

INTERNAL CONTROL INDICATORS AND AUDIT REPORT QUALITY IN THE FIRMS OF NIGERIA

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Abstract: Despite technological advancement and regulatory oversight, auditors often struggle to provide reliable reports. This is a critical issue affecting investors, businesses, and economies worldwide. This study investigates the effects of internal control indicators and audit report quality on listed Nigerian manufacturing firms. This study investigated the effects of internal control indicators, particularly the control environment (risk committee, board independence, and audit committee composition) and control activities (audit committee meeting, auditor type, and audit committee expertise), on audit report quality in listed Nigerian manufacturing firms. This study used an ex post facto research design. A sample size of 50 firms was selected from 67 total populations as of December 31, 2023, using simple random sampling techniques. The data were collected from the annual reports of listed manufacturing firms in the Nigerian Exchange Group (NGX), from, 2014 to 2023. The study found that internal control indicators, such as Audit Committee Meetings (ACM) and Board Independence (BI), have positive but insignificant effects on Audit Report Quality (ARQ), while others, such as Audit Committee Composition/Effectiveness (ACC), have negative and insignificant effects on ARQ. The insignificance of Auditor Type (AT) challenges the common perception that the Big four auditors are inherently linked to higher audit quality. This study delves into the specific roles of the control environment and activities, challenging conventional wisdom about the big four auditors. Revealing the significant collective effects of these indicators opens doors for future research to explore regional variations and industry-specific nuances.

JEL Classification: M42, M48

Keywords: Risk committee, Board independence, Audit committee composition, Audit committee meeting, Auditor type, Audit committee expertise

1. Introduction

Financial data dependability is the cornerstone of investor confidence and wise financial decision-making (Xiao & Shailer, 2022). An important part of this ecosystem is audit reports, which are impartial evaluations of an organization's financial statements. But the caliber of these reports is now a global issue. In recent years, strong audit procedures have become more crucial due to a number of well-publicized accounting scandals and financial crises (Aljaaidi et al., 2021; Drouin-Rousseau et al., 2023). Subpar audits have had far-reaching effects on economies, investors, and the general public, as evidenced by the demise of Enron and WorldCom and the subprime mortgage crisis. The challenges faced by jurisdictions around the world are similar. The potential for inadequate and weak auditor independence is one of the main concerns (Logie & Maroun, 2021). Second, it may be difficult for stakeholders to get a clear picture of the company's financial situation if there are no standard audit procedures in place. This is because different auditors may interpret accounting rules differently and apply different levels of scrutiny (Bassegy-John, 2022). Lastly, the risk of fraudulent financial reporting and other irregularities is increased by corporate governance practices (Annan-Bonny, 2022). These problems may hinder business growth and have a chilling effect on investments.

Danso (2023), the caliber of audits conducted by Nigerian companies has drawn criticism. One issue is engagement, where hurried auditors due to time constraints and auditors who have too much faith in management can produce findings that are erroneous and incomplete (Ehiedu and Toria, 2022). Second, inadequate audit fees may limit the resources available for a comprehensive review (Ashfaq & Rui, 2019). Low fees might prevent auditors from investing enough time and energy in a thorough audit. Lastly, ineffective audit committees within businesses might not offer sufficient supervision, enabling management to exert pressure on auditors to evade a thorough examination of financial statements (AL-Qatamin & Salleh, 2020). There is a greater chance of overlooking crucial details and failing to identify possible misstatements in the absence of a comprehensive analysis (Akhidime, 2019; Eton et al., 2022).

Businesses are at risk due to recent anxiety regarding audit quality (Ugoani & Ibeenwo, 2022). The possibility of false financial statements arises from compromised audits. These reports help creditors and investors make informed decisions. False information can hinder economic growth and result in bad investments. Additionally, a tarnished reputation brought on by subpar audits may make it more difficult for businesses to obtain loans and possibly raise borrowing costs (Ugoani & Ibeenwo, 2022; Eniola et al., 2021). Market instability is the result of these problems. Their confidence in the market as a whole may be damaged if a sizable portion of Nigerian companies produce financial statements that are not trustworthy. Investor hesitancy could result in capital flight and impede Nigeria's overall economic growth. Rebuilding trust and creating a stable and healthy business environment depend on resolving these audit quality issues. In order to protect the interests of shareholders, internal controls are essential for preserving the accuracy and integrity of financial reporting and auditing standards.

According to Adedokun and Ogunwole's (2019) analysis of the factors influencing the efficacy of internal audits in Nigerian public tertiary institutions, internal control systems are essential to the auditing procedure.

However, a more thorough investigation is required to determine the precise relationship between these indicators and the audit report caliber in Nigeria's larger corporate sector. There is a clear lack of in-depth research on how national regulatory changes affect internal control systems, particularly in Nigerian corporate sectors, despite studies like those by Anisere-Hammed et al. (2020) offering some insight into the regulatory impact on auditing and internal control mechanisms in Ekiti State, Nigeria.

This overarching aim is to investigate the effects of internal control indicators on audit report quality in listed Nigerian manufacturing firms. The specific goals of this study are to evaluate the effect of the internal control environment of listed Nigerian manufacturing firms on audit report quality and to assess the effects of control activities on audit report quality.

2. Literature Review

This dives into a thorough examination of theories, concepts, and empirical data related to the study's topic.

2.1 Conceptual Review

2.1.1 Control Environment

According to Anita and Setiawan (2020), the leadership of an organization's overall attitude, awareness, and behavior regarding the importance of internal controls is known as the control environment (CE). This environment sets the tone for employee behavior and affects the effectiveness of the entire internal control system (COSO, 1992; Yorke, 2022). A clear structure and strong human resources policies reinforce this "invisible force" (Drouin-Rousseau et al., 2023), which promotes integrity, competence, and transparent communication that facilitates effective audits and high-quality reports, ultimately increasing stakeholder confidence and resulting in trustworthy financial reporting and organizational success. A dedicated risk committee, the audit committee's makeup, and the board's independence are essential elements of a robust control environment (Joseph et al., 2022; Nikulin et al., 2022; William et al., 1999). An efficient audit committee with financially savvy and independent members offers strict oversight (Shaheen, 2022), while an independent board promotes impartial decision-making and protects shareholder interests (Aljaaidi et al., 2021).

