



EVALUATION OF THE NEXUS BETWEEN INTERNAL AUDIT OPERATIONS, MANAGEMENT EFFICIENCY AND ACCOUNTABILITY OF TERTIARY INSTITUTIONS IN SOUTHEAST NIGERIA

Orji Uche Okoro (Ph.D.)¹, Ngwobia Ebubechukwu Udo²,
and Okpara Roy Maduabuchi (Ph.D.)³.

¹Department of Accounting, Abia State University, Uturu, Nigeria.
Email: uche.orji@abiastateuniversity.edu.ng

²Department of Accounting, Abia State University, Uturu, Nigeria.
Email: ngwobia.ebubechukwu@abiastateuniversity.edu.ng

³Department of Economics, Abia State University, Uturu, Nigeria.
Email: okpara.roy@abiastateuniversity.edu.ng

Cite this article:

Orji, U. O., Ngwobia, E. U., Okpara, R. M. (2025), Evaluation of the Nexus Between Internal Audit Operations, Management Efficiency and Accountability of Tertiary Institutions in South East Nigeria. African Journal of Accounting and Financial Research 8(5), 29-42. DOI: 10.52589/AJAFR-M2W6UDBK

Manuscript History

Received: 20 Oct 2025

Accepted: 25 Nov 2025

Published: 3 Dec 2025

Copyright © 2025 The Author(s).

This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: *This study examined the relationship between internal audit processes, management efficiency, and accountability in public tertiary institutions across Southeast Nigeria. Guided by institutional and agency theories, it empirically assessed how internal control mechanisms, audit investigation and compliance, and asset–liability verification affect managerial and accountability outcomes within universities, polytechnics, and colleges of education. A quantitative, cross-sectional survey design was adopted, targeting internal auditors, senior management, finance officers, and accounting lecturers. Using a multi-stage sampling approach, 310 valid responses were obtained from 400 distributed questionnaires across Abia, Anambra, Ebonyi, Enugu, and Imo States. Structural equation modeling (SEM) tested the measurement and structural models, with reliability and validity indices meeting international benchmarks (Cronbach’s alpha and composite reliability > 0.70; AVE > 0.50). Model fit indices (RMSEA = 0.053, SRMR = 0.076, CFI = 0.99, TLI = 0.99) confirmed strong model adequacy. Results showed that audit investigation and compliance significantly influenced both management efficiency ($\beta = 0.38, p < 0.10$) and accountability ($\beta = 0.73, p < 0.001$), while asset–liability verification affected management efficiency ($\beta = 0.39, p < 0.05$) but not accountability. Internal control exhibited non-significant relationships with both outcomes, indicating that existing systems are compliance-oriented rather than performance-driven. The study concludes that internal audit effectiveness depends on strategic integration into institutional performance frameworks. It recommends shifting toward performance-based audits, technology-driven compliance, and transparent disclosure of audit outcomes to strengthen accountability culture and enhance managerial efficiency in Nigeria’s tertiary education sector.*

KEYWORDS: Internal audit, Management efficiency, Accountability, Tertiary institutions, Audit Investigation, Internal control, Structural equation modeling, Nigeria.



INTRODUCTION

Public tertiary institutions in Nigeria continue to grapple with persistent governance challenges, including financial mismanagement, operational inefficiencies, weak internal control systems, and eroding public trust. These institutional shortcomings have sparked growing concerns among stakeholders, as they undermine the credibility and effectiveness of the country's higher education system (Nwosu, Aguwamba & Akwawa, 2022). Amid these issues, the internal audit function has gained recognition as a critical mechanism for reinforcing transparency, optimizing resource utilization, and promoting organizational accountability.

Traditionally perceived as compliance-focused, internal auditing has evolved into a dynamic governance instrument and globally, it is increasingly recognized for its potential to reduce fraud, strengthen internal controls, and improve institutional decision-making (Alqudah et al., 2023; Hazaea et al., 2024). In the Nigerian context, however, the effectiveness of internal audits is frequently compromised by structural weaknesses such as limited independence, inadequate staffing, poor enforcement of recommendations, and lack of management support (Bello, 2023; Uwaneze, 2014; Adeyemo, 2021).

