically insignificant at all levels of significance in explaining the earning management of quoted service firms in Nigeria. As observed from table 7 model I above, the result of the frequency of board meetings without moderation was not significant at the 5% level of significance, while the indirect relationship between frequency of board meetings presented in table 7 model II above as moderated by institutional ownership was positively insignificant in explaining the earning management. This therefore implies that institutional ownership does not significantly moderate the relationship between frequency of board meetings and earning management. This result therefore does not conform to the a-priori expectation of the researcher as well as not being in line with the agency theory, which suggested that monitoring mechanisms such as frequency of board meetings could mitigate agency problems leading to earnings management.

**CONCLUSION AND RECOMMENDATIONS**

The results show that board structure and ownership composition are significant in limiting earnings management in service firms. The larger the size of the board, the less earnings are managed. This implies that larger boards are better able to effectively manage earnings. It therefore underscores the need to ensure that the optimal size of the board is maintained as a means to ensure effective corporate governance. The results also show that the number of board meetings does not effectively manage earnings; in fact, there is a positive relationship between earnings management and the number of meetings. This implies that corporate governance is not enhanced by increasing the number of meetings; rather, it is enhanced by the depth and content of the meetings.

The institutional ownership also comes out as an important moderating factor that increases the effectiveness of the corporate governance role of boards, especially in the context of larger boards' effectiveness in managing earnings management. Institutional ownership helps to build on the monitoring mechanisms to ensure higher standards of corporate governance, which ultimately translates to higher financial transparency. However, institutional ownership does not have a significant influence on the limited role of meeting frequency in managing earnings management practices. Overall, the research findings suggest that service firms should focus on optimal board composition along with institutional investor participation rather than meeting frequency to manage earnings management practices effectively.

Based on the above conclusions, the following recommendations are made:

(i) The study recommended that service organizations in Nigeria should consider increasing their board sizes to improve the efficiency of their governance structures. This is because a larger board would comprise diverse skills that would improve their decision-making processes as well as monitoring their financial activities. The expansion should be carried out in a strategic way that includes diverse skills, experience, and ethical behavior in reporting their financial activities.

(ii) The research also suggested that service organizations should adopt steps to improve the productivity of board meetings, such as more prepared board agendas focusing on strategic discussions of financial performance and accounting standards compliance. Board members should be provided with appropriate training to enable them with the necessary knowledge and skills to perform their financial oversight role effectively. In addition, organizations should consider evaluating their board meetings to ensure that the time spent in board meetings is adding value to the governance process and not increasing the risk of earnings manipulation.

(iii) The study also recommended that service firms in Nigeria should not only focus on optimizing the size of the board but should also strive to attract institutional investors as key stakeholders of the firm. Firms with larger boards are more likely to benefit if they also have institutional investors as stakeholders, as this would minimize earnings management practices.

(iv) The study ultimately recommended that service organizations should rethink their emphasis on increasing the number of board meetings as a way of mitigating earnings management. Rather, they should focus on making the quality of the board meetings more effective. They should make sure that board meetings are organized in such a way that they deal with key issues rather than just meeting frequently.

## REFERENCES

Abdullahi, I. B., Ayodele, O. M., & Salau, A. T. (2021). Board financial expertise and financial reporting quality: Evidence from Nigeria. *Journal of Accounting and Taxation, 13*(2), 89-98.

Abubakar, I. A., Rokiah, B. I., & Sitraselvi, A. C. (2018). The effect of board attributes on real earnings management in Nigerian financial institutions. *Journal of Accounting, Business and Finance Research, 1*(1), 76-83.

Adewale, A. A., & Okeke, O. S. (2020). Institutional ownership and board diversity as determinants of earnings management in Nigeria. *African Journal of Accounting and Finance, 8*(2), 56-72.

Adewale, A. A., Okafor, C. A., & Balogun, S. A. (2021). Institutional ownership and earnings management: Evidence from Nigerian listed companies. *International Journal of Accounting and Finance Studies, 5*(2), 123-135.

Adeyemi, S. B., & Fagbemi, T. O. (2023). Board characteristics and earnings management: Evidence from Nigeria. *Managerial Auditing Journal*, 38(1), 23-41.

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE Publications.

Amadi, F. O., & Yusuf, L. T. (2023). Board diversity and earnings quality in the presence of institutional ownership: Evidence from Nigeria. *International Journal of Business and Finance Research, 18*(1), 101-119.

Ahmed, S., & Hossain, M. (2020). Board meeting frequency and corporate governance: Evidence from emerging markets. *International Journal of Business and Management Studies*, *12*(3), 45–60.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Benjamin, E. M., & Murtala, A. (2023). *Corporate governance and financial performance of Nigerian firms*. Palgrave Macmillan.

Brown, L. D., & Caylor, M. L. (2021). Corporate governance and firm operating performance. *Journal of Accounting and Economics, 50*(1), 58-80.

Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *The Accounting Review, 73*(3), 305-333.

Cho, S., & Chung, C. (2022). Board characteristics and earnings management: Evidence from the Vietnamese market. *Journal of Risk and Financial Management, 15*(9), 395.

Daniel, I. O., Ifeoma, E. M., & Temidayo, A. A. (2019). Audit committee characteristics and financial performance of listed deposit money banks in Nigeria. *International Journal of Business and Management Future, 3*(1), 44-58.