2.1.2 Control Activities

Control activities are defined as policies, practices, and systems that an organization uses to reduce risks, guarantee regulatory compliance, and accomplish its goals (COSO, 2013). These measures, which can be either preventive or investigative and include things like authorization requirements and segregation of duties, have a direct impact on the quality of audit reports by giving auditors confidence about the accuracy of financial records (Otley & Berry, 2019). Firm performance is positively impacted by effective internal controls, which are frequently improved by information technology (Odunko, 2022; Tetteh et al., 2022). Additionally, thorough audit committee meetings make it easier to assess control systems and quickly address vulnerabilities (Ashfaq & Rui, 2019). A comprehensive audit approach provides a comprehensive evaluation of control effectiveness by integrating financial and operational audits (Danso, 2023; Jung & Cho, 2022). Organizational success and resilience in a changing business environment depend on the prioritization of strong control activities, which are bolstered by a proactive audit committee and a strong audit function (Annan-Bonny, 2022; Arbogast, 2023). This study uses audit committee expertise, auditor type, and meeting frequency as stand-ins for control activities to better understand the impact of control activities on the quality of financial reporting.

2.2 Theoretical Review

Source: Author's Concept (2025)

2.4 Empirical Review

Control of the environment and audit report quality

Akinleye and Adebola (2020) examined the performance and internal controls of selected Ekiti tertiary institutions. A survey of universities in Nigeria found that, enhanced institutional performance is strongly correlated with properly implemented internal controls. This study concentrated on the COSO framework, determining that the most crucial elements were information and communication, monitoring, and control activities. To enhance performance in postsecondary institutions, this study suggests giving priority to these important internal control elements be prioritized. The function of an independent audit committee in the connection between audit fees and the Risk Management Committee (RMC) was examined by Larasati et al. (2019). 510 observations from 216 companies listed on the Indonesia Stock Exchange between 2014 and 2016 were used in this study. To support the hypotheses, we used ordinary least squares (OLS) analysis. According to this study, the relationship between the risk management committee and audit fees is strengthened when the independent commissioner serves as a member of the audit committee. On the basis of the above results, we hypothesize the following:

H₁: The control environment has no significant effect on the audit report quality.

Control Activities and Audit Report Quality

Lisic et al. (2019) investigated how audit committee accounting knowledge encourages auditors to conduct thorough internal control audits and make pertinent internal control assessments, thus enhancing audit quality. The research design used in this study was quantitative. To test the hypotheses, the study employed statistical analysis methods such as logistic regression and regression analysis. This study found that the probability of negative internal control audit opinions was positively correlated with the audit committee's accounting expertise. Ogwiji and Lasisi (2022) used a clever PLS-SEM approach to analyze the fraud prevention and internal control systems of Nigerian financial services firms. This study used structured questionnaires to collect primary data, a survey to analyze 284 employees, and SmartPLS-3 software to evaluate the model fit. The study discovered that fraud is greatly decreased by a robust control environment and first-rate monitoring systems. It's interesting to note that poor information sharing and communication raised the risk of fraud. Conflicting evidence exists regarding the effects of risk assessment and control measures. The size and credentials of an organization's internal audit team impact its internal controls, according to Yu-Tzu et al. (2019). By examining data from a regulatory body in Taiwan, they found that companies with bigger and more seasoned audit teams were less likely to have problems with everyday operations and regulatory compliance. It's interesting to note that qualifications affect compliance more than operations, that more research is necessary to determine how internal audit teams can best enhance business processes as a whole. Thus, based on the foregoing, we hypothesized that

H₂: Control activities have no significant effects on the quality of audit reports.

3. Methodology

This study adopted a positivist epistemological stance, underpinning a quantitative research approach. An ex-post facto research design was used because it allows for the examination of existing data without manipulating variables, enhancing the ecological validity of the findings. The study population comprised Nigerian

manufacturing firms listed on the Nigerian Exchange Group (NGX). A simple random sampling technique was used to select a sample size of 50 firms from a total population of 67. This method ensured that each firm had an equal probability of being included in the sample, thus enhancing the generalizability of the findings. Data were collected from annual reports of the selected firms. The study period spanned 10 years, from 2014 to 2023.

Model Specification

A linear regression model was employed to examine the relationship between audit report quality (ARQ) and its key determinants: control environment (CE) and control activities (CA). To capture the essence of CE, which reflects overall organizational control consciousness, this study employed proxies such as audit committee composition, the existence of a risk committee, and board independence. These variables provide insights into the mechanisms of corporate governance that influence the control environment. Control activities, representing specific actions safeguarding management directives, are measured using proxies, such as audit committee meetings, auditor type, and audit committee expertise. These indicators reflect the diligence and capabilities of the audit committee in overseeing control activities. This study contributes to a deeper understanding of the elements that impact audit report quality by examining these factors. The models are specified as follows:

ARQ =F (CE, CA)

Model 1:

$$ARQ = \beta_0 + \beta_1CE + \beta_2CA + \varepsilon \dots\dots\dots (i)$$

Where:

ARQ = Audit Report Quality

CE =Control Environment

CA = Control Activities

B₀ = Intercept

β₁ and β₂ are coefficients of CE and CA, respectively

ε = Error term

Model 2:

Incorporating individual components of CE and CA

$$ARQ = \beta_0 + \beta_1RC_{it} + \beta_2ACC_{it} + \beta_3BI_{it} + \beta_4ACM_{it} + \beta_5AT_{it} + \beta_6ACE_{it} + \varepsilon \dots\dots\dots(ii)$$

Where:

RC = Risk Committee

ACC = Audit Committee Composition

BI = Board Independence

ACM = Audit Committee Meeting

AT = Auditor Type

ACE =Audit Committee Expertise

it = firm ‘i’ in period ‘t’

A prior expectation

a priori expectation: β₁, β₂, β₃, β₄, β₅, β₆> 0, indicating a positive relationship between the independent and dependent variables.