Recent empirical studies have highlighted the core determinants of internal audit effectiveness (IAE). Adedokun and Ogunwole (2019) identified audit quality, auditor competence, independence, and management support as central to the audit function's success. Similarly, Lawal, Subair, and Ogungbemi (2024) demonstrated how technological capacity, remuneration, and external pressures influence the performance of audit units in tertiary institutions. In Nigeria, Shehu (2020) and Ojiya & Oga (2023) observed that while internal audits can strengthen transparency and accountability, their implementation is often hindered by managerial interference and lack of institutional will. Furthermore, studies by Bello (2023) and Filli & Opeyemi (2016) revealed that internal audit autonomy and operational capacity are key predictors of improved financial governance in tertiary institutions.

Despite the growing body of evidence, notable gaps remain. Most prior studies focus predominantly on institutions in Southwest or North-Central Nigeria, creating a geographic void in understanding how internal audits function within Southeast tertiary institutions despite distinct administrative, cultural, and political environments that may influence audit practices in the area. Also, only a few studies comprehensively investigate the interdependence of internal audit processes, management efficiency, and accountability in Nigeria's tertiary institutions, particularly within a unified model, leaving the interrelationships underexplored.

Also observed is that existing literature relies heavily on quantitative methods (e.g., OLS regression, correlation), often neglecting qualitative insights such as interviews with institutional heads or external stakeholders, and also, advanced econometric techniques (e.g., panel regressions, PLS-SEM) are rarely employed, leading to limitations in causal inference and model generalizability.

Although internal audit departments exist in most tertiary institutions across Southeast Nigeria, their influence on accountability remains limited. The roles and essential functions of internal audit operations and services are not carried out in Nigerian universities and



various organizations in recent times. As a result, the internal audit department is rendered incompetent, and the purpose of an internal control system is defeated.

Challenges such as inadequate audit follow-up, lack of independence, poor staffing, and insufficient management cooperation persist (Uwaneze, 2014; Bello, 2023; Adeyemo, 2021). Furthermore, while anecdotal evidence suggests that stronger internal controls could improve financial performance and accountability, empirical research on the mediating role of management efficiency within this nexus is scarce.

This study therefore aims to address this empirical void by examining how internal audit processes, specifically internal controls and assets and liabilities verification, interact with management capacity to influence accountability outcomes in these institutions. This research is both timely and policy-relevant. By focusing on the underexplored Southeast region, it contributes to filling a significant empirical gap in Nigerian governance literature by offering fresh evidence on how internal audit mechanisms contribute to public sector governance. The study provides context-specific insights that address both empirical and policy gaps. Through the use of a unique SEM model, the study explores the interaction between internal audit operations, management efficiency and accountability in tertiary institutions in Southeast Nigeria.

The rest of this paper is organized as follows: Section 2 reviews relevant literature and theoretical foundations, section 3 outlines the research methodology, section 4 presents findings and discussion, and section 5 concludes with implications for policy, practice, and future research.

REVIEW OF RELATED LITERATURE

The internal audit (IA) function is increasingly recognized as a vital governance mechanism in public tertiary institutions, contributing to financial integrity, management efficiency, and organizational accountability. According to the Institute of Internal Auditors (IIA, 2022), internal auditing is defined as an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It involves evaluating internal controls, risk management systems, and governance processes (Ayobami, 2024; Sholadoye, 2018). Key components include internal control reviews, compliance auditing, asset verification, and fraud detection mechanisms such as whistleblowing and forensic audits.

Internal audit processes in tertiary institutions function as mechanisms of governance, risk management, and control that support institutional accountability and managerial efficiency. Internal auditing encompasses independent evaluations of financial records, regulatory compliance, asset safeguarding, and fraud detection (Uwaneze, 2014; Adeyemo, 2021). These processes interact with institutional management by enhancing administrative control, streamlining academic service delivery, and supporting transparent revenue use (Filli & Opeyemi, 2016).

