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GAUGING THE NEXUS BETWEEN FIRMS ATTRIBUTES AND REAL EARNINGS MANAGEMENT: EVIDENCE FROM LISTED CEMENT COMPANIES IN NIGERIA

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Abstract

This study examines the nexus between firm attributes and real earnings management among listed cement companies in Nigeria. Specifically, it evaluates how firm size, audit quality, and firm age influence the extent of real earnings management practices. Given the strategic importance of the cement industry to Nigeria's economic development, the sector provides a relevant setting for assessing how internal firm characteristics shape financial reporting behaviour. The study adopts a quantitative ex-post facto research design and utilizes secondary data from three publicly listed cement firms over the period between 2014 to 2021. The empirical findings indicate that firm size exhibits a positive but statistically insignificant association with real earnings management, suggesting that larger firms may have greater incentives or opportunities to engage in such practices. In contrast, audit quality demonstrates a significant negative relationship, implying that higher-quality audits serve as an effective constraint on earnings manipulation. Furthermore, firm age is found to be positively associated with real earnings management, indicating that more established firms may be more inclined toward such practices, thereby highlighting the need for continuous strengthening of governance mechanisms. The findings offer important implications for regulators, auditors, and corporate stakeholders by emphasizing the need to enhance audit quality and corporate governance frameworks to improve financial reporting transparency and credibility.

Keywords: Firm Size, Audit Quality, Firm Age and Real Earnings Management

1. Introduction

Financial reporting quality continues to attract significant attention in corporate finance, particularly within emerging markets where regulatory enforcement and governance mechanisms are still evolving (Alhadab & Nguyen, 2022). A major concern in this regard is real earnings management (REM), a practice in which managers alter real business activities such as production decisions, pricing strategies, or

discretionary expenditures to influence reported financial outcomes (Habib et al., 2021). Compared to accrual-based manipulation, REM is more difficult to detect and may have more severe long-term consequences for firm value and operational efficiency. Recent studies emphasize that REM can distort resource allocation and weaken the reliability of financial reporting, thereby undermining investor confidence and market discipline (Khan et al., 2023). Furthermore,

firm-specific characteristics such as size, audit quality, and firm age have been identified as critical determinants of earnings management behavior, although empirical findings remain mixed, particularly in developing economies (Lassoued, 2022).

Many companies navigate complex economic environments, the accuracy of financial statements becomes paramount, influencing everything from stock prices to the overall trust users place in the financial markets. Among the various avenues of financial reporting manipulation, real earnings management has garnered widespread attention among researchers, practitioners, and regulatory bodies alike, due to its profound implications for the accuracy of financial reporting, corporate governance, and overall market efficiency (Hassan et al., 2022). This study endeavors to investigate the influence of firm characteristics specifically firm size, audit quality, and firm age on real earnings management within the context of listed cement companies in Nigeria. Examining how organizational traits might be used to reduce managerial propensity to engage in manipulative accounting methods is crucial, given the series of documented accounting scandals (Thaller et al., 2024).

Nigerian cement industry offers a unique and relevant context for examining the nexus between firm attributes and real earnings management. As a key contributor to infrastructure development and industrial growth, the sector is characterized by high capital intensity, regulatory scrutiny, and increasing investor interest (Umar & Sani, 2024). These features create both incentives and constraints for managerial financial reporting behavior. Despite its economic importance, limited empirical evidence exists on how firm-specific factors influence REM within this sector. This study addresses this gap by analyzing the effects of firm size, audit quality, and firm age on real earnings management among listed cement firms in Nigeria. By doing so, it contributes to the growing body of literature on financial reporting quality in emerging markets and provides practical insights for regulators, auditors, and investors seeking to strengthen corporate transparency, governance, and accountability (Appiah et al., 2023).

The cement industry stands as one of the largest and most vital sectors within Nigeria's economy, playing a pivotal role in infrastructural development and the facilitation of economic growth. Given its strategic importance, the companies operating in this sector face myriad external pressures, including regulatory scrutiny and intense market competition (Odera et al., 2020). These pressures may drive firms to engage in real earnings management practices as they seek to present a more favourable financial picture to stakeholders, including investors, regulatory authorities, and the public. Lee & Chung, (2019) firm characteristics impact real earnings management practices, this study aims to equip regulators, investors, and other stakeholders with crucial insights, enabling more informed decision-making processes based on accurate and reliable financial reporting.

Firm size emerges as a fundamental characteristic potentially influencing the extent of real earnings management practices. Larger firms typically benefit from greater resources and more sophisticated financial reporting systems, which may afford them the latitude to engage less in aggressive earnings manipulation (Hossain, 2021). Conversely, smaller firms, often grappling with limited resources and mounting pressure to meet external expectations, might resort to real earnings management to artificially bolster their earnings figures. In this light, understanding the intricacies of how firm size correlates with real earnings management practices can unveil vital implications for financial reporting behavior across firms of varying scales.

Firm size, audit quality plays a crucial role in shaping the prevalence of real earnings management practices. High quality audits can serve as a powerful deterrent against earnings manipulation, instilling greater confidence in the integrity of financial statements. When firms engage with reputable audit firms known for their rigor and diligence, they may be less inclined to undertake real earnings management strategies, thus promoting a culture of transparency and accuracy in financial disclosures (Abubakar, 2016).

Firm age stands out as another significant factor influencing real earnings management practices. Older, more established firms often possess a solid reputation within the market, which may reduce the perceived need for aggressive earnings management. As these firms work to maintain their legacy and shareholder trust, they may prioritize sustainable growth over short-term financial gains, leading to more honest financial reporting practices (Lee & Chung, 2019).