Measurement of the variables

Table 1: Measurement and description of the research variables

S/N	Variables	Description	Measurement	Data Source	Literature Evidence
	Dependent Variable:				
1	Audit Report Quality (ARQ)	The overall effectiveness and reliability of the audit report.	Measured as client restatement.	Annual financial Reports.	Rowe and Sivadasan (2021); Detzen and Gold (2021); and Hichri (2023).
	Independent Variable:				
2a	Control Environment (CE)	The control environment can be defined as the overall attitude, awareness, and actions of an organization's leadership regarding the importance of internal controls.		Annual Financial Report.	Lee, (2019); and Dorcas et al. (2020)
2a(i)	Risk Committee (RC)	A risk committee is a subcommittee of a company's board of directors that is responsible for overseeing the company's risk management processes.	Measured as the number of risk committee members.	Annual Financial Report.	Alawaqleh and Almasria (2021).
2a(ii)	Board	Board	Measured as	Annual	Bakare

	Independence (BI)	Independence refers to the extent to which a company's board of directors is free from conflicts of interest and can exercise independent judgment.	the percentage of non-executive directors to total directors.	Financial Report.	(2019).
2a(iii)	Audit Committee Composition(ACC)	Effectiveness of the audit committee in overseeing financial reporting and internal controls.	Measured as the ratio of non-executive committee members to the audit committee board of directors.	Annual Financial Report.	Nikulin et al. (2022); Demeke et al. (2020)
2b	Control Activities(CA)	Control activities are the policies, procedures, and mechanisms that an organization implements to mitigate risks, ensure adherence to regulations and best practices, and ultimately achieve its objectives.		Annual Financial Report.	COSO (2013); Herawati, & Hernando, (2020).
2b(i)	Audit Committee Meeting(ACM)	An audit committee meeting is a	The number of annual	Annual Financial Report.	Hasan et al. (2020).

		formal meetings of gathering of the the audit members of a committee company's audit committee.			
2b(ii)	Auditor Type(AT)	Degree to which the auditor is free from conflicts of interest.	Measured as the nominal scale of '1' for Big4 audit firm and '0' for non Big4 audit firms.	Annual Financial Report.	El-Dyasty and Elamer (2020).
2b(iii)	Audit Committee Expertise(ACE)	The level of expertise of the audit firm in the client's industry	Measured as the ratio of audit committee members with accounting and finance expertise to total members.	Annual Financial Report.	Lisic et al. (2019)

Table 1 shows the description, measurement, data source, and literature evidence of investigated variables.

Source: Author's Compilation (2025)

4. Data Analysis and Findings Discussion

Descriptive Statistics

Table 2 presents the descriptive analysis of the variables. The analysis reveals that the mean audit report quality score is 0.206, with a median of 0, recommend that most firms do not experience restatements, indicating relatively high audit report quality. However, the data are not normally distributed. Audit committee effectiveness averaged 64.44, indicating generally effective committees, although with moderate variation across firms. Similarly, audit committee expertise averaged 44.75, showing moderate expertise levels, with this variable being approximately normally distributed. Firms held an average of 5.16 audit committee meetings annually, though this number varied, and the data are not normally distributed. Most firms (mean score of 0.828) Big Four accounting firms audit [the entities, e.g., companies, organizations], demonstrating a preference for reputable auditors .Furthermore, board independence averaged 53.5%, reflecting a considerable level of independence, although with some variation across firms, and the data is not normally distributed.

Risk committees typically consisted of approximately four members (mean of 4.414), with a normally distributed membership size. In summary, the descriptive statistics recommend that most firms exhibit relatively high audit report quality, strong control environments, and effective audit committees. However, variations exist in areas such as audit committee effectiveness, board independence, and the frequency of audit committee

meetings. The Jarque-Bera test revealed that several variables are not normally distributed, which may influence subsequent statistical analyses. This descriptive analysis provides a basis for investigating the relationship between internal control indicators and audit report quality.

Table 2: Descriptive Statistics for the study

	ARQ	ACC	ACE	ACM	AT	BI	RC
Mean	0.206000	64.44020	44.75300	5.164000	0.828000	53.50220	4.414000
Median	0.000000	65.00000	45.00000	5.000000	1.000000	55.00000	4.000000
Maximum	1.000000	100.0000	80.00000	10.00000	1.000000	90.00000	9.000000
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.404836	16.39265	15.44109	1.572912	0.377758	14.90537	1.648040
Skewness	1.453896	-0.836860	-0.084549	-0.157537	-1.738299	-0.608680	-0.032162
Kurtosis	3.113815	5.125141	3.074345	4.137765	4.021683	4.231972	2.791580
Jarque-Bera Probability	176.4211	152.4493	0.710861	29.03707	273.5535	62.49421	0.991170
	0.000000	0.000000	0.700872	0.000000	0.000000	0.000000	0.609214
Sum	103.0000	32220.10	22376.50	2582.000	414.0000	26751.10	2207.000
Sum Sq. Dev.	81.78200	134090.8	118975.1	1234.552	71.20800	110862.9	1355.302
Observations	500	500	500	500	500	500	500

This table provides statistics measures of central tendency (mean, median), dispersion (standard deviation), and distribution shape (skewness, kurtosis).

Source: Author's Computation (2025)

Test of Variables

Correlation Matrix

The correlation statistics offer insights into the relationships between key internal control indicators, such as audit committee effectiveness, expertise, meetings, and audit report quality (ARQ), among Nigerian manufacturing firms. Pearson correlation coefficients, denoted by "***", measure the strength and direction of the linear relationships between the variables; while significance levels (p-values) test the statistical significance of these correlations. A particularly strong positive correlation was observed between the frequency of audit committee meetings and audit report quality ($r = 0.444$, $p = 0.000$). This implies that more frequent meetings are associated with better audit outcomes, likely due to enhanced oversight and financial reporting process monitoring. Other significant positive correlations with audit report quality were found for audit committee effectiveness ($r = 0.325$, $p = 0.000$), audit committee expertise ($r = 0.349$, $p = 0.000$), auditor type (Big Four firms) ($r = 0.180$, $p = 0.000$), board independence ($r = 0.399$, $p = 0.000$), and risk committee membership ($r = 0.398$, $p = 0.000$). Although all these factors contribute positively to audit report quality, the strength of the correlations varied. Auditor type demonstrated a significant positive relationship, yet its influence was less pronounced than that of the other internal control variables examined.