Management efficiency in tertiary institutions encompasses the optimal utilization of resources to achieve academic, administrative, and financial goals. It involves effective planning, budget implementation, monitoring, and performance evaluation. Efficient



management ensures that internal controls and audit recommendations translate into actionable governance improvements (Bello, 2023). It relates to how well institutional resources are deployed to achieve academic and administrative objectives. It is linked to sound decision-making, process improvements, and the ability to respond to audit recommendations (Babatope & Adewunmi, 2019). Adeyemo (2021) maintains that the efficiency of management lies in its institutional capability to allocate and monitor resources, execute educational programs, and maintain operational integrity

Accountability encompasses public sector entities and individuals being responsible for their decisions, stewardship of public funds, and performance, subject to external scrutiny (Francis, 1986). Alnoor (2010) categorizes accountability into process-based and performance-based, emphasizing the UNDP's pillars: Accountability, Transparency, and Integrity (Gehya, 2014). It includes financial, administrative, and political dimensions, ensuring proper resource utilization and imposing penalties for misuse (IA, 2015). Improved public sector accountability is vital for efficient service delivery, addressing concerns over resource management (Alugbuo, 2005; Okpara, 2002; Sholadeyo et al., 2018).

The obligation of public tertiary institutions to justify their use of public resources is referred to as accountability. This includes being answerable to internal and external stakeholders, including the government, donors, and the public (Sholadoye et al., 2018; Akinleye & Ogunmakin, 2023). Hamidu (2020) highlighted that accountability is not merely about reporting but also about enforcing compliance with policies and consequences for misconduct.

The agency theory by Jensen and Meckling (1976) undergirds the nexus between internal audit processes, management efficiency, and accountability. The theory posits that internal auditing reduces information asymmetry and agency costs by ensuring that managers act in the interest of stakeholders. The theory further posits that internal audits act as a mechanism to align the interests of agents (institutional managers) and principals (stakeholders/public), reducing information asymmetry and moral hazard (Ayobami, 2024; Bello et al., 2017).

Empirical review

Internal audit processes and management efficiency/performance

Nwosu et al. (2022) explored the role of internal auditors in corporate governance. They reported significant effects of internal audit on both accountability and institutional performance. Taiwo and Adegoke (2019) found a significant relationship between internal audit operations and educational performance at Ekiti State University, implying that well-structured internal audit functions contribute to improved institutional efficiency. Their findings emphasized the operational roles of internal audit units in advising management, monitoring procurement, and reviewing records as key to enhancing university performance.

On the other hand, Adedokun and Ogunwole (2019) evaluated determinants of internal audit effectiveness in a newly established tertiary institution. They identified quality of internal audit (QIA), auditor competence (CIAT), independence (IIA), and management support (MS) as significant predictors of internal audit processes, while Bello et al. (2017) showed that internal audit competence had a significant positive effect on university performance, while independence only became effective when moderated by top management support. This underscores the importance of organizational buy-in.



Akinleye and Ogunmakin (2023), focusing on Southwest Nigerian local governments, showed that professional competence and management support significantly predicted accountability. Surprisingly, audit independence had a negative coefficient, suggesting systemic barriers preventing truly independent internal audit units from functioning effectively.

Internal audit processes and accountability

Ojiya and Oga (2023), in their study at the College of Education, Oju, found that internal audits (IA) significantly improved revenue generation, accountability, transparency, and fund protection. Their work provides empirical validation that IA processes can elevate financial management in smaller institutions, often overlooked in national discourse. Similarly, Sholadoye (2018) established a significant positive relationship between internal audit functions and financial accountability in tertiary institutions in Kano State. Ordered logistic regression indicates that a 1% increase in audit quality could enhance accountability by 25%. Key enablers included audit independence, compliance reviews, and asset verification.

Bello (2023) analyzed data from 40 federal universities and found that internal audit independence was a significant predictor of organizational performance. Factors like audit committee access, autonomy, and absence of interference contributed positively to academic and financial outcomes. Conversely, Ayobami (2024), studying local governments, found no significant direct relationship between internal audit structure and corporate performance, highlighting challenges such as weak independence, inadequate training, and unimplemented audit recommendations.

Hamidu (2020), studying Bauchi State tertiary institutions, found that ineffective internal controls due to lack of independence, staffing shortages, and poor segregation of duties significantly impaired financial accountability. Chi-square tests confirmed a significant link between robust internal control and accountability.

