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Strengthening Audit Quality: How Audit Committee Independence Shapes the Effect of Auditor Independence

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Abstract

This study investigated how audit committee independence shapes the relationship between auditor independence and audit quality in Nigerian non-financial firms. Motivated by persistent concerns over financial reporting credibility and inconclusive evidence in prior research, the study adopts a longitudinal research design covering 110 listed non-financial firms on the Nigerian Exchange Group (2012–2022). Secondary data were obtained from annual reports and analysed using panel regression models with robust fixed-effects estimation, following diagnostic tests for normality, heteroskedasticity, multicollinearity, autocorrelation, unit roots, and cross-sectional dependence. The descriptive statistics reveal considerable variation in audit attributes across firms, while correlation analysis indicates a moderate negative relationship between accrual quality and auditor independence. Regression results show that auditor independence, measured by the ratio of audit fees to client revenue, has no significant direct effect on audit quality. Similarly, audit committee independence, measured by the proportion of non-executive directors on audit committees, does not exert a significant standalone effect. However, the interaction between auditor independence and audit committee independence is positive and statistically significant, indicating that audit committee independence moderates and strengthens the effect of auditor independence on audit quality. These findings suggest that independence on its own, whether of auditors or audit committees, may be insufficient in enhancing audit quality in Nigeria's institutional context. Instead, the interaction of both mechanisms creates a governance structure strong enough to safeguard audit quality. The study provides novel evidence from an emerging economy and highlights practical implications for regulators.

Keywords: Audit quality, Auditor independence, Audit committee independence, Moderating effect, Nigeria.

1. Introduction

Audit quality, the outcome of the audit function performed by external auditors, is critical to the relevance and usefulness of financial reporting. High-quality audits enhance the reliability of financial statements and support informed decision-making by stakeholders (Dare, Efuntade, Alli-Momoh, & Efuntade, 2021). Audit quality has been linked to improved disclosure quality, efficient capital markets, and economic growth (Aobdia, Lin, & Petacchi, 2015; Dashtbayaz & Mohammadi, 2015).

The International Auditing and Assurance Standards Board (IAASB, 2014) emphasizes that although audit quality is widely debated in research, regulation, and practice, a universally accepted definition remains elusive. Nonetheless, scholars argue that weak compliance with auditing standards, self-interest threats, and compromised auditor independence undermine audit quality, eroding public confidence in audit reports (Akhalumeh, Agweda, & Ogunkua, 2017, as cited in Omoregie & Dibia, 2020).

The central role of audits is to enhance users' confidence in financial statements through sufficient and appropriate evidence that supports the auditor's opinion on whether financial reports present a true and fair view (Chih-Ying, Chiou, & Lin, 2008). Conversely, poor audit quality reduces earnings quality and

undermines investor confidence, with wide-ranging consequences for employees, customers, suppliers, and economies (Boshnak, 2021).

Globally, compromised audit quality has been linked to corporate collapses such as Enron, WorldCom, and Parmalat (James & Izien, 2014; Asiriuwa et al., 2018; Omoregie & Dibia, 2020). In Nigeria, notable scandals include Cadbury Nigeria Plc, Lever Brothers Nigeria Plc, Savannah Bank, and Intercontinental Bank Plc, implicating prominent audit firms such as Arthur Andersen, Deloitte, and Akintola Williams (Abdullahi, Enyinna, & Ahunanya, 2010; Bakare, 2007). These failures highlight the dangers of impaired auditor independence and weak oversight, with regulators imposing penalties on audit firms globally (Arens & Loebbecke, 2000; Bloomberg, 2003; Aldrick, 2009).

Recent scholarship underscores rising stakeholder concern about audit quality, driven by fraudulent reporting and corporate collapses (Akhori, Ibadin, & Okafor, 2023; Sanni, Abdulazeez, & Babatunde, 2021). Audit firm attributes such as auditor independence, audit tenure, fees, rotation, and firm size have been consistently identified as determinants of audit quality (Omoregie & Dibia, 2020; Hosseinnia-Kani, Inacio, & Mota, 2014). For instance, long auditor-client relationships may compromise objectivity, while excessive reliance on client

fees can impair independence (Myers, Myers, & Omer, 2003; Richards, 2006).

While these attributes influence audit quality directly, scholars argue that contextual factors can strengthen or weaken these relationships (Ormin, 2023). One such factor is the audit committee, which plays an oversight role in financial reporting and external audit processes. Empirical studies reveal that audit committee characteristics—particularly independence—improve audit efficiency and reliability (An, 2023; Boshnak, 2021; Dare et al., 2021; Asiriwa et al., 2018). In Nigeria, the Companies and Allied Matters Act (2020) mandates the establishment of audit committees, reflecting global recognition of their importance in corporate governance.