By focusing specifically on the Nigerian cement industry, this study not only examines a pertinent aspect of real earnings management practices within a vital sector but also highlights broader implications for emerging markets worldwide. Understanding how real earnings management manifests in developing economies is crucial, as it can inform the development of tailored regulatory frameworks and corporate governance practices suited to the unique challenges faced in these environments. As such, this research aims to enhance the discourse surrounding real earnings management practices while providing actionable insights that can guide stakeholders in navigating the complexities of financial reporting in developing economies.

Earnings management has become a serious problem encountered by corporate organization in Nigeria despite corporate governance codes put in place to ensure accuracy and reliability of financial reports and disclosures (Adedeji et al., 2023). Earnings manipulation is problematic because it lowers the quality of financial information that is publicly disclosed and thereby distorts the correlation between stock returns and reported earnings, misleading stakeholders and the public about a company's present and future performance (Wasiuzzaman, 2018).

Several attempts have been made in the literature to examine the nexus between firm element and earnings management with contrasting results. For instance, Hasnan, Razali and Hussain (2020) demonstrated that firms with improved performance do not engage in financial restatement and firm leverage increases the

management incentive to manipulate earnings. Das *et al* (2018) established high-growth and profitable enterprises with high debt and affiliated with business group indulge in earnings management whereas older and large firms engage in less earnings management; Hossain (2021) concluded that managers of highly levered firms are more likely to take up opportunistic EM than those of low levered firms and larger firm with growth opportunity indulge in earning management and Bouaziz, Salhi and Jarboui (2020) showed that larger firm and older firms are less likely to manipulate accounting result while profitable firms and firms with high debt engage in earning management. The focused on examining the effect or role of firm size, audit quality and firm age on earnings management of quoted cement firms in Nigeria.

2. Literature Review

2.1 Conceptual Review

Firm Characteristics

Firm attributes or characteristics are distinct information reported in a financial statement of a firm that informs stakeholders about the performance of the firm (Bala, 2021). They are parameters under the direct control of management and often account for the inter-firm differences in financial performance. Claims that company characteristics are factors of motives that are fairly sticky to firms over time at various levels.

Rahman and Widyasari (2020) assert that firm characteristics serve as guidelines for managers to report true earnings because they have a variety of effects on the managers' actions concerning the shareholders' wealth whenever managers plan to manipulate earnings upward. For instance, every opportunistic increase in earnings will result in a reduction in the capital of shareholders. Firm structure variables, such as firm size, leverage, ownership type, and company tax, are categorized into three categories by Rahman and Widyasari (2020).

Firm Size

According to Watts and Zimmerman's (1978) positive accounting theory, major businesses use earnings

management techniques to inflate their reported profits because they attract more public attention than smaller businesses (Watts & Zimmerman, 1986). Also, large firms choose accounting policies that permit postponing the earnings disclosure to future periods. Similarly, based on agency cost theory, large-sized firms witness greater agency costs, which give room for more opportunistic practices (Jensen & Meckling 1976). Furthermore, larger firms also have more bargaining power to auditors, then tend to successfully waive earnings management in financial reports.

Audit Quality

A quality audit is one that is carried out in accordance with generally accepted auditing standards (GAAS), according to the US Government Accountability Office (GAO, 2015), to give reasonable assurance that the audited financial statements and related disclosures are; presented in compliance with GAAP and or are not materially misstated, whether due to errors or fraud. Accordingly, more trust that the financial statements accurately reflect the firm's underlying economics, according to its financial reporting system and inherent features, results from higher audit quality.

According to Jensen and Meckling (1976); Watts and Zimmerman (1983), external auditing is one of the most efficient control systems for keeping an eye on managers and giving a fair assurance regarding the veracity of financial information. Additionally, by reducing managerial opportunism, the existence of external auditing greatly raises the caliber of financial data and lowers the likelihood of earnings manipulation (Orazalin & Akhmetzhanov, 2018).

Cudia and Dela Cruz (2018) found that audit quality had a small but unfavorable impact on how listed industrial firms in the Philippines manage their earnings. In addition, audit quality mitigates earnings management of listed corporations in Egypt (Bassiouny, Soliman, & Ragab, 2017).

Firm Age

Another crucial element that influences earnings management is a company's age, which reflects how long it has been in operation (Hamzah, Gozali, & Khamisah, 2022). As businesses become more specialized over time and adopt new methods to standardize, coordinate, and speed up their production processes, as well as to reduce costs and raise quality, they come to understand what they are excellent at and how to do things better. Older companies that have been around for a while have lower levels of earnings management than newer ones because they are well-known, have a high market value, and have a reputation to uphold. They are also more aware of the laws and standards that apply to their practices. Higher profit growth is crucial for younger and newer companies to declare greater performance than more established ones. According to Ahmad-Zaluki,

Earnings Management

Earnings management is the deliberate alteration of financial or accounting data by management of a corporation to convey information unknown to markets about the firm's future performance in order to maximize value for stakeholders. In order to strengthen their position, firm managers may control earnings to conceal information that stakeholders should be aware of or to influence the terms of contracts that depend on reported accounting numbers, which is one way that agency problems may contribute to EM (Iturriaga & Hoffmann, 2005). Furthermore, Almaqtari et al., (2021) described earnings management as the managers' decisions regarding various accounting decisions, additional actions including voluntary disclosure, the estimation of accruals to affect earnings purposefully, and voluntary earnings forecasting. According to Sniper (1989), disclosure management is the intentional intervention in the external financial reporting process to achieve some sort of personal gain. Earnings management is a tactic used by a firm's management to consciously influence the earnings of the company so that the results meet a pre-established target. This procedure is used to smooth out income. Companies will attempt to maintain the figures generally steady by

adding and subtracting cash from reserves accounts to avoid having years of extraordinarily excellent or terrible earnings (Statovci et al., 2021).