METHODOLOGY

This study adopted a quantitative, cross-sectional survey design, suitable for capturing the perspectives of internal auditors, senior management, finance personnel and lecturers on internal audit processes, management efficiency, and accountability in public tertiary institutions. This design facilitates empirical testing of theoretical relationships while allowing the collection of standardized data from a broad, geographically diverse sample (Sholadoye, 2018; Lawal & Alabi, 2023; Adedokun & Ogunwale, 2019). It is consistent with the approaches of Adeyemo (2021), Hazaea et al. (2024), and Ojiya and Oga (2023), who emphasized objective measurement of institutional processes and performance indicators using structured instruments.

The research was conducted in tertiary institutions in Southeast Nigeria, comprising Abia, Anambra, Ebonyi, Enugu, and Imo States. These states represent a vital segment of Nigeria's educational framework, characterized by shared audit, governance, and financial oversight challenges in tertiary institutions.



Population and sampling technique

The population includes academic and administrative staff, such as internal auditors, bursary and finance officers, and lecturers of the accounting department, drawn from federal and state-owned universities, polytechnics, and colleges of education across the five states of Southeast Nigeria: Abia, Anambra, Ebonyi, Enugu, and Imo.

A multi-stage sampling technique was applied; first, purposive sampling was carried out to select institutions across all five states, ensuring representation across institution types. Second, stratified sampling was done to ensure representation across key functional areas (audit, bursary, administration, and academics), and lastly, simple random sampling was carried out within each stratum to select participants.

A total of 400 respondents were targeted, aligning with sample sufficiency recommendations by Krejcie and Morgan (1970) and providing statistical robustness beyond earlier studies (e.g., Sholadoye et al., 2018—213 respondents; Adeyemo, 2021—120 respondents).

Instrumentation

Data were gathered using a structured questionnaire designed on a 5-point Likert scale from Strongly Disagree (1) to Strongly Agree (5). The instrument was adapted from validated tools (Bello et al., 2017; Sholadoye, 2018; Lawal et al., 2024) and comprised five sections: Section A: Demographic profile (institution type, role, experience); Section B: Internal audit operations; Section C: Management efficiency; Section D: Accountability metrics (financial reporting, transparency, fraud prevention); and lastly, Section E: Relationship and moderating factors (internal control system, audit investigation, compliance, assets and liabilities verification).

DATA ANALYSIS AND DISCUSSION OF RESULTS

Out of the 400 targeted respondents for the study, 310 responses were received, which comprises all the strata of responses targeted for the study. This means that 78% of responses were received and is considered sufficient for further analysis.

Table 1: Demographic Profile of Respondents

Variable	Category	Frequency	Percent
Gender	Female	216	69.7
	Male	94	30.3
	Total	310	100
Years of Experience	0-5 Years	199	64.2
	6-10 Years	75	24.2
	Above 10 Years	36	11.6
	Total	310	100
Type of Tertiary Institution	College of Education	19	6.1
	Polytechnic	125	40.3
	University	166	53.5



	Total	310	100
Role in the Institution	Academic Staff	136	43.9
	Administrative Staff	32	10.3
	Auditor	95	30.6
	Management Staff	47	15.2
	Total	310	100

Table 1 displays the distribution of respondents by demographic variables, revealing that the study surveyed more females, 216 (69.7%), than males, 94 (30.3%). The years of experience as revealed by the study shows that the majority of them, 199 (64.2%), have spent only between 0 and 5 years, 75 (24.2%) have spent between 6 and 10 years, while those that have spent above 10 years are 36 (11.6%) in the institution. Regarding the type of institutions of the respondents, evidence shows that 166 (53.5%), representing the majority, work at the university, with 125 (40.3%) and 19 (6.1%) working at the polytechnic and colleges of education, respectively. The distribution of the respondents according to roles in various institutions shows that 136 (43.9%) are academic staff, 32 (10.3%) are administrative staff, and 95 (30.6%) are auditors, while 47 (15.2%) work in the management cadre.

Measurement model

The study utilized structural equation modeling (SEM) to analyze the nexus between internal audit operations, management efficiency, and accountability of tertiary institutions in Southeast Nigeria. This was preceded by tests of the adequacy of the construct using various standard metrics, as shown in Table 2.