Audit committee independence, defined as the proportion of independent directors on the committee, has been found to strengthen oversight, enhance auditor objectivity, and ensure higher audit quality (Boshnak, 2021). Independent audit committees are more likely to recommend the appointment of high-quality auditors, demand rigorous audit procedures, and safeguard auditor independence from client influence (Cohen, Krishnamoorthy, & Wright, 2014; Bako, 2024).

This study therefore investigates the interaction between auditor independence and audit quality, audit committee independence and audit quality, with a particular focus on the moderating role of

audit committee independence in Nigerian non-financial firms. By addressing the persistent audit failures and weak disclosure practices in the sector (Okaro & Okafor, 2011; Chukwu & Nwabochi, 2019, as cited in Dare et al., 2021), the study contributes to the debate on how corporate governance mechanisms can reinforce auditor independence and enhance audit quality.

The remainder of this article is structured as next is the literature review and hypotheses development, then the methodology followed by the results, discussion and finally the policy implication of the results.

2. Literature Review and Hypotheses development

The literature review is set out to review the concepts of audit quality, audit committee independence and external auditor's independence. Therefore, present the review of prior empirical studies with hypotheses of the study.

Concept of Audit Quality

Audit quality is widely recognized as a cornerstone of corporate governance. Scholars contend that it underpins the credibility of financial statements and safeguards the interests of diverse stakeholders (Akhilumeh, Agweda, & Ogunkua, 2017). Regulators and audit firms often view audit quality through a compliance lens. That is, audits are deemed high quality when they adhere to professional standards.

Researchers emphasize that quality is multidimensional, encompassing detection and reporting of misstatements, assurance levels, and market perceptions of auditors' competence and independence (DeAngelo, 1981; Chen, Elder, & Liu, 2005). Palmrose (1988) defines audit quality in terms of the assurance that financial statements are free from material misstatements, while Knechel (2009) notes that capturing audit quality is difficult because audits are tailored services executed under varying client conditions. Overall, audit quality depends on factors such as auditor independence, expertise and diligence, and it promotes investor confidence by reducing information asymmetry (Ogujiofor, Anichebe, & Ozuomba, 2017).

Empirical studies operationalize audit quality using diverse proxies because the construct cannot be directly observed. Krishnan and Sehaver (2000) measured audit quality by assessing compliance with eight specific GAAP reporting requirements. Many researchers use audit firm size or Big 4 membership as proxies, on the premise that larger firms have more resources and higher reputational stakes (Chancy & Philipich, 2005). Other measures include discretionary accruals, restatements, auditor litigation, audit report lag, and comparisons between Big 4 and non-Big 4 auditors (Srinivasan, 2005; Dea, Raghunand, & Rama, 2012). Some studies evaluate audit engagement hours or fees to gauge the effort auditors expend (Caramasris & Lennox, 2008),

while others examine earnings response coefficients and abnormal accruals as indirect indicators of audit quality (Chi et al., 2009). The lack of consensus on a single measure underscores the complexity of auditing and the need for multiple proxies to triangulate audit quality (Bradshaw, Miller, & Serafain, 2011).

Audit quality is an unobservable construct that reflects the auditor's ability to detect and report material misstatements, so researchers rely on observable outputs and indirect indicators. Discretionary accruals capture the portion of reported earnings that is subject to managerial discretion and potential manipulation. Higher discretionary accruals imply that auditors have failed to constrain earnings management, which suggests lower audit quality. Because direct assessment of audit quality is impractical, scholars often use discretionary accruals as a proxy, despite acknowledging that it is a noisy measure. Using discretionary accruals in this study therefore aligns with prior research that treats earnings management as a measure of auditors' effectiveness and independence in enforcing accounting standards.

Concept of Auditor Independence

Auditor independence is fundamental to audit quality because it preserves the auditor's objectivity and credibility. The American Institute of Certified Public Accountants (AICPA, 1997) defines independence as the absence of interests that create an unacceptable

risk of material bias. Carey and Doherty (1966) describe it as avoiding circumstances that impair objectivity, while the American Accounting Association (1973) interprets independence as freedom from influence or control over the auditor's conduct. Independence manifests in two dimensions: independence in fact (also called independence in mind) and independence in appearance (Al-Khoury et al., 2015). Independence in fact reflects the mental state that allows auditors to make unbiased judgments; independence in appearance pertains to external perceptions of objectivity. Both dimensions are essential for public confidence (Lindberg & Beck, 2009). Scholars argue that auditors must both act independently and be seen to be independent, as even a perception of bias can erode trust (Olagunju, 2011).