This suggests that while hiring a Big Four auditor is beneficial, it is not the sole determinant of audit quality; the effectiveness and expertise of the audit committee, along with robust risk oversight, play equally crucial roles. Furthermore, the analysis revealed strong interrelationships among the internal control variables. For example, audit committee effectiveness was highly correlated with expertise, frequency of meetings, board independence, and risk committee membership. Specifically, it showed a near-perfect correlation with board independence and a strong correlation with expertise and meeting frequency. This recommends that firms with strong governance structures tend to excel across multiple facets of internal control. Similarly, audit committee expertise was

strongly linked to board independence and risk committee membership. These findings emphasize the interconnectedness of good governance practices and highlight the importance of a holistic approach to internal control. In essence, the study underscores the crucial role of effective governance, particularly within audit committees and risk oversight functions, in ensuring the production of reliable and high-quality audit reports for Nigerian manufacturing firms. The results recommend that improvements in these areas can significantly enhance financial reporting credibility and value.

Table 3: Correlation Statistics

	ARQ	ACC	ACE	ACM	AT	BI	RC
ARQ	1						
	500						
ACC	.325**	1					
	.000						
	500	500					
ACE	.349**	.969**	1				
	.000	.000					
	500	500	500				
ACM	.444**	.718**	.699**	1			
	.000	.000	.000				
	500	500	500	500			
AT	.180**	.433**	.453**	.641**	1		
	.000	.000	.000	.000			
	500	500	500	500	500		
BI	.399**	.979**	.967**	.726**	.426**	1	
	.000	.000	.000	.000	.000		
	500	500	500	500	500	500	
RC	.398**	.745**	.753**	.951**	.623**	.776**	1
	.000	.000	.000	.000	.000	.000	
	500	500	500	500	500	500	500

The above table reveals the correlation statistics of the relationships between key internal control indicators.

Source: Author's Computation (2025)

Post-Estimation Tests

Post-estimation tests, presented in Table 5, were conducted to ensure the robustness, validity, and accuracy of the estimated regression models. These tests evaluate potential econometric issues such as heteroscedasticity, cross-sectional dependence, and the appropriate model specification (fixed or random effects). A p-value of 0.0000 (below the 0.05 significance level) in the test for heteroscedasticity led to the rejection of the null hypothesis, indicating its presence. This means that the variance of residuals differs across observations, affecting the accuracy of the model. Robust standard errors were employed to correct for this. The Pesaran CD test (statistic: 35.81277, p-value: 0.0000) revealed significant cross-sectional dependence, implying correlated

residuals across firms due to shared external factors. This was addressed using a standard error approach that accounts for cross-sectional dependence.

The Hausman test (statistic: 93.712325, p-value: 0.0000) favored the fixed-effects model over the random-effects model, that independent variables correlate with time-invariant firm characteristics. This justifies using fixed effects to control for firm-specific heterogeneity. Although the Breusch-Pagan LM test (statistic: 5543.149, p-value: 0.0000) indicated significant random effects, the fixed-effects model remains preferred due to the results of the Hausman test. This implies unobserved heterogeneity across firms, but its correlation with independent variables necessitates the fixed-effects approach. Finally, the Pesaran Scaled LM Test (statistic: 87.23978, p-value: 0.0000) further confirmed cross-sectional dependence, echoing the Pesaran CD test and reinforcing the need for correction techniques like robust standard errors.

Table 4: Summary of Post Estimation Test Results

Panel Cross-section Heteroskedasticity LR Test		
Null Hypothesis	Chi2 Statistics	Probability
Constant variance across the variable residuals (P>0.05)	20538.27	0.0000
Pesaran CD		
Null Hypothesis	Statistics	Probability
No cross-sectional dependence (P>0.05)	35.81277	0.0000
Hausman Test		
Null Hypothesis	Statistics	Probability
Difference in coefficients not systematic (P>0.05)	93.712325	0.0000
Breusch-Pagan LM		
Null Hypothesis	Statistics	Probability
Difference in coefficients not systematic (P<0.05)	5543.149	0.0000
Pesaran-scaled LM		
Null Hypothesis	Statistics	Probability
Difference in coefficients not systematic (P<0.05)	87.23978	0.0000

The table presents summary of some tests to verify the assumptions underlying the regression analysis and to check whether the model suffers from issues.

Source: Author's Computation (2025)

Multicollinearity Analysis

This study examines multicollinearity among independent variables influencing audit report quality, using Variance Inflation Factor (VIF) and tolerance values from Table 6. Severe multicollinearity was observed for several key governance indicators. Audit Committee Effectiveness (ACC) showed a tolerance of 0.027 and a VIF of 36.621, indicating a strong correlation with other variables like audit committee expertise and board independence. This overlap makes isolating ACC's individual effect on audit report quality challenging. Similarly, Audit Committee Expertise (ACE) had a tolerance of 0.047 and a VIF of 21.338, exceeding the acceptable VIF threshold of 10, highlighting its strong correlation with other governance indicators. Audit Committee Meetings (ACM) also exhibited moderate to high multicollinearity, with a tolerance of 0.076 and a

VIF of 13.243. Although less severe than ACC or ACE, this still shared variance with variables like risk committee membership and audit committee effectiveness.