Earnings management is intended to deceive stakeholders about the company's true economic performance or to sway the results of contracts that rely on disclosed accounting data (Shadrach & Yakura, 2021). Companies engage in earnings manipulation to cover up financial reporting that differs from actual performance (Isakovic-Kaplan & Dupovac, 2022).

Empirically, earnings management has been assessed using a variety of indicators, including discretionary accruals calculated using the Modified Jones model, the Larcker and Richardson model that includes components for book value and operating cash flows, and the Kothari formula that includes an intercept and lag in return on assets to reduce econometric issues with estimating discretionary accruals. Modified Jones model has been frequently used in all of the models discussed above to calculate discretionary accruals. Because it has been empirically demonstrated to be the most accurate method of identifying managerial discretion in financial statements, this model was chosen for this investigation.

2.2 Empirical Review

Umar and Sani (2024) investigate the relationship between firm characteristics and earnings management within the Sub-Saharan African context. The study finds that firm-specific attributes, including size, age, and financial structure, play a significant role in shaping earnings management behavior. Larger and more established firms are more likely to engage in earnings management practices, possibly due to greater operational complexity and increased pressure to meet market expectations. The findings suggest that firm characteristics can either constrain or facilitate managerial discretion depending on the governance environment and institutional setting. The study emphasizes that weak regulatory frameworks and limited monitoring mechanisms in emerging economies may amplify the tendency for earnings manipulation.

Overall, the research highlights the importance of firm-level determinants in explaining variations in earnings management and underscores the need for stronger governance and regulatory oversight to enhance financial reporting quality.

Appiah et al., (2023) examine the relationship between corporate governance and financial reporting quality in emerging economies. Their findings reveal that effective governance mechanisms, such as strong board oversight and audit structures, play a significant role in enhancing the credibility and transparency of financial reports. Firms with robust governance frameworks tend to exhibit higher reporting quality, thereby reducing information asymmetry and limiting managerial opportunism. The study further highlights that weak governance structures are associated with lower reporting quality and a higher likelihood of earnings manipulation. These findings reinforce the importance of governance practices in promoting accountability and ensuring reliable financial disclosures. Overall, the study provides empirical support for the argument that strengthening corporate governance is essential for improving financial reporting quality in emerging market environments.

Alhadab and Nguyen (2022) investigate the role of corporate governance in constraining real earnings management in emerging markets. Their findings indicate that strong governance mechanisms significantly reduce managers' ability to engage in opportunistic real activities manipulation, thereby enhancing the quality of financial reporting. This supports the view that effective monitoring and oversight help mitigate agency conflicts between managers and shareholders. However, the study also notes that the effectiveness of governance mechanisms may be influenced by firm-specific conditions, particularly during periods of financial pressure when incentives for earnings manipulation are heightened. Overall, the study underscores the importance of robust corporate governance in limiting real earnings management, while suggesting that governance

structures should be complemented by strong regulatory and institutional frameworks.

Hartanto and Candy (2022) examined the impact of firm attributes (proxied by firm size, capital structure and operating cash flow) and earnings management on stock return for 59 Indonesian firms before and during the pandemic for 2016 and 2020. The result of the pooled least squares estimation technique revealed that during a pandemic, capital structure exerts a negative influence on stock return, while earnings management increases stock return before and during the pandemic.

Githaiga, Kabete, and Bonareri (2022) analysed the mediating role of firm size on the relationship between board traits (proxied by board size, independence, board gender diversity, and board financial expertise) and earnings management for 88 listed firms in the East African community spanning 2011 and 2020. The empirical finding of the System Generalized Method of Moment firms with independent boards, better gender diversity, and better financial proficiency constrains earnings management, whereas large firms with larger board size large boards are ineffective in preventing earnings manipulation.

Ashraf and Qian (2021) examined the nexus between board internationalization and real earnings management for 2899 firms listed on Shanghai and Shenzhen stock markets for 2008 and 2017. The panel least square method was used to analyze the empirical results of the study, which show an adverse connection between board internationalization and earnings management. This relationship suggests that having more foreign directors on corporate boards increases the effectiveness of the boards in overseeing management, which in turn reduces the amount of real earnings management.

Wu, Coleman and Bawuah (2020) examined the linkage between corporate governance mechanism and earning management of non-financial firms over the period of 2012 and 2016 in Nigeria and Ghana. The study found that firms with effective sound corporate governance

policy in terms of board procedure and ownership structure mitigate the alteration of expenditures by corporate managers.

Abdulsalam and Babangida (2020) examined the role of firm size, leverage and sales on sustainability reporting practices of six oil and gas firms in Nigeria spanning 2004 and 2018. The result of the fixed effect estimation technique indicates that firm size improves sustainability reporting practice and performance of Oil and Gas firms in Nigeria whereas sales and leverage inhibit sustainability reporting practice and performance of Oil and Gas firms in Nigeria.

Yimenu and Surur (2019) investigated the role of firm attributes (proxied by firm leverage and size, profitability, board composition, liquidity, shares dispersion and type of auditor) on earnings management (proxied by discretionary accruals) using a sample of 14 manufacturing firms in Ethiopia over the period of 2009 and 2017. The authors employed random effect estimator and established that profitability, liquidity, board composition and firm audited by big4 minimizes earnings management while large firms with high debt manipulate earnings management to signal investors.