Dechow, P., Ge, W., & Schrand, C. (2021). Understanding earnings management: A review of the literature and its implications for accounting standard setting. *Journal of Accounting and Economics*, 31(1-3), 3-53.

Duru, A. N., Eze, S. O., & Nwankwo, C. A. (2022). Board characteristics and firm performance: Evidence from Nigeria. *African Journal of Business Management, 16*(5), 143-154.

Eman F. A., Tariq, H. I., & Messaoud, M. (2022). Impact of board of directors attributes on real-based earnings management: Further evidence from Egypt. *Future Business Journal 8*(1), 2-22.

Eze, M. C., & Okoro, J. A. (2021). Institutional ownership and board diversity impact on earnings management in Nigerian listed companies. *Journal of Accounting and Finance, 12*(3), 56-74.

Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). McGraw-Hill.
Healy, P. M., & Wahlen, J. M. (2020). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383.
Hermalin, B. E., & Weisbach, M. S. (2023). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Journal of Financial Economics, 40*(2), 263-297.
Ikumapayi, T., Oladejo, I. A., & Adewole, A. (2018). Risk management practices and financial performance of listed deposit money banks in Nigeria. *Journal of Economics and Behavioral Studies, 10*(2), 254-261.
Imaowaji, E. T., & Ogboin, J. A. (2022). Corporate governance structure and earnings management of listed healthcare companies in Nigeria. *International Journal of Innovative Finance and Economics Research 10*(1), 1-16.
Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360.
Jessie, B., & Jeyaraj, V. (2019). Corporate governance and financial performance of listed companies: A case study of the Nigerian Stock Exchange. *Research Journal of Finance and Accounting, 10*(9), 109-116.
Jones, J. P., Krishnan, J., & Melendrez, K. D. (2022). Earnings management and the quality of financial reporting: A critical review. *Journal of Accounting Research*, 60(2), 445-484.
Kajola, S. O., Sunday, K. O., & Babajide, F. (2020). Corporate governance mechanisms and firm financial performance: Evidence from Nigerian quoted firms. *African Journal of Business Management, 14*(3), 96-106.
Kent, P., Routledge, J., & Stewart, J. (2016). Board composition and audit quality: The role of independent directors. *Accounting & Finance, 60*(1), 77-104.
Lakhal, F. (2020). Board independence, board size and earnings management: Evidence from France. *Corporate Governance: The International Journal of Business in Society, 20*(2), 234-247.
Mishra, R., & Mohanty, P. (2024). *Corporate governance in emerging economies: A focus on sustainability*. Springer.
Muhammad, A. I., & Musa, A. F. (2018). Board structure, audit committee and earnings management of deposit money banks in Nigeria. *NDIC Quarterly, 33*(1&2), 45-70.
Muhammed, A. I. (2020). The impact of intellectual capital on firm performance: A study of selected quoted manufacturing firms in Nigeria. *Asian Journal of Economics, Business and Accounting, 15*(3), 1-12.
Muktar, B., Saheed, A. L., & Emeka, E. E. (2024). Effect of board attributes on earnings management of listed deposit money banks in Nigeria. *Journal of Financial Risk Management, 13*, 510-524.
Nahid, J., & Nader, K. (2016). Investigation of the relationship between corporate governance, earnings management and tax management in Tehran stock exchange. *International Journal of Humanities and Cultural Studies, 1*(1), 2073-2081.
Obamuyi, T. M., & Edogbanya, A. (2023). Board meetings and earnings quality in Nigerian firms. *Journal of African Business*, 24(3), 412-428.
Ofoegbu, G. N., & Odoemelam, N. (2021). Board independence and financial reporting quality: Evidence from Nigeria. *Accounting and Finance Research*, *10*(3), 52-65.
Ojo, R. T., & Chukwu, E. A. (2023). Examining the moderating role of institutional ownership on board diversity and earnings quality in Nigeria. *International Journal of Finance and Management Studies, 14*(2), 90-108.
Okoye, L. U., Chukwu, E. A., & Adebanjo, T. K. (2023). Independent directors, financial expertise, and corporate governance in Nigeria. *Journal of Corporate Finance, 79*, 102-126.
Peter, O., Onyekwelu, U. L., & Dibia, N. O. (2022). Corporate governance and financial performance of manufacturing firms in Nigeria: A panel data analysis. *International Journal of Business and Management, 10*(2), 20-32.
Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective.* New York: Harper & Row.
Pillai, R., & Al-Malkawi, H.-A. N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance, 44*, 394-410.
Rishiram, A., & Gurjeet, D. (2022). The empirical study of the effect of corporate governance on earnings management based on FTSE350, UK. *International Journal of Business and Economic Development, 10*(2), 19-35.
Scott, W. R. (2023). *Financial Accounting Theory* (8th ed.). Pearson Education.
Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy, 94*(3), 461-488.
Tian, Y. (2020). The effect of ownership structure on earnings management of Chinese listed companies. *Asian Journal of Accounting Research, 5*(1), 1-13.
Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics, 53*(1), 113-142.
Xie, H., Davidson, W. N., & Dadalt, P. J. (2024). Earnings management and corporate governance: The role of the board and audit committee. *Journal of Corporate Finance*, 30(1), 42-58.
Yusuf, M. O. (2020). Ownership structure and earnings management: Evidence from Nigeria. *International Journal of Accounting Research, 8*(3), 101-115. https://doi.org/10.4172/ijar.2020.110