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Real earnings management in Nigeria - The role of Board competence and Institutional ownership of industrial goods sector

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Abstract

Due to a number of accounting scandals and financial anomalies, users of accounting information are growing more concerned about the quality and dependability of the data in the financial statements of well-known corporations worldwide. This is evident from the multiple corporate accounting scandals that were publicized in the US, Europe, and Nigeria in particular. This study evaluates the effect of board competence, institutional ownership on earning management of listed industrial goods firms in Nigeria. The 13 listed industrial goods businesses that were a part of the Nigerian Exchange Group (NGX) as of December 31, 2022, make up the study's population, and all the thirteen firms was examined in the research. Panel regression was utilized to analyze the obtained data. The findings indicate that board competence has impact on the earnings management of Nigerian industrial goods enterprises. At the 5% significance level, these are represented as coefficients (3.59) with P-values (0.001). However, the P-value (0.361) and coefficient (15.94) show that institutional ownership offers no discernible impact on earnings management. The research came to the conclusion that actual earnings management was impacted by board competency. However, there is little proof that real earnings management was impacted by institutional ownership. The study's conclusion was that Nigerian industrial products businesses ought to have additional independent directors with financial experience on their boards.

Keywords: Board competence, Institutional ownership, Earnings management, Accruals.

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1. Introduction

Among the governing board of directors' greatest tactical choices is the investment decision. In order to accomplish the organization's objectives, the boards of directors are in charge of making sure that its funds are managed successfully and efficiently. The allocation of resources in relation to total assets, company structure, and the consequent risk profile of the alternative are all advised by the board of directors, even if the finance manager has ultimate discretion over investment decisions (Velte, P., 2024).

In exchange for the self-serving managers' prudent use of their discretionary powers to increase shareholders' wealth rather than pilfer their assets, shareholders willingly entrust managers with their resources (Kee, 2010, quoted by Junaidu & Abdulrahman, 2019). Because it gives them information about the returns on their investments, financial reporting is important to investors and other stakeholders. Reported earnings are regarded as being extremely useful assist investors in forecasting their future profits, as stated by Das and Kim (2018).

However, certain financial reports could include inaccurate and deceptive data. In earnings management, executive discretion was often employed to hide subpar performance or inflate excellent performance for career or pay-related reasons. If earnings management is taken into account while projecting future profits, analysts can assess its effects through significant accruals (Abarbanell & Lehavy, 2018). The way a firm manages its results can impact the overall value of its earnings in either a beneficial or detrimental way (Hui & Fatt, 2019).

Effective earnings management can increase a company's earnings, but inadequate management can seriously impair the quality of those gains. Kin (2018) distinguishes between Earnings management comes in two different forms: accrual-based and real-based. As opposed to earnings management centered around accruals, real-based earnings management concentrates on controlling actual operations, such as cutting back on discretionary spending, which modifies or revises accruals through revisions to accounting assumptions. In contrast to accrual-based earnings management, real-based earnings management directly affects the flow of funds (Roychowdhury, 2016).

Managers manipulate income using either or each of these strategies to increase the business's earnings and inflate statistics in the financial report. Losses on investments might result from earnings management. For example, investors in industrialized nations have been alarmed by the demise and scandals of major corporations like Enron, WorldCom, and Xerox because they ended up losing revenue on their investments (Fodio, Ibikunle, & Oba, 2013). Major companies involved in Lever Brothers PLC, Cadbury Nigeria PLC, and African Petroleum PLC are among the Nigerian corporations involved in controversies (Miko & Kamardin, 2018).

To allow managers to manipulate financial data in a way that maximizes profits, any firm must have an efficient earnings management system in place (Kin, 2018). Although earnings management is widespread, it becomes problematic when it results in false financial statements that erode investor trust. True earnings management is achieved when a business adjusts its operating procedures to increase profitability without deviating from accepted accounting principles (GAAPs).