Putri and Indriani (2019) evaluate the influence of firm-specific parameters (proxied by profitability, leverage, and firm size) on financial reporting quality (proxied by discretionary accrual) for 36 property and real estate firms listed in Indonesia for the period of 2015 and 2017. The empirical finding of the study revealed that leverage and profitability exert a significant and positive influence on discretionary accrual which indicates that property and real estate firms in Indonesia indulge in earning management which lower quality of financial disclosure.

Ghani, Azemi and Puspitasari (2019) investigated the relationship between firm traits (proxied by firm size, firm profitability and firm leverage) and earning management for 83 firms over the period of 2015 and 2016. The outcome of the study established that firm size induces earning management while profitable firm

and high leveraged firms indulge less in earning management.

Alhassan, Gololo and Islam (2019) examined the link between audit committee traits (proxied by financial expertise, tenure and share ownership) and earning management (proxied by discretionary accrual) of 10 manufacturing firms spanning the period of 2010 and 2019. Using random effect estimation technique, the study found that financial skill and audit committee share ownership decreases earning management of manufacturing firms in Nigeria.

Khanh and Khuong (2018) investigated the impact of audit quality (proxied by Big 4 or non-Big 4) and firm-specific element (proxied by profitability (proxied by ROA), size, leverage, age) on earnings management (proxied by real discretionary accrual) of 241 listed firms over the period of 2010 to 2016. The study found that audit quality does not influence earnings management of listed Vietnam firms. The study's findings also show that while older, high-debt enterprises participate in profits management, larger

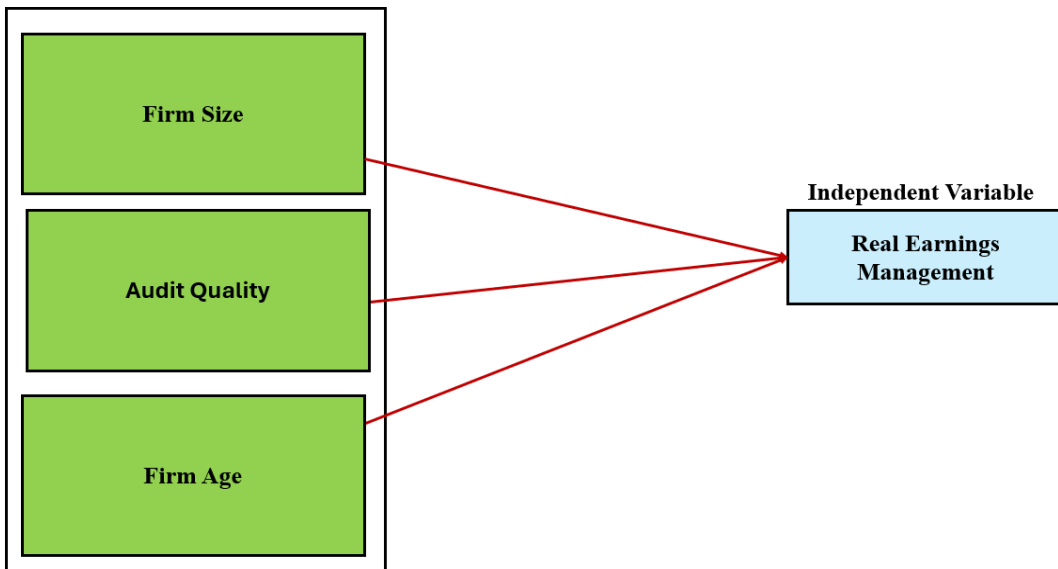
firms do not manipulate sales, discretionary spending, or production costs.

Sial, Chunmei, Khan and Nguyen (2018) examined the connection amongst corporate social responsibility, firm performance (proxied by Tobin Q) and earnings management (proxied by discretionary accrual and manipulation of production cost) of Chinese listed firms on Shenzhen and Shanghai stock exchanges over the period of 2009–2015. The GMM estimate technique's findings demonstrated that corporate social responsibility initiatives advocated by managers as a cover for their profit management had a negative impact on the performance of the company. Additionally, Chinese companies perform poorly because to high levels of symbolic CSR and high values of earnings management.

Conceptual Framework

The conceptual framework of the study dependent variables (firm size, audit quality and firm age) and dependent variable (Earnings management).

Independent Variables



Source: Researcher 2025

2.3 Theoretical Review

Positive Accounting Theory

According to Watts and Zimmerman's Positive Accounting Theory (PAT), accounting decisions can help with the creation and execution of these contracts. To make the present financials appear appealing enough to various contracting organizations who use them to determine their terms of contract and charges for the firm, managers may report incomes with slack verifiability while ignoring losses with similar characteristics. For instance, large companies may understate their profits when reporting them in order to comply with antitrust regulations (Healy and Whalen, 1999; Othman et al., 2006). According to the notion, companies would pick strategies that best maximize benefits for the company as a whole, not only for shareholders. According to this notion, the organization is composed of selfish individuals who work together. Watts and Zimmerman (1978) assert that a firm's management's decisions on accounting policies and actions have an impact on the PAT. The management's drive to enhance their own utility is directly responsible for these decisions. According to this idea, a firm's use of discretionary accruals can be influenced by internal (firm-specific characteristics) and external (contractual commitments, etc.) motives. Three perspectives efficiency viewpoint, opportunistic perspective, and contractual perspective are available when choosing among accounting policies offered by (PAT).