Measuring auditor independence empirically is challenging because mental states cannot be directly observed. Researchers therefore rely on proxies. One common proxy is auditor tenure, as long tenure may threaten independence through familiarity, while shorter tenure may enhance objectivity (Jeanjean & Stolowy, 2008). Audit partner rotation is another regulatory mechanism intended to maintain independence; however, empirical findings are mixed. Lennox and Li (2014) argue that partner rotation reduces complacency and improves audit quality, whereas Chi et al. (2009) and Chen, Peng and Xin (2020) find that partner rotation has no

significant effect on audit quality (as measured by discretionary accruals and going-concern opinions). Factors such as audit firm size and industry specialization may also influence independence, but there is no universally accepted measure of auditor independence beyond these proxies. The distinction between independence in fact and independence in appearance further complicates measurement, as proxies may capture appearance but not necessarily mindset (Pany & Reckers, 1980).

Auditor independence is threatened when auditors become economically dependent on their clients. The auditor–client relationship is often described as a bilateral monopoly in which the auditor may have incentives to compromise independence in order to retain the client. It is worth noting that auditors' financial dependence on clients is an inherent risk to independence factor, and the Cohen Commission observes that true independence is almost impossible because auditors are paid by the entities they audit (Raynolds & Francis, 2000). When a single client covers a large portion of the auditor's revenue, this economic fee dependence is especially acute. Measuring independence as the ratio of audit fee to client sales captures the relative economic importance of the client. A high ratio suggests the auditor is financially reliant on the client, increasing the risk of compromised independence, whereas a low ratio indicates a diversified revenue base and greater ability to resist management pressure.

This study therefore adopts the audit fee-to-sales ratio as an empirical proxy for auditor independence.

Concept of Audit Committee Independence

Audit committee independence refers to the extent to which committee members are free from management influence and can provide objective oversight of financial reporting. An audit committee is a standing committee of the board charged with overseeing financial reporting, internal controls and the external audit process (Magiyebo, Okpanedu, & Nyor, 2018). The Companies and Allied Matters Act (CAMA) 2020 and the Securities and Exchange Commission codes in Nigeria require public companies to establish audit committees with a mix of directors and shareholders, at least one member of whom is a qualified accountant. Independence is considered vital because it ensures that the committee acts in the interests of shareholders rather than management. Krishnan (2005) notes that independent directors on audit committees monitor management more effectively than insiders; regulatory regimes like the Sarbanes-Oxley Act (2002) and the Combined Code (2008) therefore mandate independent audit committees. Ayinde (2002) emphasises that audit committees promote corporate accountability by working with internal auditors and management to enhance financial reporting practices, while

Vafeas (2005) argues that larger committees with diverse expertise are more effective.

Researchers measure audit committee independence using structural and behavioural proxies. Structural measures include the proportion of independent directors on the committee, the presence of at least one financial expert, and the total size of the committee (Abbott, *et al.*, 2004; Vafeas, 2005). CAMA 2020 requires that public companies' audit committees have five members, with a majority being non-executive directors and at least one professional accountant. The frequency of committee meetings is another indicator; Abbott *et al.* (2004) recommend that committees meet at least quarterly, which allows them to stay informed and provide timely oversight. Studies also examine whether the committee chair is independent and whether the committee interacts regularly with external and internal auditors (Krishnan, 2005). The effectiveness of these proxies varies, but they collectively capture key aspects of independence, composition, expertise and engagement.

Audit committees are charged with overseeing financial reporting and the external audit process, and regulatory frameworks stress that members must be independent to provide objective oversight. Exchange and SEC rules require public companies to have an audit committee composed of at least three independent directors who meet enhanced

independence standards and have the financial literacy to understand the company's accounts orrick.com. These standards specify that directors cannot have material relationships with the company and must be free from ties that could interfere with their judgment.

In empirical research, audit committee independence is often operationalized as the percentage of independent directors on the committee, and committees with a higher proportion of independent members are expected to provide more rigorous oversight. This study therefore measures audit committee independence by the proportion of independent directors, consistent with regulatory expectations and prior literature on governance effectiveness.

Moderating Role of Audit Committee Independence

Audit committee independence is expected to directly influence audit quality; it also moderates the relationship between other audit determinants, such as auditor independence and audit quality. Asiriuwa, *et al.* (2018) argue that independent audit committees mitigate agency problems by monitoring both management and external auditors, thus enhancing audit quality. Agency theory supports this view, suggesting that independence reduces information asymmetry and aligns the interests of managers and shareholders. Habbash (2015) and Talpwi *et al.* (2018) contend that independent committees

improve disclosure quality and stock market transparency by ensuring rigorous oversight, while Zganni, *et al.* (2016) find that independence decreases audit report issuance time and enhances earnings quality.