Real earnings management is crucial for a company to grow, add value for shareholders, and attract investment. Big enterprises sometimes alter their true earnings to maintain their market positions, according to Ayogu and Ani (2018), which could affect the accuracy of financial records. Furthermore, higher profitability translates into higher retained earnings, and managers can employ earnings management strategies to appease shareholders. Thus, it stands to reason that if a company's profitability increases, so too would actual earnings management. However, Martin (2018) contends that in order to maintain positive cash flows and enhance their financial performance, low-profitability companies should employ income-reducing earnings management. The study specifically looked into how ownership structure, board competency affected real earnings management.

Due to a number of accounting scandals and financial anomalies, users of accounting information are growing more concerned about the quality and dependability of the data in the financial statements of well-known corporations worldwide. The multiple corporate accounting scandals that rocked Europe and the US at the beginning of the twenty-first century such as those involving Parmalat in Italy, Nortel in Canada, and One Tel in Australia, WorldCom and Enron in the US, Wire Card (2022) and cryptocurrency trading platform FTX in U.S (2024) make this evident. Other accounting scandals including Oceanic Bank, Intercontinental Bank, Afribank, Cadbury Nigeria PLC.

Managers' methods of controlling profits have been identified as a contributing factor to business failures that have been witnessed in companies all over the world. This phenomenon has resulted in a deterioration in public trust and the cessation of investment by many parties. It has continuously brought up significant issues about the efficacy of the management strategies used by various businesses. Moreover, it has brought attention to issues about the shortcomings of internal oversight in businesses and the standards of financial reporting (Githaiga, Kabete & Bonareri 2022).

In order to control the operations of visibly operated firms on the Nigerian Stock Exchange and the Financial Reporting Council of Nigeria, the Securities and Exchange Commission (SEC) established a code of corporate governance in 2003 issued a directive in 2012 mandating that all listed companies follow IFRS standards. Both codes were reviewed in 2011.

Diverse accounting procedures culminate in the management of the company deciding what details have to be in the yearly report, despite the fact that these standards are intended to provide the board total authority over the managers. If the relevant board members had fulfilled their obligations as outlined in the 2016 review of The Securities and Exchange Commission Act of 2011, the Nigeria Code of Corporate Governance, and the Financial Reporting Council of Nigeria's 2012 instruction, and other laws intended to compel the company to provide pertinent information, the majority of these business issues connected to accounting practices could have been avoided (Mohammad et al, 2021).

Real earnings management is a significant problem in Nigeria that has an impact on many different parties, such as investors, regulators, and the country's economy. Nigeria's economy is mostly reliant on the industrial products sector, and the stated firms' financial success has a big impact on the nation's economy and the stock marketplace overall. Manipulation of financial reporting can undermine investor confidence, create market inefficiencies, and limit economic growth (Githaiga, Kabete, and Binary 2022).

The intent of this research is to examine the relationship between actual earnings management and company features in Nigeria's industrial products industry. The research explicitly scrutinized the impacts of institutional ownership and board competency on actual profits management in this sector.

Therefore, by methodically examining the impacts of institutional ownership and board member competency on the actual earning management of Nigerian listed companies that produce industrial goods, the present research seeks to close the research gap. By focusing on these drivers, this research will provide valuable insights that facilitate effective policymaking.

2. Review of literature

Uwalomwa et al. (2015) assessed the earnings management practices of 20 businesses quoted on the Nigerian stock exchange between 2006 and 2010. To conduct econometric analysis, the research utilized pooled ordinary least square regression with descriptive statistics. Although corporate strategy and company size have a substantial beneficial impact on earnings management (as measured by discretionary accruals), the study's findings showed no significant correlation between financial leverage and discretionary accruals in the sampled Nigerian organizations. According to the research, because due to the complexity of their activities and the difficulties for customers to spot overestimation, big organizations are far more inclined to influence and inflate their revenues.

Ilaboya and Olorunfemi (2018) examine how fifty Nigerian quoted firms are affected by factors including age, size, debt, profitability, and real earnings management. Ordinary least squares (OLS) regression analysis was utilized to assess this research's data. The research found a substantial unfavorable link between real earnings management and firm size. Age, economic viability, debt, and actual earnings management did not significantly correlate, according to the research.