In contrast, Auditor-type (AT) had the lowest VIF at 1.809 and a tolerance of 0.553, indicating minimal multicollinearity and making it a reliable independent predictor of audit report quality. Board Independence (BI) showed extremely high multicollinearity, similar to ACC, with a tolerance of 0.030 and a VIF of 33.663, recommend redundancy with other variables. Risk Committee Membership (RC) had a tolerance of 0.065 and a VIF of 15.439, indicating significant multicollinearity, although less severe than ACC or BI. The high VIF values for ACC, ACE, and BI recommend that these variables capture overlapping aspects of corporate governance, obscuring the unique contribution. For example, disentangling the impact of audit committee effectiveness is difficult because of its strong correlation with audit committee expertise and board independence. The article recommends combining highly correlated variables, such as audit committee effectiveness and expertise, into a composite variable to mitigate multicollinearity. This strategy aims to reduce multicollinearity and improve the reliability of the regression model's estimates.

Table 5: Variance Inflation Factor Test of Variables

Variable	Tolerance	VIF
ACC	.027	36.621
ACE	.047	21.338
ACM	.076	13.243
AT	.553	1.809
BI	.030	33.663
RC	.065	15.439

The Variance Inflation Factor (VIF) test results presented in Table 6 reveal the degree of multicollinearity among the independent variables used in the study.

Source: Author's computation (2025)

Regression Analysis

Regression analysis examines the relationship between audit report quality (ARQ) and its key determinants, which are grouped into two main internal control indicators: the control environment and control activities. These determinants are measurable variables. The (CE) was measured by the Risk Committee (RC), Board Independence (BI), and Audit Committee Composition/Effectiveness (ACC). The negative coefficient of -0.016177 recommend that audit report quality decreases as the number of risky committee members increases, although the effect is not statistically significant (p-value = 0.2818). This result implies that simply increasing the number of risk committee members may not necessarily improve audit report quality. The significance of the risk committee likely depends more on its effectiveness, expertise, or decision-making processes than on, its size alone. Board independence is positively associated with audit report quality, as indicated by the coefficient of 0.012722. This finding recommends that a higher proportion of independent directors on the board improve the quality of audit reports.

However, the result is not statistically significant (p-value = 0.1216), implying that the effect is not strong enough in this case to be conclusive, although board independence may enhance audit quality. This indicates that independence alone does not guarantee a board's effectiveness in influencing audit outcomes. Audit

committee composition or effectiveness (ACC) was combined with audit committee expertise (ACE) in this regression model. The negative coefficient of -0.006520 recommended that higher, audit committee effectiveness and expertise slightly reduce audit report quality. Although the result is marginally significant (p-value = 0.0847), this counter intuitive finding could indicate potential issues, such as an over-reliance on formal expertise without ensuring actual oversight or, conflicts within the audit committee that detract from its effectiveness. This recommends that effectiveness may involve more than just a strong composition; the quality of interactions and decision-making processes within the audit committee are likely to be critical.

Control Activities (CA) measured by Audit Committee Meetings (ACM), Auditor Type (AT), (ACE). The positive coefficient of 0.029054 recommends that more frequent audit committee meetings are associated with improved audit report quality. However, this relationship was not statistically significant (p-value = 0.1764). This implies that while meetings are important for overseeing internal controls and financial reporting, their frequency alone may not be sufficient to improve audit report quality. The effectiveness of these meetings in addressing audit issues may depend on their content, focus, and outcomes rather than their number. Auditor type, measured as a nominal variable indicating whether the firm is audited by a Big4 or non-Big4 audit firm, has a very small negative coefficient of -0.003155.

This recommends that hiring a Big4 auditor does not significantly improve audit report quality, with a p-value of 0.8865, indicating that this relationship is not statistically significant. This result challenges the common assumption that Big4 auditors provide better audit quality and that other factor, such as auditor independence or industry expertise, may play a more critical role in determining audit quality. As previously mentioned, the combination of audit committee expertise and composition/effectiveness yielded a negative coefficient, which is unexpected. The p-value of 0.0847 recommends marginal significance, and while audit committee members' expertise is typically considered important for ensuring effective oversight, this result may indicate that expertise alone is not sufficient. The expertise of committee members may not translate directly into better audit outcomes if other constraints, such as poor governance structures or ineffective communication, exist.

The model explains 90.36% of the variation in audit report quality, recommending that internal control indicators (control environment and activities) are strong predictors of audit report quality in listed Nigerian manufacturing firms. This high R-squared value indicates that the selected variables collectively have a significant impact on audit report quality. The adjusted R-squared value of 0.890394 indicated that the model remained robust even after adjusting for the number of independent variables. This shows that the included variables make meaningful contributions to the explanation of variance in audit report quality. The F-statistic and its p-value indicated that the overall model was statistically significant. Collectively, this means that the, independent variables (internal control indicators) have a significant impact on audit report quality. Although individual variables may not all show statistical significance collectively, the combined effect of the control environment and control activities is highly significant in predicting audit report quality.

In summary, the regression analysis highlights the complex relationships between audit report quality and its determinant internal control indicators related to both the control environment and control activities. Board independence and audit committee composition have positive relationships with audit report quality, although their effects are not statistically significant. The size of the risk committee appears to have no significant impact on audit report quality, and an unexpected negative relationship is observed with audit composition

and/effectiveness. The frequency of audit committee meetings is positively, although not significantly, associated with audit report quality, although not significantly. Auditor type (Big4 vs. non-Big4) does not appear to play a significant role in improving audit report quality. The combined measure of audit committee effectiveness and expertise shows a negative, albeit marginally significant, effect on audit quality, indicating that expertise alone is insufficient without proper governance processes in place.

The overall results propose that while internal control mechanisms are crucial, their effectiveness depends on more than just the presence of structures such as independent boards or audit committees. The dynamics within these committees and, the quality of their governance and decision-making processes, appear to be key factors in enhancing audit report quality in Nigerian manufacturing firms.

Table 6: panel-corrects *Standard Error Regression Results*

<i>Variable</i>	The fixed effect model
<i>C</i>	0.153234 (0.055723) {0.0062}
<i>ACC and ACE</i>	-0.006520 (0.003772) {0.0847}
<i>ACM</i>	0.029054 (0.021450) {0.1764}
<i>AT</i>	-0.003155 (0.022082) {0.8865}
<i>BI</i>	0.012722 (0.008201) {0.1216}
<i>RC</i>	-0.016177 (0.015010) { 0.2818}
R²	0.903576
Adjusted R²	0.890394
F-statistic	68.54597
Prob(F-stat)	0.000000

Table 7 shows the panel-corrected standard error (PCSE) regression results.