Signalling Theory

The signalling theory posits that firm managers use accruals to signal future earnings in the market. According to the theory, the existence of information asymmetry can also be seen as a justification for good businesses using financial data to communicate with the market (Ross, 1977). Information that managers make available to the market minimizes information asymmetry and is seen favorably by the market. Management of a corporation will engage in earnings management to signal their performance. The idea further asserts that managers manipulate results to show their inside knowledge about the prospects of their

companies. Through earnings management, managers can influence the stock price by generating a consistent stream of growing earnings over time. However, because there is an information gap between management and owners, managers often choose accounting procedures and computations for their benefit, which might conceal the genuine economic value of the company.

Managers have the discretion to manipulate results to convey either positive or negative information to the capital markets about the company's prospects. The ability to control reported earnings allows for changes in corporate stock valuation that are optional and independent of actual cash flows.

3. Methodology

The study uses a quantitative expo-facto research approach to examine how earnings are managed at listed cement companies in Nigeria. Ex post facto research designs entail looking into something after it has already happened, without the researcher getting involved (Kerlinger, 1964). Ex post facto research design is an empirically supported inquiry that looks at the effects of an independent variable on a dependent variable without the researcher having any direct influence over it. The study focused on all the cement companies listed on Nigerian Stock Exchange as at 31st December, 2021. There are 3 cement companies listed in Nigerian Stock Exchange now, Nigerian Exchange Group, which are Dangote Cement Plc, BUA cement Plc and Lafarge Africa Plc. The study employed secondary data from published reports of the listed cement companies covering the period of 2014 – 2021. The study utilizes panel estimation techniques, such as panel least square, fixed effect, and random effect estimation approach, to assess the impact of business characteristics on the profits management of listed cement firms in Nigeria.

Model Specification

$$EM = f(FC) \dots\dots\dots(1)$$

From Eq. [1], *EM* denote earnings management while *FC* signifies firm characteristics. For this study, firm traits entail firm size, audit quality and firm age. Thus, $EM = f(SIZ, AQ, AGE, \dots) \dots \dots \dots (2)$
 Incorporating Eq. [2] into Eq. [1] becomes $FC = f(SIZ, AQ, AGE, \dots) \dots \dots \dots (3)$
 Expressing Eq. [3] in econometric form becomes

$$EM_{it} = \alpha_i + SIZ_{it} + AQ_{it} + AGE_{it} + \epsilon_{it} \dots \dots \dots (4)$$

Where *EM* denote earnings management, α denotes firm – specific intercept, *SIZ*, *AQ* and *AGE* represents firm size, audit quality and firm age respectively.

Table 1: Measurement of Variables

Variables	Definition and Measurement of Variables
Dependent Variable	
Earning Management (EM)	<p>Earning management is the deliberate alteration of financial or accounting data by managers of a corporation to indicate information about the firm's future performance that is unknown to markets in order to maximize value for stakeholders. In accordance with Roychowdhury (2006), the manipulation of production cost measured in real earnings and based on real activities is expressed as:</p> $\frac{PROD_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \left[\frac{1}{TA_{i,t-1}} \right] + \beta_2 \left[\frac{Sales_{i,t}}{TA_{i,t-1}} \right] + \beta_3 \left[\frac{\Delta Sales_{i,t}}{TA_{i,t-1}} \right] + \mu_{i,t}$ <p>Where $PROD_{i,t}$ = production cost measured by cost of goods sold; TA = total asset and $TA_{i,t-1}$ = Total Assets in period $t - 1$; $Sales_{i,t}$ = is yearly sales while $\Delta Sales_{i,t}$ = change in yearly sales.</p>
Independent Variables (Firm Characteristics)	
Firm size (Size)	It is the optimal size of a firm in a given industry at a given time which leads to low per unit cost of production. It is measured as the natural logarithm of a firm's total assets (Ishak, Amran & Abdul-Manaf, 2018).
Audit Quality (AQ)	It is the joint probability of market assessments in which auditors discover their customers' irregularities and report them. Dummy variable that has a value of 1 if the Big Four (Deloitte, PWC, KPMG, and Ernst & Young) have audited the company's financial accounts and a value of 0 otherwise (Cudia & Dela Cruz, 2018).
Firm Age (AGE)	Number of years since the incorporation of the company (Hasnan, Razali & Hussain, 2020).

Source: Researcher's Compilation (2025)

4. Results and Discussion

Table 2: Descriptive Statistics

Variable	OBS	Mean	Std. Dev.	Max	Min
EM	24	0.0232	0.0296	0.1186	0.0013
SIZE	24	9.6314	1.098	11.884	8.5360
AQ	24	0.75	0.4423	1	0

AGE	24	47.166	15.87	63	22
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Source: STATA 14.

The descriptive statistics of the sampled listed cement firms in Nigeria throughout 2014 and 2021. Before the analysis, the descriptive statistics provide information on the distribution, symmetry, and variability of the underlying series. The result of the descriptive statistics indicates that the mean of earnings management (EM) of the listed cement firms is 0.0232 with a standard deviation of 0.0296 and ranges between 0.1186 and 0.0013. When examining firm characteristics indicators, firm size 11.8844 and 8.5360, with an

average value of 9.6314 and a standard deviation of 1.098. Furthermore, the average of audit quality is 0.75 with a maximum of 1 and a minimum of 0, which suggests that some of the listed cement firms were audited by Big 4 audit firms while some were audited by non-Big big4 audit firms. Lastly, on average age of the listed cement firms was 47.166 with standard deviation of 15.87, while the oldest firm was 63 years and youngest firm was 22 years.

Table 3: Correlation analysis

	EM	PERF	LEV	SIZE	AQ	AGE
EM	1.0000					
SIZE	0.4096	-0.1610	0.0279	1.0000		
AQ	-0.1513	0.3254	0.1490	-0.5754	1.0000	
AGE	0.3074	-0.0879	0.1334	0.2478	-0.3096	1.0000

Source: STATA 14.