Alade and Oladipupo (2018) investigate the link involving real earnings management and corporate governance in 37 Nigerian publicly traded industrial companies. The information gathered from the present investigation were examined using multiple regression analysis. The findings of the analysis show a substantial negative link. Nasie and Hassan (2019) investigate the impact of corporate governance on profit management in 46 Nigerian-listed firms. This study employed multiple regression analysis to assess the data. The study found a substantial unfavorable link between earnings management and corporate governance.

Olufemi and Adebowale (2018) examined the connection underlying corporate performance, actual earnings management, and ownership structure in 71 publicly traded Nigerian firms. The research examined the gathered data using a multiple regression analysis. The outcomes of the research validated a strong positive correlation between actual earnings management and business performance. The study discovered that the link between corporate governance and real earnings management, therefore connecting real earnings management and business performance, is moderated by ownership structure.

The impacts of a firm's attributes on the real earning management of 100 listed companies on the Amman Stock Exchange (ASE) between 2011 and 2017 are examined by Kharashgah, Amran, and Binti Ishak (2019). It's fascinating to note that the data show an absence of correlation between REM and board size, but a substantial adverse relationship between REM and board independence and meetings.

Musa et al. (2019) examine how business characteristics affect the financial reporting quality of 11 Nigerian stated industrial products companies between 2011 and 2018. As an instrument for analysis, the multiple regression approach was applied. It has been shown that the following factors significantly and negatively affect the actual earnings manipulation of listed industrial goods businesses in Nigeria: firm age, company size, leverage, and the participation of female directors. Additionally, a company's financial reporting value is positively impacted by board meetings and profitability; growth, access to liquidity, and ownership structure alternatives have fewer of an effect.

Using multiple linear regression analysis, Adeniji et al. (2019) came across an intense inverse relationship regarding actual earnings management and corporate governance in a study of 37 publicly traded manufacturing companies in Nigeria.

Erlane et al. (2019) examined the effects of company factors on profits management methods in 83 publicly listed, technology-focused firms in Malaysia in 2015 and 2016. The research found a statistically significant beneficial relationship between firm size and earnings management practices. This suggests that larger businesses frequently employ incentives to control profits and increase output. However, there is no discernible correlation between the profitability or indebtedness of organizations and the implementation of earnings management measures. The present research shows how company size affects the prevalence of earnings management in Malaysian publicly traded technology businesses.

The impact of internal control quality on the actual profit management of fourteen Nigerian stated industrial products companies is investigated by Owojori and Asaolu (2020). A cross-sectional model was used in the research to determine how internal control quality affected the management of actual earnings. The results of the study showed a strong inverse relationship between real profits management and the efficiency of internal controls.

The impact of managerial, institutional, and foreign ownership structures on the actual earning management of 72 non-financial companies in Nigeria from 2014 to 2018 was investigated by Ahmad et al. (2020). It analyzed the data using the multiple regression approach. The findings designate that while institutional ownership has little impact on actual earnings management, managerial ownership increases management's motivation to manipulate results.

The results also show that management is discouraged from falsifying financial accounts by foreign ownership.

The study by Mohammad et al. (2021) looks at the small impact of the audit committee's independence between 2009 and 2018, the Amman Stock Exchange (ASE) reported on the relationship between board structure and real earnings management (REM) in 91 mentioned enterprises in the industrial and service sectors. The data analysis using the Fixed Effect approach suggests that REM is strongly and adversely influenced by the size of the board and CEO duality. REM and board independence, however, were revealed to be strongly positively correlated. Ultimately, the results demonstrated that REM is impacted by the board's structure. Additionally, it was shown that the link involving board structure and REM has been somewhat impacted by the autonomy of the audit panel.

Abel et al.'s study from (2021) looked at how the size and independence of the board affected how much profit management was done in 92 Nigerian companies that were listed between 2007 and 2018. The collected data was examined using regression analysis, a statistical technique. Even after controlling for IFRS adoption and enterprise age, the results demonstrate that the size of corporate boards and the number of independent directors had no significant influence on the degree of profit management in Nigerian firms.