Table 2: Measurement Model

Construct	Observed Variable	FL	α	CR	AVE
Audit investigation & Compliance (AIC)	AIC1 Internal audit operations contribute to management efficiency	0.73	0.90	0.90	0.54
	AIC2 Internal audit operation promote accountability	0.72			
	AIC3 Internal audit operations can be improved to enhance management efficiency & accountability	0.70			
	AIC4 Internal audit operations enhance the overall performance	0.75			
	AIC5 Audit investigations help detect and prevent fraud	0.73			
	AIC6 Improved technology for internal audits improves internal audit operations	0.72			
	AIC7 Compliance with audit recommendations improves management efficiency	0.73			
	AIC8 Audit compliance promotes accountability in my institution	0.78			



Internal Control (IC)	IC1	Internal control system review helps identify areas for improvement	0.72	0.75	0.76	0.56
	IC2	Regular review of internal control systems enhances management efficiency	0.80			
	IC3	Internal control system review promotes accountability	0.73			
Assets & liabilities (AL)	AL1	Regular verification of assets and liabilities helps ensure accuracy of financial reports	0.75	0.80	0.81	0.58
	AL2	Assets and liabilities verification enhances management efficiency in my institution	0.77			
	AL3	Assets and liabilities verification promotes accountability	0.76			
Management(ME) Efficiency	ME1	Management in my institution responds effectively to internal audit recommendations	0.77	0.77	0.78	0.59
	ME2	Management in my institution makes timely decisions	0.77			
	ME3	Management in my institution provides regular updates on institutional performance	0.76			
Accountability(AC)	AC1	My institution has a strong culture of accountability	0.75	0.77	0.79	0.56
	AC2	My institution provides regular updates on institutional performance	0.73			
	AC3	My institution has a clear code of conduct for employees	0.78			
	AC4	Management in my institution promote transparency and accountability by regularly disclosing financial information	0.74			

FL=factor loading, α =Cronbach's alpha, CR=cumulative reliability, AVE=average variance extracted

The study utilized the following metrics: factor loading, Cronbach's alpha, cumulative reliability and average variance extracted to evaluate the adequacy of the constructs. These metrics were used to measure the reliability and validity of the constructs (Adelana et al., 2024; Hair et al., 2021; Risher et al., 2019). The reliability metrics measured by Cronbach's alpha and cumulative reliability exceeded the threshold value of 0.7 for all the constructs. The Cronbach's alphas for AIC, IC, AL, ME, and AC are 0.90, 0.75, 0.80, 0.800.77 and 0.77, while their cumulative reliabilities are 0.90, 0.76, 0.81, 0.78 and 0.79, respectively. This result confirmed the reliability and robustness of the constructs. The validity of the constructs measured by factor loading and average variance extracted revealed that the factor loading assumed values above the threshold, while average variance extracted, with values of 0.54,



0.58, 0.54, and 0.51 for AIC, IC, AL, ME, and AC, exceeded the threshold of 0.50. The factor loading further revealed that the observed variables have a high explanatory power for latent variables, with each having power above 0.7. This highlights the robust links between the latent variables and the observed variables, reinforcing the validity of the model.

Furthermore, the application of the heterotrait-monotrait (HTMT) ratio of correlations to assess the discriminant validity reinforced the adequacy of the construct, as evidenced by the HTMT threshold value below the 0.85 threshold as depicted in Table 3.

Table 3: Correlation analysis

	audt_invstg_cmplnce	intl_ctrl	asts_liabltly	mgt_eff	accountability
audt_invstg_cmplnce	1.00				
intl_ctrl	0.83	1.00			
asts_liabltly	0.84	0.76	1.00		
mgt_eff	0.67	0.56	0.68	1.00	
Accountability	0.72	0.64	0.63	0.79	1.00

audt_invstg_cmplnce= Audit investigation & Compliance, intl_ctrl= Internal Control, Assets & liabilities, mgt_eff= management (ME) efficiency

Structural model

The study also evaluated how the structural model fits the empirical data using various fit indices as shown in Table 4, which is of great importance in ensuring an overhauled assessment of the model (Cheung et al., 2024; Wongsansukcharoen & Thaweepaiboonwong, 2023). According to Table 4, the Chi-square (χ^2) has a low p-value ($p < 0.01$), indicating a poor fit. However, this should not be of much concern because χ^2 often produces a significant result when the sample size is large (Kline, 2015; Hu & Bentler, 1999). Furthermore, existing studies have shown there could be significant chi-square values without compromising the quality of the model, especially when other indices meet the benchmark (Du & Liu, 2025). Therefore, while this study could not produce the non-significant chi-square as required, other key metrics did meet the required standard. For instance, the Root Mean Square Error Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) met the acceptable standard of < 0.08 , and the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) satisfied the standard of > 0.95 .