Source: Author's computation (2025) * sig @ 5%, *() standard error { } p-values

5. Discussion of the Findings

This study examined the relationship between audit report quality (ARQ) and internal control indicators, specifically the control environment and activities, using a regression model. The empirical results provide

significant insights into how these variables influence the ARQ, which agrees with previous research. The regression results revealed a negative but statistically insignificant relationship between RC and ARQ scores. This is consistent with Bakare (2019), found, that board independence and governance committees could sometimes negatively impact audit quality. The study recommends that while a risk committee is integral to a company's control environment, the size or presence of the committee alone may not guarantee higher audit quality. The effectiveness of a risk committee may depend more on how it functions than on its mere existence, aligning with Larasati et al. (2019), who noted that the participation of an independent audit committee strengthens the relationship between risk management and audit outcomes.

Although statistically insignificant, the positive relationship between board independence and ARQ supports the argument that having independent directors on the board can improve audit report quality. However, this finding contrasts with that of Bakare (2019) found, a negative relationship between board independence and audit quality in Nigerian firms. Differences in firms' governance structures or the sectors in which they operate might explain this discrepancy. Chen et al. (2020) also highlighted importance of quality of internal control in ensuring sound governance practices that support the role of independent directors. Surprisingly, the regression results indicate a negative and marginally significant relationship between ACC and ARQ, challenging the traditional assumption that a more effective audit committee improves audit quality.

This is somewhat consistent with Akinleye and Adebola (2019), who found that when internal controls are not fully integrated, they can fail to enhance organizational performance. This result might indicate that the effectiveness of an audit committee is contingent on more than its composition; it also requires functional autonomy, robust decision-making and effective communication. The regression results showed a positive relationship between ACM and ARQ, although this relationship was not statistically significant. This aligns with Hasan et al. (2020), who found that frequent audit committee meetings help reduce real earnings management (REM), thereby improving financial reporting quality. While the current study finds no significant impact, the positive direction of the relationship suggests that regular audit committee meetings contribute to improved oversight, even if this effect is not strong enough to be conclusive in the sample used. The relationship between auditor type and ARQ is negative and insignificant. This finding contradicts the prevailing assumption that Big Four auditors are associated with higher audit quality, as reported in studies such as El-Dyasty and Elamer (2020).

However, the result aligns with Larasati et al. (2019) and Hasan et al. (2020), who found that while Big 4 auditors can enhance audit committee effectiveness, they do not necessarily provide, higher audit quality than non-Big 4 auditors. This recommends that auditor type may not be the sole determinant of audit quality, and firms may need to consider additional factors such as auditor independence, industry expertise, and the audit committee quality. The combined variable of audit committee expertise and composition/effectiveness (ACC) yielded a negative relationship with ARQ, which was both counterintuitive and statistically marginal. This contradicts Lisic et al. (2019), who found that audit committee accounting expertise positively impacts audit quality. The findings of the current study indicate that, while expertise is important, it does not automatically translate into better audit report quality. This could be due to other mitigating factors such as poor governance, ineffective communication, or conflicts within the committee, as suggested by Yuanhui et al. (2020) in their discussion of how firms with poor internal controls struggle to maintain high quality of financial reporting.

The overall regression model explains 90.36% of the audit report quality variation, as indicated by the R-squared value. This finding recommends that internal control indicators, both control environment and control activities are, critical determinants of audit report quality. The F-statistic of 68.54597 and highly significant p-value (0.000000) also indicate that the independent variables have, a significant impact on audit report quality when considered together. This confirms that when well-implemented, internal control systems play an essential role in enhancing the quality of audit reports, which is in line with the findings of Mungai (2022) and Salawu et al. (2024). The findings of reveal a complex relationship between internal control indicators and audit report quality. While certain control environment variables, such as board independence, show a positive (though insignificant) relationship with the ARQ, other elements, such as the risk committee and audit committee effectiveness, appear to have negative or marginally significant effects.

For control activities, frequent audit committee meetings positively influence audit quality, but auditor type and audit committee expertise show weaker and unexpected relationships. These results emphasize that although internal controls are essential for improving audit quality, their effectiveness depends on a variety of factors, including governance structures, autonomy, and the practical implementation of oversight mechanisms. The study also highlights the need for organizations to focus not only on the presence of internal control structures but, also on their proper functioning and alignment with organizational goals, as echoed in several previous studies.

Conclusions and Recommendations

This study provides a comprehensive examination of the relationship between audit report quality (ARQ) and key internal control indicators, including the control environment and activities. The findings underscore the complexity of this relationship, revealing that while certain internal control mechanisms, such as Audit Committee Meetings (ACM) and Board Independence (BI), have positive but insignificant effect on ARQ, others, like Audit Committee Composition/Effectiveness (ACC), have negative and insignificant effects on audit report quality. The insignificance of Auditor Type (AT) challenges the common perception that Big Four auditors are inherently linked to higher audit quality. Overall, these results highlight the critical role of effective governance structures and internal control systems in ensuring high-quality audit reporting. However, the effectiveness of these mechanisms is contingent on their operational autonomy and competence, rather than their mere existence.

This study contributes to the existing literature by offering empirical insights into the nuanced relationship between internal control indicators and ARQ, particularly within the context of an emerging economy such as Nigeria. Furthermore, it provides practical implications for policy reforms aimed at enhancing corporate governance practices and improving audit quality. Based on the findings of this study, the following recommendations are proposed:

Regulatory authorities should mandate stringent guidelines on audit committee composition and independence. The findings recommend that mere compliance with audit committee regulations is insufficient; there is a need for these committees to operate with greater autonomy and expertise. Training programs for audit committee members should be introduced to ensure that they possess necessary skills to contribute meaningfully to audit quality.