Ahmad et al. (2021) looked into how, between 2014 and 2018, 72 non-financial enterprises in Nigeria managed their real earnings in relation to free cash flow and corporate tax avoidance. The model was tested using the multiple regression approach. The findings indicate both are involved free cash flow and corporate tax evasion support management's attempts to distort real earnings.

Olorede, Abogun, and Olowookere's (2022) study examined the corporate governance, CEO compensation, regarding the caliber of the financial reporting of 74 Nigerian listed firms that were chosen. The chief executive officer's overall remuneration was used as a proxy for executive compensation, and the corporate governance index was created as a gauge of corporate governance. As stand-ins for financial reporting quality, Kothari, Leone, and Wasley's modified Jones model's discretionary accruals (2005) and Dechow and Dichev's (2002) accruals were used. The outcome of the research demonstrated a substantial and adverse relation to CEO compensation and corporate governance and discretionary accruals, as well as a positive correlation between reporting quality and CEO compensation.

Githaiga et al.'s (2022) this research looks at the earnings management (EM) strategies of eighty-eight East African Community (EAC)-listed companies between 2011 and 2020. The work addressed potential endo-genetic and reverse causality concerns using the system generalized method of moments (SGMM) estimate model. The results showed that board size and EM had a significant and positive relationship. The results also showed that EM was significantly and negatively impacted by board independence and gender diversity. Furthermore, the results verified that the association between EM, independence, gender variety, and board size was mediated by the size of the organization.

Ali, S. et Al., (2024), investigated the roles of institutional ownership in board investment efficiency relationship and effect of board governance procedures on the efficacy of investing in listed firms Pakistan Stock Exchange (PSX). From 2004 to 2018, 155 non-financial PSX-listed companies made up the sample data.

The research's hypotheses were tested using a random effect model. The study's conclusions are confirmed by a robustness test. Regression analysis shows that while board diversity has a large negative influence on investment efficiency, board size has a considerable direct effect. In terms of moderating, it was discovered that institutional ownership considerably reduced the association between board independence and investment efficiency.

3. Methods and Materials

3.1. Data

This inquiry employed an ex post facto research design. The 13 quoted industrial products companies operating on the Nigerian Exchange Group (NGX) floor as of December 31, 2022, make up the research's composition. The ten-year research period runs from 2013 to 2022. The selecting process employed censorship sampling techniques. The complete population was considered for this investigation. Consequently, over the course of the study's ten years, from 2013 to 2022, the annual reports of the 13 industrial enterprises were reviewed. This produced 130 sampled observations, which is equivalent to multiplying 13 industrial businesses by ten years. The study conducted a rigorous analysis of the data it collected using both descriptive and inferential statistical tools.

3.2. Model Specification

The present investigation employed an altered version of the Githaiga et al (2022) model, which was expressed as follows:

EM_{it}=β0+ β1SIZ_{it}+ β2BS_{it}+ β3BI_{it}+ β4BGD_{it}+ e_{it}……………………………………….(1)

The acronym stands for earnings management, firm size (SIZ), board size (BS), board independence (BI), and board gender diversity (BGD).

This study considered institutional ownership and board competence, in the revised model. below:

$REM_{it} = \beta_{0it} + \beta_1 BCO_{it} + \beta_2 INS_{it} + e_{it}$ ……………………………….(2)

Where:

REM= Real Earnings Management (measured with residual value of discretionary accrual of modified Jones model)

BCO= Board Competence

INS= Institutional Ownership

β_0 = Constant

e = error term for the Model that is, the difference between the observed value and the predicted value of real earnings management.

i,t = i represents a particular company, and t is the fiscal year.

Table 1: Measurement of variables

Variable	Measurement
Real earning management (REM)	The modified Jones model's residual of discretionary accruals is used to quantify real earning management (Liu & Lu, 2022). it is stated below: $TACC/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2((\Delta REV_{it}-\Delta REC_{it})/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1}) + \varepsilon_{it}$……………….(2)
Institutional Ownership (INS)	Percentage of held equity by institution in the capital structure (Obasi et al., 2019. Aygun, 2019).
Board Competence (BCO)	Board competence is measured using, If the board member is a specialist in finance, the value is 1, and if not, it is 0. Ebraheem (2021).