Table 4: Key Metrics of Model Fit Quality

Metric	Standard	Results
Chi-square	Low value, $P > 0.05$	$\chi^2 = 552$; $p < 0.01$
RMSEA	< 0.05 (good fit), < 0.08 (acceptable)	0.053
SRMR	< 0.08	0.076
CFI	> 0.95	0.99
TLI	> 0.95	0.99
NNFI	> 0.90	0.99
IFI	> 0.90	0.99
PNFI	> 0.5	0.85
R²(mgt_eff)	0.45	
R (accountability)	0.56	



In addition, the Non-Normed Fit Index (NNFI) and Incremental Fit Index (IFI) exceeded the threshold of 0.90, while the Parsimonious Normed Fit Index (PNFI) is greater than 0.5 standard. Further evaluation of the model was done using the model's explanatory power based on the coefficient of determination. The explanatory power rises with the coefficient of determination, with values close to 0.5 indicating moderate and above it indicating high explanatory power (Adelana et al., 2024). In addition, Hair et al. (2021) interpreted that R^2 values ≥ 0.19 , ≥ 0.33 and ≥ 0.67 implies weak, moderate and high explanatory power, respectively. To this end, R^2 values of mgt_eff (0.45) and accountability (0.56) are considered to contribute to the explanatory power of the model moderately and highly, respectively.

Thus, the indices show overwhelming evidence of the adequacy of the model and hence demonstrate that the constructed model can be used to test the hypotheses and analyze the impact of internal audit (audit investigation and compliance, internal control and assets and liability) on management efficiency and accountability of tertiary institutions in Southeast Nigeria.

Hypotheses testing

The results as shown in Table 5 and Figure 1 indicate how the three internal audit indicators (audit investigation and compliance, internal control, and assets and liability verification) affect management efficiency and accountability in tertiary institutions in Southeast Nigeria. The study shows evidence that internal control (intl_crtl) is negatively related to management efficiency ($\beta=0.09$, $P>0.05$) and positively to accountability ($\beta=0.02$, $P>0.05$) of tertiary institutions in Southeast Nigeria. The non-significance of the coefficients of internal control implies that it does not contribute to management efficiency and accountability of tertiary institutions in Southeast Nigeria and hence does not support hypothesis (H_1). This, in other words, means that changes in internal control operations in the institutions do not transform into improved managerial efficiency and accountability outcomes. This is mostly the case when internal control is merely compliance-oriented instead of performance-driven. This outcome is consistent with the results of Hamidu (2020) and Ayobami (2024).

Regarding the impact of audit investigation and compliance, the study found evidence of a significant positive impact on management efficiency ($\beta=0.38$, $P<0.1$) and a positive impact on accountability ($\beta=0.73$, $P<0.001$) of tertiary institutions in Southeast Nigeria. This provides robust evidence that the study supports the hypothesis (H_2). Therefore, improved audit investigation processes and compliance with standards significantly contribute to management efficiency and accountability. The larger coefficient for accountability implies that audit investigation and compliance account for more accountability than management efficiency. The result of this analysis agrees with the findings of Ojiya and Oga (2023) and Nwosu (2022). While the study found evidence of a significant positive impact of assets and liability verification on management efficiency ($\beta=0.39$, $P<0.04$), their impact on accountability ($\beta=0.73$, $P>0.93$) was non-significant. The non-significance may be explained by weak institutional oversight and disconnect from financial performance and accountability standards. This outcome aligns with the results of Sholadoye (2018) and Akinleye and Ogumakin (2023).