The role of the Risk Committee (RC) in improving the ARQ needs to be reinforced. Policies should ensure that these committees are actively involved in risk management and financial oversight. This can be achieved through regular risk assessments and detailed risk management activities reporting. Furthermore, the responsibilities of the risk committee should be integrated into the overall corporate governance frameworks. The finding that Auditor Type (AT) does not significantly impact ARQ recommends the need to reassess the role of external auditors in governance. Firms should prioritize auditor independence, competence, and accountability rather than focusing solely on engaging big Four audit firms. Regulatory bodies could introduce audit quality reviews and performance-based assessments to ensure that auditors are held accountable for the quality of their audits, regardless of firm size or reputation.

This study underscores the importance of frequent and effective Audit Committee Meetings (ACM) for enhancing ARQ. Corporate governance guidelines should mandate a minimum number of meetings per year and ensure that these meetings focus on critical oversight activities. Audit committees should be provided with the resources and authority to effectively execute their responsibilities. The positive, although statistically insignificant, relationship between Board Independence (BI) and ARQ recommends that further improvements in Board Independence could enhance audit quality. Regulatory bodies should encourage firms to appoint non-executive directors with relevant industry expertise. Additionally, independent directors should be provided with the necessary resources to effectively monitor management.

References

- Adedokun, R., & Ogunwole, C. (2019). Appraisal of determinants of the effectiveness of internal audit of public tertiary institutions in Nigeria -respondent's perspectives. *Global Scientific Journal*. ISSN 2320-9186 .www.globalscientificjournal.com
- Akhidime, A. E. (2019). Drivers of audit failure and fraudulent financial reporting: Evidence from Nigerian distressed banks. *Management and Accounting Review (MAR)*, 18(1), 1-24. <https://mar.uitm.edu.my/>.
- Akinleye, G. T., & Kolawole, A. D. (2020). Internal controls and performance of selected tertiary institutions in Ekiti state: A committee of sponsoring organizations (coso) framework approach. *International Journal of Financial Research*, 11(1), 405-416. ISSN 1923-4023 E-ISSN 1923-4031. <http://ijfr.sciedupress.com>.
- Alawaqleh, Q. A., & Almasria, N. A. (2021). Impact of audit committee performance and composition on financial reporting quality in Jordan. *International Journal of Financial Research*, 12(3), 55-69. <https://doi.org/10.5430/ijfr.v12n3p55>.
- Aljaaidi, K., Sharma, R., & Bagais, O. (2021). Effect of board characteristics on the audit committee meeting frequency. *Scientific and Professional Journals*, 7(4), 899-906. Available from: <http://doi:10.5267/j.ac.2021.1.018>.
- AL-Qatamin, K. I., & Salleh, Z. (2020). Audit quality: a literature overview and research synthesis. *IOSR Journal of Business and Management (IOSR-JBM)*, 22(2), 56-66. <https://doi.org/10.1016/j.bar.2021.101002>.

Ademoye Kehinde Tosin, Olusola Esther Igbekoyi, Adeyemo Foluke Helen, Owwoeye Taiwo Omolade, Omodara Olasehinde Vincent, and Ajewole Alaba Sunday (2025)

- Anisere-Hammed, R. A., Edewusi, D. G., & Abiodun, O. S. (2020). Auditing and Internal Control Mechanisms: An Accountability Instrument in Ekiti State, Nigeria. *African Journal of Accounting and Financial Research*, 4(1), 1-13. www.abjournals.org
- Anita, F. D., & Setiawan, D. (2020). The effect of the role of leadership in organizational culture and internal control effectiveness. *AFEBI Accounting Review*, 5(1), 1-15. <https://doi.org/10.47312/aar.v5i01.182>
- Annan-Bonny, D. (2022). *Impact of Internal Control on Fraud in Ghana's Cap 30 Pension Payment* (Doctoral dissertation, Walden University). <https://scholarworks.waldenu.edu/dissertations>.
- Arbogast, J. (2023). MDPI. Dynamic and adaptive control environment: Essential for long-term organizational success.
- Ashfaq, K., & Rui, Z. (2019). Effect of board and audit committee effectiveness on internal control disclosure under different regulatory environments in South Asia. *Journal of Financial Reporting and Accounting*, 17(2), 170-200. <https://doi.org/10.1108/JFRA-09-2017-0086>.
- Bakare, I. (2019). Board independence and audit quality in Nigeria. *Accounting and taxation review*, 3(1), 1-12. <http://hdl.handle.net/11159/4414>.
- Bassey-John, U. D. (2022). Effect of audit committee characteristics on corporate finance reporting quality in Nigerian consumer's good sector. *Journal of Global Accounting*, 9(4), 328. <https://journals.unizik.edu.ng/joga/article/view/2916>.
- Chen, H., Yang, D., Zhang, J. H., & Zhou, H. (2020). Internal controls, risk management, and cash holdings. *Journal of Corporate Finance*, 64, 101695. <https://doi.org/10.1016/j.jcorpfin.2020.101695>.
- Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2013).
- COSO. (1992). Internal control—Integrated framework. Committee of Sponsoring Organizations of the Treadway Commission.
- Danso, J. K. (2023). *Effect of internal control systems on Ghanaian manufacturing firms' performance a moderating role of internal audit effectiveness* (Doctoral dissertation, University of Education, Winneba). URI: <http://41.74.91.244:8080>.
- Demeke, T., Kaur, J., & Kansal, R. (2020). Practices and effectiveness of internal auditing among Ethiopian public higher education institutions, Ethiopia. *American Journal of Industrial and Business Management*, 10(07), 1291. doi:10.4236/ajibm.2020.107086.10.4236/ajibm.2020.107086.