Source: Author

4. Results and Discussion

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
REM	130	6.413541	41.77312	-.3959644	338.4395
INS	130	0.7856154	0.2128544	0.33	1
BCO	130	0.2913077	0.1965256	0	0.67

Source: Author's Computations, 2024

The Real Earnings Management (REM) summary data are displayed in Table 2, Institutional Ownership (INS), and Board Competence (BCO) highlight the characteristics of Nigerian listed industrial products companies. The mean value of REM is 6.41, suggesting that, on average, these firms engage in relatively low levels of actual profit management. However, the high standard deviation of 41.77 indicates substantial variability, with some firms exhibiting significantly higher levels of earnings manipulation. The range, which starts at -0.40 and goes up to 338.44, further illustrates that some firms may manipulate earnings downward while others engage in substantial upward adjustments.

For INS, the average ownership by institutional investors is 0.79 (or 79%), suggesting that most firms in the sample are primarily owned by institutional shareholders. The standard deviation of 0.21 shows moderate variation in ownership levels, with some firms having as low as 33% institutional ownership and others reflecting complete institutional ownership (1.0).

Regarding BCO, the average competence level among board members is 0.29, indicating that only 29% of board members are deemed competent on average.

The standard deviation of 0.20 signifies moderate variation, with some firms having no competent board members (minimum of 0) and the most competent boards consisting of 67% competent members (maximum of 0.67).

Therefore, the data reveals considerable diversity in real earnings management practices, ownership structures, and board competence among listed industrial goods firms in Nigeria. While institutional ownership is generally high, board competence appears relatively low, and real earnings management practices vary widely across firms.

Table 3: Correlation Coefficient

	REM	**INS**	**BCO**
REM	1.000		
INS	0.0806	1.000	
BCO	0.8140	0.7358	0.000

Source: Author's Computations, 2024

The correlation matrix reveals in the table 3, shows the key relationships among Real Earnings Management (REM), Institutional Ownership (INS), and Board Competence (BCO). The correlation between REM and INS is weak at 0.0806, indicating a minimal connection underlying institutional ownership and real earnings management. However, a strong optimistic correlation (0.8140) exists between REM and Board Competence, suggesting that more competent boards are linked to increased earnings management. This highlights the influence of board competence on strategic financial decisions. Additionally, the correlation between INS and BCO is 0.7358, suggesting that boards of companies with larger institutional ownership are often more capable. This implies that institutional investors may favor companies with knowledgeable boards or work to improve board competency. Ultimately, institutional ownership merely has a less direct influence on earnings management practices than board competency, which is important for both institutional ownership and earnings management.

Table 4: Random Effect

REM	Coef.	Std. Err.	Z	p</z/	[95% conf.	Interval]
BCO	57.080	19.34627	5.01	0.003	-38.09884	37.73714
INS	2.499828	18.92501	0.15	0.882	-34.29251	39.89217
Cons	4.266636	17.31548	0.25	0.805	-29.67107	38.20435
Sigma-u	18.299031					
Sigma-e	38.534767					
Rho	0.18400792					

Source: Author's Computations, 2024

In the table 4, the model examining the relationship between Real Earnings Management (REM), the random-effects GLS regression analysis's findings show Board Competence (BCO), and Institutional Ownership (INS) in listed industrial products firms in Nigeria is statistically significant overall. The Wald chi-squared test result (Wald chi2(2) = 4.02, p = 0.0090) indicates that the independent variables, BCO and INS, together impact REM in a way that is statistically meaningful. This implies that these factors are crucial to comprehending the actual profits management strategies used by these companies.

In terms of model fit, the R-squared values indicate a solid performance. The within-group R-squared is 56%, showing that 56% of the discrepancy in REM within individual organizations is clarified by the model. This strong fit implies that the model effectively captures within-firm differences.

The between-group With an R-squared of 41%, the model accounts for 41% of the variance in REM amongst enterprises, indicating a moderate fit for between-firm variation. The overall R-squared is 50%, meaning that half of the total variation in REM across all observations is elucidated by the independent factors. This highlights the model's overall strength in explaining variations in real earnings management.