Studies examining the moderating effect of audit committee independence typically interact proxies for independence with other variables to assess changes in audit quality. Song and Windram (2019) identify three key moderating variables: (1) the percentage of independent directors on the audit committee, (2) the presence of financial experts and (3) meeting frequency. When these indicators signal high independence, audit committees are more likely to scrutinize auditors' work rigorously, facilitate transparent communication and recommend high-quality external auditors. -Conversely, low independence, signified by fewer independent members, lack of expertise or infrequent meetings, reduces scrutiny and may allow compromised audits. Researchers often test moderation by including interaction terms between audit committee independence measures and auditor independence measures (e.g., tenure or partner rotation) to determine whether independence strengthens or weakens the effect on audit quality. The choice of moderating variables thus reflects both the structural composition and functional engagement of the audit committee (Kent et al., 2010; Beasley et al., 2000).

Empirical Review

The relationship between auditor independence, audit committee independence, and audit quality has attracted extensive scholarly attention across developed and emerging markets, though findings remain largely inconclusive. Empirical studies have produced mixed evidence, with some documenting a positive association between independence mechanisms and audit quality, while others report weak, negative, or insignificant effects. Reviewing prior empirical evidence is therefore essential for situating the present study within the broader literature.

Auditor Independence and Audit Quality

Empirical findings on how auditor independence influences audit quality are mixed. In Nigeria, Enofe, *et al.* (2013) used twenty listed firms and found that audit quality improves when auditors are independent. They therefore recommended that auditors should maintain independence despite local limitations. Babatolu, Aigienohura and Uniamikogbo (2016) analysed deposit-money banks and reported a positive relationship between audit fee, firm rotation and audit quality, but a negative relationship between audit firm tenure and audit quality. In the healthcare sector, Amahalu, Okeke and Chinyere (2018) used correlation and Granger-causality tests and showed that audit independence, tenure and firm size are positively related to audit quality. By

contrast, Zayol and Kukeng (2017) concluded that although auditor independence is strongly related to audit quality, threats such as client importance, provision of non-audit services, and audit tenure can impair independence. International evidence is similarly inconclusive. Singer and Zhang (2018), using a natural experiment in Europe, found that longer audit tenure delays the detection of misstatements, indicating a negative effect of long tenure on audit quality. Overall, these studies suggest that auditor independence – often proxied by auditor tenure, audit fees, rotation or independence in appearance – can enhance audit quality, but the magnitude and direction of the effect depend on contextual factors such as industry, client size and regulatory environment.

Null Hypothesis (H_{01}): Auditor independence has no significant effect on audit quality.

Audit Committee Independence and Audit Quality

Research on audit committee independence shows that the composition and activities of the committee can influence audit outcomes. Khudhair, Al-Zubaidi and Raji (2019) analysed Iraqi non-financial firms and reported that audit quality improves when audit committees include a higher proportion of non-executive (independent) directors, emphasising the importance of a balanced board. In contrast, Majiyebo *et al.* (2018) studied Nigerian deposit-money banks and found that audit

committee independence has a negative post-significant effect on financial reporting quality, while committee size has no effect. A broader cross-country study by Ali and Meah (2021) found that larger corporate boards and more independent directors increase audit committee independence; they also observed that committee size, meeting frequency, number of financial experts and overall effectiveness are positively related to audit quality, though only size and overall effectiveness were statistically significant. Similarly, Asiriwa et al. (2018) demonstrated that committee size and overall effectiveness—not merely the presence of independent directors—drive improvements in audit quality. These mixed findings imply that independence alone may not guarantee better audit outcomes; the committee's size, expertise and diligence also matter.

Null Hypothesis (H₀₂): Audit committee independence has no significant effect on audit quality.

Moderating Role of Audit Committee Independence

Empirical evidence on whether audit committee independence moderates the link between auditor independence and audit quality is sparse. Most studies treat audit committee independence as a direct determinant of audit quality and seldom test interaction effects. Onwuchukwu, Erah and Izedonmi (2012), examining mandatory audit rotation in Nigeria,

found that rotation alone does not improve audit quality and suggested that other mechanisms—such as strengthening the audit committee and encouraging joint audits—may be necessary to enhance auditor independence and audit quality. This recommendation implies that independent and active audit committees could help mitigate the potential loss of auditor objectivity due to long tenure or client dependence. The limited existing evidence and the conflicting results on the direct effects of auditor independence and audit committee independence justify investigating whether audit committees play a moderating role in shaping the influence of auditor independence on audit quality, particularly in Nigeria's non-financial sector.

Null Hypothesis (H₀₃): Audit committee independence does not significantly moderate the relationship between auditor independence and audit quality.