**Table 5: Hypotheses Testing Results**

Hypotheses	Pathway	std.Coeff.(β)	Z-stat	Prob.	Decision
H₁	intl_ctrl \rightarrow mgt_eff	-0.09	-0.56	0.57	Not Supported
	Intl ctrl \rightarrow accountability	0.02	0.11	0.91	Not supported
H₂	audit_invstg_cmplnce \rightarrow mgt_eff	0.38	1.67	0.09	Supported
	audit_invstg_cmplnce \rightarrow accountability	0.73	3.41	0.001	Supported
H₃	asts_liabltly \rightarrow mgt_eff	0.39	2.08	0.04	Supported
	assets_liability \rightarrow accountability	0.01	0.08	0.93	Not Supported

CONCLUSION AND RECOMMENDATIONS

This study examined the nexus between internal audit processes, management efficiency, and accountability in tertiary institutions in Southeast Nigeria. Specifically, it explored the effects of internal control, audit investigation and compliance, and asset and liability verification on the managerial and accountability outcomes of these institutions. The empirical evidence revealed mixed relationships among the variables. First, internal control exhibited a negative but non-significant effect on management efficiency and a positive but non-significant effect on accountability. This suggests that internal control systems in the studied institutions are largely compliance-oriented rather than performance-driven, thus limiting their contribution to institutional efficiency and accountability.

Second, audit investigation and compliance demonstrated a significant positive impact on both management efficiency and accountability, with a stronger influence on accountability. This underscores the critical role of effective audit investigations and adherence to audit standards in promoting transparency and responsible management practices within tertiary institutions. Third, asset and liability verification was found to significantly enhance management efficiency but had no significant effect on accountability. This outcome indicates that while verifying institutional assets and liabilities can improve operational efficiency, weak oversight and inadequate linkage to performance accountability frameworks may constrain its influence on broader accountability outcomes.

Overall, the study concludes that the effectiveness of internal audit processes in tertiary institutions depends not merely on their existence but on the extent to which they are implemented in a result-oriented and performance-focused manner. Strengthening institutional audit mechanisms and embedding accountability culture in audit practices remain pivotal for achieving sustainable management efficiency in Nigeria's tertiary education sector.

The study, relying on the empirical results, recommends as follows:

1. Internal control frameworks should be redesigned from being mere compliance checklists to becoming performance-driven mechanisms that enhance operational efficiency, resource utilization, and strategic accountability
2. Tertiary institutions should institutionalize regular, independent, and technology-supported audit investigations. Compliance with established audit standards and timely

implementation of audit recommendations should be enforced to foster transparency and managerial discipline.

3. Verification exercises should be linked to institutional performance reviews, budgeting processes, and financial disclosure mechanisms to ensure that efficiency gains translate into improved accountability outcomes
4. Continuous training and retraining of internal auditors on risk-based auditing, forensic investigation, and digital audit tools are necessary to improve audit quality and institutional governance standards.
5. Management of tertiary institutions should cultivate a culture where accountability is integral to institutional operations. Regular disclosure of audit outcomes and management responses should be made part of governance best practices.

ACKNOWLEDGEMENT

The funding for this research (TETFund/IBR/ABSU/2024/015) that generated this paper was provided by TETFUND under the National Research Fund intervention.



REFERENCES

- Adedokun, R. A., & Ogunwale, C. A. O. (2019). Appraisal of Determinants of Effectiveness of Internal Audit of the Public Tertiary Institutions in Nigeria—Respondent Perspectives
- Adelana, O. P., Ayanwale, M. A., & Sanusi, I. T. (2024). Exploring pre-service biology teachers' intention to teach genetics using an AI intelligent tutoring-based system, *Cogent Education*, 11(1), 2310976
- Adeyemo, V. O. (2021). Internal Control in Nigeria Tertiary Institutions, *International Journal of Social Science and Humanities Research*, 9(4), October–December
- Akinleye, G. T., & Ogunmakin, A. A. (2023). Effect of Internal Audit Function on Public Sector Accountability in Southwest, Nigeria, *Journal of Accounting and Management (JAM)*, 13(2)
- Alqudah, H., et al. (2023). Examining the Critical Factors of Internal Audit Effectiveness from Internal Auditors' Perspective: Moderating Role of Extrinsic Rewards, *Heliyon*, 9, e20497
- Ayobami, O. F. (2024). Impact of Internal Audit on Corporate Performance in Selected Local Government Areas of Kwara State, Nigeria. Thomas Adewumi University