The verdicts specify that REM is significantly improved by Board Competence (BCO). With a p-value of 0.003 and a coefficient of 57.08, this suggests a robust correlation between increasing actual profits management and board competency. In particular, REM rises by around 57 units for every single boost in BCO. This study implies that more capable boards typically use more practical revenue management techniques, maybe as a result of their improved capacity to handle intricate financial schemes. However, REM is not significantly impacted by Institutional Ownership (INS). The large confidence range highlights the uncertainty in this estimate, and the p-value of 0.882 indicates that the influence is not significant in statistical terms despite the INS coefficient of 2.80.

Therefore, the analysis highlights the significant role of Board Competence in driving actual earnings management techniques used by Nigerian listed industrial goods companies. Businesses with more capable boards typically manage their earnings at greater levels. However, Institutional Ownership does not seem to have a significant influence on these practices. The model demonstrates a good overall fit, explaining 50% of the variation in REM, with board competence emerging as a crucial factor in understanding earnings management behavior in the sector.

Table 5: Regression analysis

REM	Coef.	Std. Err.	Z	p</z/	[95% conf.	Interval]
BCO	3.587042	18.80951	66.19	0.001	-33.63358	40.80767
INS	15.9366417.36657		0.92	0.361	-18.42867	50.30194
Cons	7.15145815.33187		0.47	0.642	-37.49045	23.18754

Source: Author's Computations, 2024

The regression study that examines the influence of Institutional Ownership (INS) and Board Competence (BCO) on Real Earnings Management (REM) in publicly traded industrial products companies is displayed in Table 5. The p-value of 0.446 and the F-statistic of 0.43 show that the model Overall, this is not statistically significant. This implies that BCO and INS alone do not account for a sizable portion of the variance in REM. The R-squared value of 51.01% suggests that the independent variables explain almost half of the variance in REM, despite the model's insignificance. Nevertheless, considering the absence of overall model significance, this high R-squared value should be regarded with caution.

Result also shows that Board Competence (BCO) shows a positive relationship with REM, with 3.59 for the coefficient and 0.001 for the extremely significant p-value. This implies the fact that board competence increases, so does real earnings management. However, the confidence interval for this estimate (-33.63 to 40.81) is quite broad, indicating some uncertainty around the true effect. Despite this, BCO remains a key variable, significantly influencing REM in this model.

The findings of earlier investigations (Ahmad et al., 2020; Velury & Jenkins, 2019) showed a significant connection, whereas this result deviates from their conclusions. The findings of (Lin & Hwang, 2020; Wang, 2016; Koh, 2017; Aygun et al 2019, Liu & Tsai, 2019 Alzoubi, 2021) about the link and the factors' significance align with this outcome. The results of this investigation corroborate the assumption of the agency theory even further.

Conversely, there is a positive but statistically insignificant correlation between REM and Institutional Ownership (INS), as indicated by its coefficient of 15.94 ($p = 0.361$). This implies that actual earnings management is unaffected by shifts in institutional ownership. The wide confidence interval (-18.43 to 50.30) reflects a high level of uncertainty in this estimate, reinforcing the absence of importance in the connection between INS and REM. This result is in line with the findings of other researchers (Ahmad et al., 2020; Velury & Jenkins, 2019), who also did not discover any conclusive evidence in their studies. The findings of (Lin & Hwang, 2020; Wang, 2016; Koh, 2017; Aygun et al 2019, Liu & Tsai, 2019 Alzoubi, 2021) on the link and importance of the factors do not align with this study. The findings of this study give additional proof in favor of the agency theory's premise.

Discussion

The hypotheses presented pertain to the correlation between Industrial Ownership, Board Competence and the results of this research offer even more support for the assumption of the agency theory managers that vary from typical operationally standards on order to manipulate reported result. The first hypothesis was formulates to test whether the Real Earnings Management (REM) in Nigerian stated industrial products companies is significantly impacted by institutional ownership. The findings indicate that REM is unaffected by institutional ownership which implies that inclusion of institutional investors in a company's ownership framework might not influence managerial conduct with regards to manipulating results. Institutional investors, with their advanced comprehension of Financial Statements and proactive oversight responsibilities may not discouraged manager from participating in earnings manipulations (Ahmed et al, 2020 & Velury & Jenkins, 2019).