Theoretical Review

This study first anchored on agency theory. The theory was proposed by Ross and Minick (1973) and elaborated by Jensen and Meckling (1976) which describes how shareholders (principals) delegate decision-making to managers and auditors (agents), creating conflicts of interest and information asymmetry. In the auditing context, auditors are agents who may prioritise their own interests (such as fee maximisation or client retention) over objective reporting, which underscores the importance of monitoring

mechanisms like independent audit committees to protect shareholders and ensure high-quality audits. Stewardship theory, advanced by Davis, Schoorman and Donaldson (1997), offers a contrasting view by treating managers and auditors as stewards motivated by loyalty and accountability; audit firms that adopt this mindset invest in audit quality, maintain independence and prioritise clients' needs. Mautz and Sharaf's (1961) theory of comfort emphasises that audits are ritualistic processes designed to provide "comfort" turning inherently untrustworthy financial data into reports that users can trust and highlights how auditors' attributes (such as tenure and firm size) affect their ability to offer this assurance. Finally, Freeman's (1984) stakeholder theory broadens the perspective by asserting that audit firms and committees have responsibilities to multiple constituencies such as shareholders, managers, investors, regulators, employees and communities. Audit quality and independence must satisfy these diverse expectations. Collectively, these theories justify examining how audit committee independence moderates the relationship between auditor independence and audit quality.

3. Methodology

This study adopted a longitudinal research design which is a form of correlational research that tracks the same firms over time examining how auditor independence and audit committee

independence influence audit quality. The population comprised all non-financial services companies listed on the Nigerian Exchange Group during 2012–2022. There were 110 companies across ten sectors (agriculture, oil and gas, conglomerates, natural resources, construction/real estate, industrial goods, consumer goods, healthcare, ICT and services). These sectors were selected because they play significant roles in Nigeria's economy. Ranging from providing food, raw materials, capital goods, healthcare and services and there is little prior research examining audit firm independence across these industries with audit committee independence as a moderator. The sample size consisted of 79 companies selected on the accessibility of their annual reports, and have been listed for the period of the study. Secondary data covering the study period were collected from companies' annual reports and financial statements.

Model specification

The models for this study are presented into unmoderated and moderated model. The unmoderated model is thus:

$$ACQ = f(AFI, ACI, AFE, APR, AUT, AFZ, FSZ, LEV)$$

$$ACQ_{it} = \beta_0 + \beta_1 AFI_{it} + \beta_2 ACI_{it} + \beta_3 AFE_{it} + \beta_4 APR_{it} + \beta_5 AUT_{it} + \beta_6 AFZ_{it} + \beta_7 FSZ_{it} + \beta_8 LEV_{it} + \varepsilon_{it}$$

Moderated Model:

$$ACQ_{it} = \beta_0 + \beta_1 AFI_{it} + \beta_2 ACI_{it} + \beta_3 (AFI_{it} * AFI_{it}) + \beta_4 AFE_{it} + \beta_5 APR_{it} + \beta_6 AUT_{it} + \beta_7 AFZ_{it} + \beta_8 FSZ_{it} + \beta_9 LEV_{it} + \varepsilon_{it}$$

Where:

ACQ = Accrual Quality;

AFI = Audit Firm Independence;

AFE = Audit Fees;

APR = Audit Partner Rotation;

AUT = Audit Tenure

AFZ = Audit Firm Size;

ACI = Audit Committee Independence;

FSZ = Firm Size

LEV = Firm Leverage

ε = Error term;

The unmoderated panel regression model related accrual quality to AFI, ACI, AFE, APR, AUT, AFZ, FSZ, LEV. The moderated model included interaction terms between ACI and AFI.

Variable measurement: Audit quality (ACQ) was proxied by accrual quality derived from the Modified Jones Model. Auditor independence (AFI) was measured as the ratio of audit fees to company revenue. Audit committee independence (ACI) was measured as the proportion of non-executive directors on the audit committee. Control variables are Audit fees (AFE) measured as the natural logarithm of fees paid. Audit partner rotation (APR) was coded 1 if a partner had served the company for

three or more years (0 otherwise), while audit tenure (AUT) was coded 1 if the auditor had been engaged for three or more years. Audit firm size (AFZ) equalled 1 when the firm was audited by a Big-Four auditor, Firm Size (FSZ) measured as the natural logarithm of total assets and Leverage (LEV) measured as the ratio of long-term debt to total assets.

Data analysis was conducted by first describing the nature of the data used for the study, followed by correlation analysis checked linearity among variables; and multiple regression analysis estimated both the direct and moderating effects. Diagnostic tests were conducted to ensure the robustness of the models: heteroskedasticity tests (Breusch–Pagan and Cook–Weisberg) were used to detect non-constant variance; the Jarque–Bera test assessed the normality of residuals; the Hausman test determined whether fixed- or random-effects estimation was appropriate; and robust standard errors were applied to correct for heteroskedasticity.

4. Results

The results section presents the empirical findings from the longitudinal analysis of Nigerian non-financial companies over 2012–2022. This section begins with descriptive statistics and correlation analysis to summarise the sample and highlight initial relationships among the variables. Diagnostic tests such as tests for heteroskedasticity, autocorrelation, unit

roots and cross-sectional dependence are performed to ensure that the data meet the assumptions for panel regressions. Next, the study reports and compares pooled ordinary least squares, random-effects and fixed-effects models to determine the appropriate specification; the fixed-effects model is chosen on the basis of the Hausman test. Finally, a robust fixed-effects regression incorporating the interaction between auditor independence and audit committee independence is estimated to test the study's hypotheses.