The main purpose of a correlation matrix is to examine any potential multicollinearity among the independent variables. Multicollinearity. The result of the correlation among the variables showed that the correlation coefficients among the variables (EM, SIZE, AQ and AGE), results indicate that earnings management is negatively related to audit quality while earnings management is positively related to firm size

and firm age. There is a negative correlation between audit quality and firm age, there is a positive correlation between firm age and audit quality. In conclusion, the explanatory variables have relatively low cross-correlation terms. As a result, the model utilized has no significant issues with multicollinearity between variables, which improves the study's dependability.

Table 4: Variation Inflation Factor (VIF)

Variable	VIF	1/VIF
AQ	1.75	0.572073
SIZE	1.62	0.616408
LEV	1.08	0.925512
Mean VIF	2.92	

Source: STATA 14.

To be more certain that there is no multicollinearity issue with the variables, the variance inflation factor (VIF), which measures the portion of an explanatory variable's standard error caused by its correlation with other explanatory variables, was used to test for

multicollinearity. According to a general rule, variables are multicollinear if their VIF is greater than 10 ($VIF > 10$) or their tolerance is less than 0.10 ($1/VIF < 0.10$) (Magumisi & Mawanza, 2014). Since none of the variables had a VIF value larger than 10, the

multicollinearity test findings showed that there is no multicollinearity among the regressor variables. Therefore, we may draw the conclusion that the variables employed in this study do not have any multicollinearity issues.

Table 5: Regression Results on the effect of Firm Characteristics (Firm Size, Audit Quality and Firm Age) on Earnings Management

	Dependent Variable: Earnings Management (EM)		
	Pooled OLS	Fixed Effect	Random Effect
Constant/Intercept	-0.1874 [0.027]**	0.1127 [0.687]	-0.1874 [0.016]**
SIZE	0.0093 [0.168]	-0.0310 [0.339]	0.0093 [0.151]
AQ	-0.0049 [0.027]**	-0.0675 [0.227]	-0.0049 [0.767]
AGE	0.0016 [0.047]**	0.0034 [0.306]	0.0016 [0.033]**
N	24	24	24
R-sq	0.1706	0.2697	0.1927
L-M Statistics	0.00, (P=1.0000)		
F-Statistics	6.95** [0.0063]	5.18** [0.0019]	9.73*** [0.032]
Hausman Test	1.72 [0.8864]		

Source: STATA 14

The results of the Hausman, Breusch, and Pagan Lagrangian multiplier tests, as well as the results of the pooled, fixed, and random effects on the effect of firm characteristics on earnings management of listed cement firms in Nigeria. The result revealed that firm size (SIZE) has a positive but insignificant relationship with the management of listed cement firms' earnings. A coefficient of 0.0093 indicated that for every unit increase in firm size (SIZE), managers of listed cement firms in Nigeria will increase their manipulation of earnings by 0.0093%. This result goes against the expectations of the study and supports positive accounting theory and agency theory, which holds that large firms select accounting policies that allow delaying the disclosure of earnings to future periods and also experience higher agency costs that allow for more opportunistic practices. This outcome supports Biswas et al. (2022) and Pham et al. (2022)'s findings that big businesses engage in earnings management.

Audit quality (AQ) has a negative and significant impact on the management of profitability for Nigerian listed cement companies. According to the coefficient value of -0.0049, a unit rise in audit quality will lessen the earnings management of Nigeria's listed cement firms. This result is consistent with that of Bassiouny, Soliman, and Ragab (2016) and Cudia and Dela Cruz (2018), whose studies shown that the audit quality of listed industrial firms in the Philippines and listed Egyptian firms respectively mitigates earnings management.

Company age has a positive and significant impact on how earnings management is handled by the listed cement manufacturers in Nigeria. The coefficient value of 0.0016 showed that among Nigeria's listed cement manufacturers, profits manipulation rises as a firm gets older. The findings of Jackson, Rountree, and Weston (2013), Kouwenberg and Thontirawong (2016), and Khanh and Nguyen (2018), studies that indicated a

positive association between earnings management and firm age and suggested that wages manipulation grows as firms mature, are supported by the current finding. The F statistic, which is 6.95 with a p-value of 0.0063, indicates that the model's overall validity is good.

Additionally, the value of 0.1706 shows that company characteristics (measured by profitability, leverage, firm size, audit quality, and firm age) accounted around 17.06% of the variation in earnings management of listed cement companies in Nigeria.

Table 6: Diagnostic Tests based on the estimated Pool Ordinary Least Square model.
ARDL model

Test	F-statistic/P-Value
Serial correlation LM test	1.367 [0.3628]
Heteroscedasticity test (ARCH)	0.84 [0.3581]
Ramsey RESET Test (specification form)	1.15 [0.3726]

Source: Author's Computation

Diagnostic testing. With the use of the Breusch-Pagan/Cook-Weisberg test, heteroskedasticity was evaluated. At the 5% level of significance ($=0.84$; $Pr > 0.05$), the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity in the residual yields a probability value of 0.3581. As a result, we accept the homoscedasticity null hypothesis and reject the presence of heteroskedasticity alternative hypothesis. The outcome showed that the dataset's homoscedasticity assumption was not broken. Also, the Ramsey Regression Specification Error Test (RESET) indicates the probability value of 0.3726 at the 5% significance level ($F=1.15$; $Pr > 0.05$) which means that we do not reject the null hypothesis that the original estimated linear form is the correct specification of the model.