The second hypothesis was tested to examine whether Board Competence on board members has a foremost impact on the management of actual earnings in Nigeria's stated industrial products companies. The board's degree of experience has a big influence on how real earnings are manipulated. The board of directors is in charge of overseeing management and ensuring that financial reporting is accurate (Alzoubi 2021). This discovery suggest that in certain companies, board members may have capabilities, experience and required knowledge to supervise adequately in order to curb the manipulation of earnings.

Conclusions and policy recommendations

Considering the consequences of the investigation, the following conclusions were drawn:

Financial professionals on the boards of industrial products businesses will have more control over the extent of earnings management since they will be better able to understand the information included in financial statements.

Institutional investors have less sway over Nigerian industrial products businesses' earnings management strategies. This infers that the existence of institutional investors affects a company's capacity to manage its profitability.

The study's conclusions led to the subsequent recommendations being made:

i. To help lower the degree of profits management and assist in resolving agency concerns, Nigerian industrial products companies should appropriately include a bigger number of independent directors and financial specialists on their boards.

ii. Nigerian companies that produce industrial goods should consider luring in additional institutional investors. This could improve earning management control and assist with activity tracking.

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APPENDICES

List of Industrial goods firm Nigeria

1. BUA Cement Plc
2. Dangote Cement Plc
3. Lafarge Africa Plc
4. Austin Laz & company Plc
5. Grief Nigeria Plc
6. Chemical and Allied Product Plc
7. Berger Paint Nig Plc
8. Meyer Plc
9. Notore chemical Plc
10. Premier paint Plc
11. Tripple Gee and Company plc
12. Beta Glass Plc
13. Cutix Plc

```
. xtset ID YEAR, yearly
       panel variable:  ID (strongly balanced)
        time variable:  YEAR, 2013 to 2022
                delta:  1 year

-
. xtreg REM BC0  INS, re

Random-effects GLS regression                   Number of obs      =       130
Group variable: ID                              Number of groups   =        13

R-sq:                                           Obs per group:
     within  = 56.0010                                        min =        10
     between = 41.0996                                        avg =      10.0
     overall = 50.0063                                        max =        10

                                                Wald chi2(2)       =      4.02
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0090

------------------------------------------------------------------------------
         REM |      Coef.   Std. Err.      z    P<|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         BC0 |  57.0808492  19.34627     5.01   0.003    -38.09884    37.73714
         INS |   2.799828   18.92501     0.15   0.882    -34.29251    39.89217
       _cons |   4.266636   17.31548     0.25   0.805    -29.67107    38.20435
-------------+----------------------------------------------------------------
     sigma_u |  18.299031
     sigma_e |  38.534767
         rho |  .18400797   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. summarize REM INS BC0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         REM |       130    6.413541    41.77312  -.3959644   338.4395
         INS |       130    .7856154    .2128544        .33          1
         BC0 |       130    .2913077    .1965256          0        .67
```

. pwcorr REM INS BCO

	REM	INS	BCO
REM	1.0000		
INS	0.0806	1.0000	
BCO	0.8140	0.7358	1.0000

.

. regress REM BCO INS

Source	SS	df	MS
Model	1526.39035	2	763.195174
Residual	223577.77	127	1760.45488
Total	225104.161	129	1744.99349

Number of obs	=	130
F(2, 127)	=	446.43
Prob > F	=	0.0001
R-squared	=	51.0068
Adj R-squared	=	51.00 38
Root MSE	=	41.958

REM	Coef.	Std. Err.	t	P<|t|	[95% Conf.	Interval]
BCO	3.587042	18.80951	66.19	0.001	-33.63358	40.80767
INS	15.93664	17.36657	0.92	0.361	-18.42867	50.30194
_cons	-7.151458	15.33187	-0.47	0.642	-37.49045	23.18754