Descriptive Analysis

Descriptive statistic result is presented in Table 1 below. The results show the statistical nature of the variables based on the mean, standard deviation, minimum and maximum parameter values.

Table 1: Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
ACQ	869	-0.117	0.486	-10.246	4.435
AFI	869	0.949	8.039	-0.308	185.185
AFE	869	3.726	1.489	-1.572	7.878
APR	869	0.236	0.425	0	1
AUT	869	0.69	0.463	0	1
BIG4	869	0.509	0.5	0	1
ACI	869	57.160	21.694	33.33	100
FSZ	869	16.31	1.976	10.976	21.685
LEV	869	70.228	96.639	3.555	2353.907

Source: Authors' Computation, 2025

The descriptive result shows that accrual quality (ACQ), the dependent variable, has a mean of -0.117 and a standard deviation (SD) of 0.486, indicating moderate variation and slightly negative average accrual quality among the 869

firm-year observations. Audit-firm independence (AFI), measured as the ratio of audit fee to revenue, has a mean of 0.949 but a large SD of 8.039, reflecting a wide range of fee-dependence across companies. The natural logarithm of audit fees (AFE) averages 3.726 with an SD of 1.489, suggesting moderate variation. For the dummy variables, audit partner rotation (APR) has a mean of 0.236—implying roughly 24 % of the observations have rotated partners—while audit tenure (AUT) averages 0.690, indicating that about 69 % of firms have long audit tenure; both variables exhibit binary-variable SDs. Big4 audit firm size (AFZ) has a mean of 0.509, meaning just over half of the firms engage a Big 4 auditor. Audit committee independence (ACI) averages 57.160 % with an SD of 21.694, indicating moderately high independence with modest variation. Firm size (FSZ, log of total assets) averages 16.31 (SD = 1.976) and leverage (LEV) averages 70.228 % but with a large SD (96.639), showing substantial differences in gearing across firms. The accompanying descriptive narrative notes that some companies have highly negative accrual quality (min = -10.246) while others attain high positive accrual quality (max = 4.435).

Correlation Analysis

Correlation analysis plays a crucial role in this study as it enables the detection of relationship between the dependent variables (audit quality)

and independent variables (audit firm attributes). Establishing a significant positive or negative correlation between audit quality and audit firm attributes is essential, as it provides a foundation for further investigation. In essence the presence of a correlation justifies the research endeavour, whereas its absence would render the study less worthy of exploration.

Table 2: Matrix of Correlations

Variables	ACQ	AFI	AFE	APR	AUT	ACI	AFZ	FSZ	LEV
ACQ	1.000								
AFI	-0.569	1.000							
AFE	0.055	-0.135	1.000						
APR	0.032	-0.025	0.071	1.000					
AUT	0.008	0.017	0.007	-0.146	1.000				
ACI	-0.051	0.081	-0.038	0.007	0.027	1.000			
AFZ	0.029	-0.084	0.548	0.010	0.023	0.005	1.000		
FSZ	0.044	-0.093	0.822	0.090	0.002	0.124	0.411	1.000	
LEV	-0.765	0.688	-0.139	-0.014	-0.033	0.109	-0.075	-0.108	1.000

Source: *Author's Computation, 2025*

The correlation matrix (Table 2) reveals that ACQ correlates moderately and negatively with AFI (−0.569), suggesting that greater fee dependence is associated with lower accrual quality. ACQ has a weak positive correlation with AFE (0.055) and very weak positive correlations with APR (0.032) and AUT (0.008). The correlation between ACQ and ACI is weakly negative (−0.051). ACQ is weakly positively correlated with firm size (FSZ = 0.044) and weakly negatively correlated with leverage (LEV = −0.765). Correlations among independent variables are generally low; for example, AFI correlates weakly negatively with audit fees (−0.135) and weakly with other

attributes, alleviating multicollinearity concerns.

Regression Results

In panel data analysis, pooled regression is the first estimation to determine the relationship between dependent and independent variables provided in the panel. Followed by post estimation test such as panel heteroskedasticity, variance inflation factor (VIF), auto/serial correlation, cross-sectional dependence, among others. Therefore, the study first conducted pooled regression followed by panel data regression (fixed and random effect). Hausman's test is conducted to determine the policy implication of the model. At the end of the Hausman test, fixed effect is predicted to be the most efficient and further test is conducted for heteroskedasticity to confirm if the selected model can be adopted for analysis.

Regression results presented table 3 shows the fixed and random-effect models were estimated to reveal the direct relationship between audit quality and audit firms' attributes.