- Babatope, T. I., & Adewunmi, V. A. (2019). Evaluation of Internal Audit Operations and the Efficiency of Educational Performance in Nigerian Universities: A Case Study of Ekiti State University.
- Bello, S. M. (2023). Relationship between Independence of Internal Audit Quality and Organizational Performance in Nigerian Universities, *International Journal of Intellectual Discourse*, 6(3)
- Bello, S. M., Ayoib, A. C., & Zalina, Y. M. (2017). Investigating the Relationship Between Internal Audit Quality and Organisational Performance of Public Universities in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 5(6), 17–38
- Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. *Asia Pacific Journal of Management*, 41, 745–783.
- Du, W., & Liu, L. (2025). Examining a structural equation model of peace of mind, gratitude, and positive reappraisal in predicting psychological well-being among college students, *BMC psychology*, 13(1), 1088.
- Filli, G. E., & Opeyemi, I. (2016). The Role of Internal Audit in Enhancing Accountability in Tertiary Institutions in Kogi State, Nigeria, *Research Journal of Finance and Accounting*, 7(14)
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Evaluation of the Structural Model, In J. F. Hair Jr., G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, & S. Ray (Eds.), *Partial Least Squares Structural Equation* (pp. 115–138).
- Hamidu, S. (2020). Impact of effective internal control system on financial accountability in tertiary institutions in Bauchi State, Nigeria, *Journal of Management Science and Entrepreneurship*, 20(7), 112–129
- Hazaea, S. A., Al-Matari, E. M., Omer, A. M., Farhan, N. H. S., & Zhu, J. (2024). The Impact of the Internal Audit System on Performance: Evidence from Emerging Markets. *Humanities and Social Sciences Communications*
- Hu LT & Bentler PM (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation modeling: Multidisciplinary J.* 6(1):1–55
- Institute of Internal Auditors (IIA). (2022). International Standards for the Professional Practice of Internal Auditing.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305–360
- Kline RB (2015) Principles and practice of structural equation modeling, 4th ed. New York: Guilford Press
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities, *Educational and Psychological Measurement*, 30(3), 607–610
- Lawal, A. A., Subair, K., & Ogungbemi, F. T. (2024). Determinants of Internal Audit Effectiveness of Tertiary Institutions in Kwara State.
- Lawal, S., & Alabi, A. T. (2023). Internal Audit Practices and Organization Effectiveness: Insights from SMEs in Kwara State. *Malete Journal of Accounting and Finance*, 4(1), 1–20.
- Nwosu, S. N., Aguwamba, S. M., & Akwawa, U. A. (2022). Internal Auditors and Corporate Governance in Nigerian Universities, *International Journal of Business and Management Invention (IJBMI)*, 11(9), 24–33



- Ojiya, I. F., & Oga, S. O. (2023). Effect of Internal Audit on Financial Management in Tertiary Educational Institutions: A Study of College of Education Oju, Benue State, Nigeria. *Journal of Corporate Finance Management and Banking System*, 3(6)
- Shehu, H. (2020). Impact of Effective Internal Control System on Financial Accountability in Tertiary Institutions in Bauchi State, Nigeria, *Journal of Management Science and Entrepreneurship*, 20(7)
- Sholadoye, L. O. (2018). Internal Audit Functions and Financial Accountability: Evidence from Tertiary Institutions in Kano State, Nigeria. M.Sc. Dissertation, Bayero University
- Sholadoye, L. O., Isa, M. A., & Abdullahi, S. R. (2018). Internal Audit Functions and Accountability of Tertiary Institutions in Kano State, Nigeria, *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 5(7), 158–165.
- Taiwo, A., & Adegoke, A. (2019). Internal Audit Operations and Educational Performance in Ekiti State University
- Uwaneze, J. E. (2014). Roles and Problems of Internal Audit Department in Ensuring Accountability in Nigeria Higher Institutions, *International Journal of Research and Advancement in Educational Methods*, 11(4)
- Wongsansukcharoen, J., & Thaweepaiboonwong, J. (2023). Effect of innovations in human resource practices, innovation capabilities, and competitive advantage on small and medium enterprises' performance in Thailand. *European Research on Management and Business Economics*, 29(1), 100210