Hypotheses Testing

Hypothesis 1

H₀₁: Firm Size has no significant effect on earnings management of quoted cement firms in Nigeria. Size has a positive and insignificant relationship with earnings management of listed cement firms, with a coefficient of 0.0093 indicating that one unit increase in firm size (SIZE) will lead to an increase in earnings manipulation by managers of listed cement firms in Nigeria by 0.0093 percent ($\beta = 0.0093$, $t= 1.44$, $p=0.168$). This result contradicts the expectation of this study and support the positive accounting theory and agency theory that large firms choose accounting

policies that permit postponing the earnings disclosure to future periods and also witness greater agency costs which give room for more opportunistic practices The implication of the positive effect of firm size on earnings management suggests that large firm indulge earnings manipulation due to their bargaining power with auditor which gives room for more opportunistic practices. This outcome supports Biswas et al. (2022) and Pham et al. (2022)

Hypothesis 2

H₀₂: Audit quality has no significant effect on earnings management of quoted cement firms in Nigeria. Audit quality (AQ) has a negative and significant effect on earnings management of listed cement firms in Nigeria. The coefficient value of -0.0049 implies that a unit increase in audit quality will mitigate earnings management of listed cement firms in Nigeria ($\beta = -0.0049$, $t= -2.40$, $p=0.027$). This result is consistent with that of Bassiouny, Soliman, and Ragab (2017) and Cudia and Dela Cruz (2018), whose studies showed that the audit quality of listed industrial firms in the Philippines and listed Egyptian firms, respectively mitigates earnings management.

Hypothesis 3

H₀₃: Firm age has no significant effect on earnings management of quoted cement firms in Nigeria. Concerning the effect of firm age on earnings management, the result of the pooled model indicates

that firm age exerts a positive and significant effect on earnings management of the listed cement firms in Nigeria. The coefficient value of 0.0016 revealed that as firms age, earnings manipulation increases among listed cement firms in Nigeria ($\beta = 0.0016$, $t = 2.13$, $p = 0.047$). The findings of Khanh and Nguyen (2018), studies that indicate a positive association between earnings management and firm age. Hence, the null hypothesis that firm age has no significant effect on earnings management of quoted cement firms in Nigeria is rejected.

5. Conclusions and Recommendations

The conclusion and recommendations is in line with the result of the study

- i. Furthermore, firm size (SIZE) has a positive and insignificant relationship with earnings management of listed cement firms, with a coefficient of 0.0093 indicating that one unit increase in firm size (SIZE) will lead to an increase in earnings manipulation by managers of listed cement firms in Nigeria by 0.0093 percent ($\beta = 0.0093$, $t = 1.44$, $p = 0.168$).
- ii. In addition, the result of the study established that audit quality (AQ) has a negative and significant effect on earnings management of listed cement firms in Nigeria. The coefficient value of -0.0049 implies that a unit increase in audit quality will mitigate earnings management of listed cement firms in Nigeria ($\beta = -0.0049$, $t = -2.40$, $p = 0.027$).
- iii. Lastly, the study found that firm age exerts a positive and significant effect on earnings management of the listed cement firms in Nigeria. The coefficient value of 0.0016 revealed that as firm ages, earnings

manipulation increase among listed cement firms in Nigeria ($\beta = 0.0016$, $t = 2.13$, $p = 0.047$). Based on these findings, the study therefore concludes that firm performance and audit quality mitigate earnings management among listed cement firms in Nigeria.

- i. It is recommended that the listed cement firms in Nigeria should consistently engage the services of big4 audit firms as external auditor because big4 audit firms have a very huge incentive to maintain a high audit quality, have a reputation that might be lost if they didn't report a misstatement or a manipulation audit committee member with expertise. This will assist in checkmating the operations of the managers and limit the instance of earnings management.
- ii. It is also recommended that listed cement firms should include more members with substantial shareholding in the audit committee because of their willingness to protect their investment helps in proper monitoring and supervision, thereby reducing the possibility of earnings management.
- iii. Lastly, since leverage is one of the most representative indicators on how the debt level is to the equity, therefore it is recommended that the debt obtained from outsiders (creditors) by listed cement firms should be managed more effectively in order to drive positive financial performance.

Future researchers can explore the financial sector, explore the comparative analysis amidst sectors on the subject matter

REFERENCES

- Abubakar, M. (2016). *Effect of Audit Quality and Corporate Governance on Real Activities Manipulation in Nigerian Banks*. <https://doi.org/10.20472/efc.2016.006.001>
- Abdulsalam, N. K. & Babangida, M. A. (2020). Effect of sales and firm size on sustainability reporting practice of Oil and Gas Companies in Nigeria. *Journal of Research in Business and Management*, 8(1), 1-8.
- Adedeji, G., Joseph, A., Harada, Y., Suwanno, O., &