Table 3: Pooled, Random and Fixed Regression Models

Variables	Pooled Regressi on	RE	FE
AFI	0.011 (0.034)**	0.070 (0.026)* *	0.090 (0.225)
AFE	-0.019 (0.181)	-0.025 (0.105)	-0.050 (0.008)* **
APR	0.024 (0.340)	0.018 (0.475)	0.001 (0.968)
AUT	-0.012 (0.613)	-0.016 (0.496)	-0.026 (0.166)
ACI	0.001 (0.272)	0.081 (0.154)	0.081 (0.202)
AFZ	-0.020 (0.943)	-0.013 (0.989)	-0.021 (0.594)
FSZ	0.004 (0.692)	0.007 (0.506)	0.014 (0.652)
LEV	-0.003 (0.000)** *	-0.004 (0.000)* **	-0.047 (0.000)* **
Constant	0.002 (0.992)	0.001 (0.947)	0.001 (0.791)
R ²	0.610	0.610	0.624
Prob>F	0.000	0.000	0.000
J-B>Normality test	3.604 (0.085)		
Heteroskedastici ty	68.76 (0.000)	29473.21 (0.000)	
VIF>Mean		1.97	
Hausman		76.27 (0.000)	
Auto-correlation		0.273 (0.603)	
Unit-Root>p		(0.000)	
Cross_Depende nce		-0.513 (0.608)	

Note: figures in parentheses are p-values, ***
 $p < .01$,

** $p < .05$, * $p < .1$

Source: Authors' Computation, 2025

The analysis and the interpretation first begin with the Post-estimation tests (heteroskedasticity, Hausman, autocorrelation and unit-root tests). Table 3 compares pooled, random-effect and fixed-effect regressions.

The diagnostic tests indicate that the residuals are normally distributed (Jarque–Bera = 3.604,

$p = 0.085$), while the Breusch–Pagan/Cook–Weisberg tests ($\chi^2 = 68.76$ and 29473.21 , $p < 0.001$) reveal strong evidence of heteroskedasticity, necessitating the use of robust standard errors. Multicollinearity is not a concern, as the mean VIF of 1.97 is well below the conventional thresholds. The Hausman test ($\chi^2 = 76.27$, $p = 0.000$) rejects the random-effects estimator, indicating that the fixed-effects model is more appropriate. The Wooldridge test (statistic = 0.273, $p = 0.603$) shows no serial correlation, while the Pesaran–Shin unit root test ($p = 0.000$) confirms the stationarity of the panel series. In addition, cross-sectional dependence is absent (statistic = -0.513 , $p = 0.608$). Overall, these results validate the application of the fixed-effects model with heteroskedasticity-robust standard errors for the regression analysis.

The pooled, random and fixed-effect models are all statistically significant and valid. In both the pooled OLS and random effect models, the variation in accrual quality ($R^2 = 0.610$) indicating 61% overall variation is jointly explained by chosen auditor attributes. The model is valid with significant (Prob > F = 0.000). In fixed-effect model, auditor attributes explain about 62 % of the variation in accrual quality ($R^2 = 0.624$) and is jointly significant (Prob > F = 0.000). In the pooled and random-effect models, AFI has a positive and statistically significant coefficient (0.070; $p = 0.026$); however, the Hausman test indicates

that the fixed-effect model is appropriate. In the fixed-effect model, AFI’s coefficient (0.090) is not statistically significant ($p = 0.225$), implying that, after controlling for companies and audit firm-specific effects, auditor independence does not have a direct effect on audit quality. Audit fees (AFE) have a negative and significant coefficient in the fixed-effect model (-0.050 ; $p = 0.008$), suggesting that higher fees relative to revenue are associated with lower accrual quality. Neither audit partner rotation (APR) nor audit tenure (AUT) shows a significant effect on audit quality; both coefficients are small and insignificant. Audit committee independence (ACI) is positive but not significant in any model. Leverage consistently has a significant negative coefficient, indicating that higher leverage reduces accrual quality.

Moderated results analysis is presented in table 4 below.

Table 4: Robust Fixed Effect Regression Result

ACQ	Model 1	Model 2	Model 3
AFI	-0.002 (0.441)	-0.002 (0.441)	0.090 (0.255)
ACI		0.001 (207)	0.081 (0.202)
AFI*ACI			0.180 (0.005)
AFE	-0.057 (0.039)	-0.047 (0.086)	-0.05 (0.005)
APR	0.001 (0.971)	0.002 (0.939)	0.001 (0.976)
AUT	-0.024 (0.250)	-0.024 (0.228)	-0.026 (0.166)
AFZ	-0.011 (0.800)	0.010 (0.813)	-0.021 (0.594)
FSZ	0.025 (0.312)	0.010 (0.708)	0.014 (0.652)
LEV	-0.004 (0.000)	-0.004 (0.000)	-0.047 (0.000)
Constant	-0.003 (0.000)	-0.054 (0.180)	0.001 (0.791)
R-Squared	0.608	0.610	0.624
Prob>F	0.000	0.000	0.000