- Detzen, D., & Gold, A. (2021). Different shades of audit quality: A review of the academic literature. *Maandblad voor Accountancy en Bedrijfseconomie*, 95(1/2), 5-15. <https://doi.org/10.5117/mab.95.60608>.
- Dorcas, B. O., Hammond, H., & Oppong, F. (2020). Internal Control Systems Assessment of Technical Universities in Ghana. *Journal of Finance and Accounting*, 8(2), 64-72. <http://doi.org/10.11648/j.jfa.20200802>.
- Drouin-Rousseau, S., Fernet, C., Austin, S., Fabi, B., & Morin, A. J. (2023). Employee human resource management values: validation of a new concept and scale. *Frontiers in Psychology*, 14, 1049657. <https://doi.org/10.3389/fpsyg.2023.1049657>.
- Ehiedu, V. C., & Toria, G. (2022). Audit indicators and financial performance of manufacturing firms in Nigeria. *Linguistics and Culture Review*, 6(S1), 14-41. <https://doi.org/10.21744/lingcure.v6nS1.1887>.
- El-Dyasty, M. M., & Elamer, A. A. (2020). Effect of auditor type on audit quality in emerging markets: evidence from Egypt. *International Journal of Accounting & Information Management*, 29(1), 43-66. <https://doi.org/10.1108/IJAIM-04-2020-0060>.
- Eniola, A. A., Tonade, A. M., & Adeniji, O. S. (2021). Internal control structures and financial performance: evidence from listed companies in Nigeria's South-West Region. *Accounting and taxation review*, 5(2), 79-103. <http://hdl.handle.net/11159/6569>.
- Eton, M., Fabian, M., & Benard, P. O. (2022). Are internal controls important in financial accountability?(Evidence from Lira District Local Government, Uganda). *International Journal of Financial, Accounting, and Management (IJFAM)* .ISSN: 2656-3355, Vol 3, No 4, 2022, 359-372. <https://doi.org/10.35912/ijfam.v3i4.810>.
- Hasan, S., Kassim, A. A. M., & Hamid, M. A. A. (2020). Impact of audit quality, audit committee, and financial reporting quality: evidence from Malaysia. *International Journal of Economics and Financial Issues*, 10(5), 272. ISSN: 2146-4138. <http://www.econjournals.com>.
- Herawati, N., & Hernando, R. (2020). Analysis of internal control of good corporate Governance and fraud prevention (Study at the regional government of Jambi). *Sriwijaya International Journal of Dynamic Economics and Business*, 4(2), 103-118. <http://sijdeb.unsri.ac.id/index.php/SIJDEB/index>.
- Hichri, A. (2023). Integrated reporting and, audit quality: presence of environmental auditing in an international context. *European Business Review*, 35(3), 397-425. <https://doi.org/10.1108/EBR-03-2022-0044>.
- Joseph, J., Kamau, L., & Ngui, S. (2022). Control environment and organizational performance: A review of literature. *International Journal of Research in Business and Social Science*, 11(4), 1-10.

- Jung, S., & Cho, Y. (2022). Influence of accounting information systems on internal control of receivables (Study at one of the telecommunications companies in Bandung). *European Business and Management Journal*, 8(1), 17-25.
- Larasati, D. A., Ratri, M. C., Nasih, M., & Harymawan, I. (2019). The Independent audit committee, risk management committee, and audit fees are included. *Powerful Business & Management*, 6(1), 1707042. <https://doi.org/10.1080/23311975.2019.1707042>.
- Lee, G. (2019). *Internal control strategies for compliance with the Sarbanes-Oxley act of 2002* (Doctoral dissertation, Walden University).13426258. proquest.com.
- Lisic, L. L., Myers, L. A., Seidel, T. A., & Zhou, J. (2019). Does audit committee accounting expertise help to promote audit quality? Evidence from auditor reporting of internal control weaknesses. *Contemporary Accounting Research*, 36(4), 2521-2553. <https://doi.org/10.1111/1911-3846>.
- Li, Y., Li, X., Xiang, E., & Djajadikerta, H. G. (2020). Financial distress, internal control, and earnings management: Evidence from China. *Journal of Contemporary Accounting & Economics*, 16(3), 100210. <https://doi.org/10.1016/j.jcae.2020.100210>.
- Logie, J., & Maroun, W. (2021). Evaluating audit quality using the inspection process results of an independent regulator. *Australian accounting review*, 31(2), 128-149. <https://doi.org/10.1111/auar.12328>.
- Nikulin, E. D., Smirnov, M. V., Sviridov, A. A., and Bandalyuk, O. V. (2022). Composition of an audit committee and earnings management in a specific institutional environment: the case of Russia. *Corporate Governance: The International Journal of Business in Society*, 22(7), 1491-1522. <https://doi.org/10.1108/CG-01-2021-0011>
- Odunko, A. U. (2022) The impact of internal control systems on organizational effectiveness is evaluated. *LBS Journal of Management and Research*, 10(1), 1-18.
- Ogwiji, J., & Lasisi, I. O. (2022). Internal control system and fraud prevention of quoted financial services firms in Nigeria: A Smart PLS-SEM approach. *European Journal of Accounting, Auditing and Finance Research*, 10(4), 1-13.
- Otley, D., & Berry, A. J. (2019). *Management control: Theories, issues and practices*. Macmillan International Higher Education.
- Rowe, S. P., & Sivadasan, P. (2021). Higher audit quality and higher restatement rates: An examination of big four auditee restatements. *S&P Global Market Intelligence*. SSRN 3235756. <http://dx.doi.org/10.2139/ssrn.3235756>

- Shaheen, M. (2022). The role of audit committee effectiveness in enhancing financial reporting quality. *International Journal of Auditing*, 26(1), 1-15.
- Tetteh, G. O., Owusu, D., & Ampong, A. (2022). Impact of internal control systems on corporate performance among listed firms in Ghana: The moderating role of information technology. *African Journal of Economic and Management Studies*, 15(1).
- Ugoani, J., & Ibeenwo, G. I. (2022). Failures in External Audit Processes: Unethical Practices and Business Demise. *Business, Management and Economics Research*, 8(1), 1-11. <https://ssrn.com/abstract=4098623>.
- William, T., Larry, E., & Steven, M. (1999). *Auditing: An integrated approach* (8th ed.). Prentice Hall.
- Xiao, X., & Shailer, G. (2022). Stakeholders' perceptions of factors affecting sustainability reports' credibility. *The British Accounting Review*, 54(1), 10100 <https://doi.org/10.1016/j.bar.2021.101002>
- Yorke, L. (2022). The control environment: An invisible force shaping internal controls. *Journal of Financial Management*, 15(3), 45-58.