- Ahmed, A. (2023). Benchmark beating and earnings manipulation in Nigerian firms. *Asian Economic and Financial Review*, 13(1), 49–73. <https://doi.org/10.55493/5002.v13i1.4694>
- Alhadab, M., & Nguyen, T. (2022). Corporate governance and real earnings management: Evidence from emerging markets. *Journal of International Financial Markets, Institutions and Money*, 78, 101545.
- Almaqtari, F. A., Farhan, N. H. S., Salmony, M. Y., Al-Ahdal, W. M., & Mishra, N. (2021). Earning management estimation and prediction using machine learning: A systematic review of processing methods and synthesis for future research. *Proceedings of International Conference on Technological Advancements and Innovations, ICTAI 2021*, 291–298. <https://doi.org/10.1109/ICTAI53825.2021.9673157>
- Appiah, K. O., Agyemang, O. S., & Djajadikerta, H. (2023). Corporate governance and financial reporting quality in emerging economies. *Journal of Accounting in Emerging Economies*, 13(2), 345–367.
- Ashraf, B. N. & Qian, N. (2021). The impact of board internationalization on real earnings management: Evidence from China. *Sage*, 1-18.
- Bala, R. N. (2021). Concept of firm attributes: A review of literature. *Academia Letters*, 1-4.
- Bassiouny, S. W., Soliman, M. & Ragab, A. (2016). The impact of firm characteristics on earnings management: An empirical study on the listed firms in Egypt. *Journal of Business and Retail Management Research*, 7(2), 91–101.
- Das, R. C., Mishra, C. S. & Rajib, P. (2018). Firm-specific Parameters and Earnings Management: A Study in the Indian Context. *Global Business Review*, 19(5), 1240–1260.
- Ghani, E. K., Azemi, N. A. M. & Puspitasari, E. (2019). The effect of firm characteristics on earnings management practices among Malaysian public listed companies in the technological industry. *Management & accounting review*, 18(1), 41-55.
- Habib, A., Ranasinghe, D., & Bhuiyan, M. B. U. (2021). Determinants of real earnings management: International evidence. *International Journal of Accounting & Information Management*, 29(3), 389–415.
- Hasnan, S., Razali, M. H. M. & Hussain, A. R. M. (2020). The effect of corporate governance and firm-specific characteristics on the incidence of financial restatement. *Incidence of financial restatement*, 28(1), 244-267.
- Hassan, Y., Abousamak, A., & Hijazi, R. (2022). Does Corporate Governance Constrain Earnings Management in an Unstable Economic and Political Environment? *Asian Economic and Financial Review*, 12(12), 1074–1093. <https://doi.org/10.55493/5002.v12i12.4670>
- Hossain, D. A. (2021). Ownership Structure and Earnings Management: Empirical Evidence from Listed Pharmaceuticals and Chemical Firms of Bangladesh. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3742211>
- Isaković-Kaplan, Š., & Dupovac, S. (2022). Earnings management and fraudulent financial reporting: Distinctive criteria of suspicious accounting practices. *BH Ekonomski Forum*, 16(1), 95–109. <https://doi.org/10.5937/bhekofor2201095i>
- Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency cost and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Khan, I., Khan, I., & Saeed, B. B. (2023). Does ESG performance constrain real earnings management? Evidence from developing markets. *Sustainability*, 15(4), 3120.
- Khanh, H. T. M., & Nguyen, V. K. (2018). Audit Quality, Firm Characteristics and Real Earnings Management: The Case of Listed Vietnamese Firms. *International Journal of*

Economics and Financial Issues, 8(4), 243-256.

- Lassoued, N. (2022). Audit quality and earnings management: New evidence from emerging markets. *Managerial Auditing Journal*, 37(5), 567–589.
- Lee, J., & Chung, S. G. (2019). Analysts' reactions to firms' real activities management. *Review of Accounting and Finance*, 18(4), 589–612. <https://doi.org/10.1108/RAF-05-2017-0105>
- Odera, O., James, K., Scott, A., & Gow, J. (2020). Corporate social responsibility reporting of international oil companies in Nigeria: An historical materialism analysis. *International Journal of Ethics and Systems*, 36(1), 131–146. <https://doi.org/10.1108/IJOES-04-2019-0071>
- Orazalin, N. & Akhmetzhanov, R. (2018). Earnings management, audit quality, and cost of debt. Evidence from a Central Asian economy. *Managerial Auditing Journal*, 15(43), 342-351.
- Putri, C. W. A. & Indriani, M. (2019). Firm characteristics and financial reporting quality: A case of property and real estate companies listed in Indonesian stock exchange. *Journal of Accounting Research, Organization and Economics*, 2(3), 193-202.
- Rahman, S. & Widyasani, R. (2020). Firm characteristics and earnings management in Sri Lanka. *Journal of Asian Business and Economic Studies*, 27(1), 2-18.
- Sial, M. S., Chunmei, Z., Khan, T. & Nguyen, V. K. (2018). Corporate social responsibility, firm performance and the moderating effect of earnings management in Chinese firms. *Asia Pacific Journal of Business Administration*, 10(2/3), 184-199.
- Sniper, K. (1989). Commentary on earnings management. *Accounting Horizons*, 3, 91-102.
- Statovci, B., Berisha, V., & Tahirukaj, J. (2021). Level of usage of income smoothing as a creative accounting tool by balkan banks. *Banks and Bank Systems*, 16(3), 63–70. [https://doi.org/10.21511/bbs.16\(3\).2021.06](https://doi.org/10.21511/bbs.16(3).2021.06)
- Thaller, J., Duller, C., Feldbauer-Durstmüller, B., & Gärtner, B. (2024). Career development in management accounting: empirical evidence. *Journal of Applied Accounting Research*, 25(1), 42–59. <https://doi.org/10.1108/JAAR-03-2022-0062>
- Umar, A., & Sani, A. A. (2024). Firm characteristics and earnings management in Sub-Saharan Africa. *African Journal of Economic and Management Studies*, 15(1), 88–105.
- Watts, R. L. & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *Accounting Review*, 53, 112–134.
- Wu, M., Coleman, M. & Bawuah, J. (2020). The Predictive Power of K-Nearest Neighbor (KNN): The Effect of Corporate Governance Mechanisms on Earnings Management. *SAGE*, 10, 215824402094953.
- Yimenu, K. A. & Surur, S. A. (2019). Earning Management: From Agency and Signalling Theory Perspective in Ethiopia. *Journal of Economics, Management and Trade*, 24(6), 1-12.