Source: *Authors’ Computation, 2025*

To test the moderating effect of audit committee independence, the study estimated a robust fixed-effect model incorporating an interaction term (AFI*ACI) (Model 3 in Table 4). The interaction term is positive (0.180) and statistically significant ($p = 0.005$), indicating that audit committee independence strengthens the relationship between auditor independence and audit quality. Specifically, when audit committees are more independent, increases in auditor independence leads to notable improvements in accrual quality. AFI on its own remains insignificant (0.090; $p = 0.255$), and ACI alone also remains insignificant (0.081; $p = 0.202$), reinforcing the view that audit committee independence chiefly operates as a moderator rather than a direct determinant. The

interaction model has the highest explanatory power ($R^2 = 0.624$) and remains statistically significant overall.

Tests of Hypotheses

The first null hypothesis (H_{01}) states that auditor independence has no significant effect on audit quality is not rejected, because the fixed-effect coefficient for AFI is not statistically significant.

The second null hypothesis (H_{02}) states that audit committee independence has no significant effect on audit quality—is also not rejected, as ACI is insignificant in all models.

The third null hypothesis (H_{03}) states that audit committee independence does not significantly moderate the relationship between auditor independence and audit quality—is rejected, because the interaction term (AFI*ACI) is positive and significant ($p = 0.005$), demonstrating that audit committee independence enhances the impact of auditor independence on audit quality

5. Discussion of Results

The findings of this study provide important insights into the relationship between auditor independence, audit committee independence, and audit quality in Nigerian non-financial firms. First, auditor independence, proxied by the ratio of audit fees to client revenue, was not statistically significant in the fixed-effects

regression model. This indicates that independence in itself does not directly translate into improved audit quality. The result echoes earlier Nigerian evidence by Ilaboya and Ohiokha (2014) and Bassey, *et al.* (2020), who noted that economic dependence on clients often weakens the practical effect of independence, even when it exists in form. However, it contrasts with studies such as Enofe, *et al.* (2013) and Kabuw and Abdullahi (2012), which found a positive association between auditor independence and audit quality. The divergence underscores the inconclusive nature of prior research and supports the argument, consistent with agency theory, that economic bonding between auditor and client may compromise objectivity and limit the effectiveness of independence.

Similarly, audit committee independence, measured by the proportion of non-executive directors, did not show a significant direct effect on audit quality. This finding is in line with Majiyebo, *et al.* (2018), who reported that independence on audit committees could even undermine reporting quality in Nigerian companies, possibly due to weak expertise or limited enforcement power. Yet, it stands in contrast with studies such as Soliman and Ragab (2014) and Asiriwa, *et al.* (2018), which documented a positive association between committee independence and monitoring effectiveness. The insignificance observed here suggests that, within the Nigerian regulatory

environment, independence alone may be insufficient without the necessary expertise, diligence, and institutional support. This interpretation resonates with stewardship theory's caution that oversight must be both independent and competent to produce substantive improvements in audit outcomes.

The most compelling evidence from the study is that audit committee independence significantly moderates the relationship between auditor independence and audit quality. The positive and significant interaction term (AFI*ACI) implies that when audit committees are truly independent, they reinforce auditors' ability to resist client pressure and translate formal independence into substantive improvements in audit quality. This finding is consistent with studies such as Cohen, *et al.* (2011) and Khudhair, *et al.* (2019), which emphasise that independent committees play a crucial monitoring role, reducing information asymmetry and managerial opportunism. The result also aligns with agency and stakeholder theories, which stress that oversight mechanisms not only safeguard shareholders but also build broader stakeholder trust in financial reporting. In the Nigerian context, this suggests that while independence of auditors or committees alone may be insufficient, their combination creates a governance structure strong enough to enhance audit quality in practice.

6. Policy Implications

The findings of this study carries several policy implications for Nigerian regulators such as the Securities and Exchange Commission (SEC), the Financial Reporting Council of Nigeria (FRCN), and the Nigerian Exchange Group (NGX). Since neither auditor independence nor audit committee independence on their own guarantee higher audit quality, regulatory emphasis should move beyond mere structural compliance to ensuring functional effectiveness. This could involve strengthening the enforcement of auditor independence rules, especially on audit fee dependence and tenure, and providing clearer guidelines for rotation at both partner and firm levels. For audit committees, regulators should not only require independence by composition but also insist on financial expertise, regular training, and active engagement with external auditors. The significant moderating effect of audit committee independence suggests that regulators and boards should prioritise the empowerment of audit committees to hold auditors accountable, thereby ensuring that formal independence translates into substantive improvements in audit quality. This integrated approach will better align Nigerian corporate governance practices with international standards while addressing local institutional challenges.

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