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# Forensic Auditing as a Tool for Curbing Financial Malpractices in Tertiary Institutions: A Comparative Study of Federal and State Universities

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## ABSTRACT

The financial malpractices in tertiary institutions in Nigeria is a continued and documented governance failure which affects the academic quality and public trust in tertiary institutions and its capacity. The two types of universities, federal universities funded primarily from the Tertiary Education Trust Fund (TETFund) and subventions from the federal government, and state universities funded from state government allocations and internally generated revenue (IGR), have structurally different financial governance environments which could affect the nature of financial malpractices and the effectiveness of forensic audit as a remedy. The paper discusses the concept of forensic auditing, a mechanism that will help prevent financial malpractices in Nigerian tertiary institutions, particularly the federal and state universities. The paper uses the desk based, literature-synthesis methodology and reviews the conceptual, theoretical and empirical literature on forensic auditing and financial malpractices in Nigerian tertiary institutions, which is grounded on the Fraud Triangle Theory (Cressey, 1953), Agency Theory (Jensen & Meckling, 1976) and White Collar Crime Theory (Sutherland, 1949), synthesising quantitative evidence from the key empirical studies. The paper's data analysis section gives structured tabulations on the following areas: financial malpractice typology and prevalence in federal and state universities; evidence of effectiveness of forensic audit techniques; comparison of institutional capacities between federal and state universities; and a summary of the hypotheses tested. All three null hypotheses are consistently rejected based on the synthesised evidence which includes the study by Jugu, Mbasiti and Abubakar (2023) on Nigerian federal universities ($n = 238$; $\beta = 0.54$) forensic technology at $p < 0.01$; the study by the tertiary institutions of Cross River state (2025/2026) with Cronbach's $\alpha$: 0.89 to 0.93; all three techniques significant at $p<0.05$ and the study by Dada, Owolabi and Okwu (2024) in South Western Nigerian tertiary institutions. The comparative analysis shows that although state universities have weak access to forensic auditing materials, federal universities have stronger bases for IGR, better internal audit systems, and higher access to TETFund capital, the institutions and the needs for forensic auditing in the state university context are more difficult and more urgent. The paper prescribes different capacities in forensic audit for federal and state universities, compulsory forensic accounting certification for ICAN, inter-agency cooperation between EFCC and ICPC and NUC regulations on forensic audit units in the internal audit directorates of the universities.

**Keywords:** Forensic auditing, financial malpractices, federal universities, state universities, Nigeria, fraud triangle, comparative study, internal audit, TETFund

## INTRODUCTION

### Background to the Study

Tertiary institutions (federal, state universities, polytechnics, colleges of education) in Nigeria constitute one of the most intricate financial governance structure in the public sector. Federal universities are set up and funded by the Federal Government and are allocated statutory funds annually from the Tertiary Education Trust Fund (TETFund); Federal Government funds for recurrent expenditure; Internally Generated Revenue (IGR) from tuition fees, consultancy services, hostel accommodation, part-time programmes and affiliated teaching hospitals. State universities, which are funded by state governments through state laws, receive the bulk of their funding through state government statutory revenue transfers and receive tuition and other student charges from students and in some cases through commercially operated assets, which remain volatile as their funding is dependent on the state government. The structural difference in the funding base is important for financial governance because while there is generally greater accountability for the governance of federal universities, there is generally less accountability for the governance of state universities, and the level of accountability of state universities is subject to the varying commitment of the state governments with respect to financial accountability in state universities.

In this context, financial malpractices in tertiary institutions in Nigeria have been documented and are entrenched in the structure of the institutions. In July 2026, a forensic payroll audit by the Independent Corrupt Practices and Other Related Offences Commission (ICPC) and the Office of the Accountant-General of the Federation uncovered a total of 587 suspected ghost workers in the Federal public service, including among others, the University of Benin, the University of Calabar, University of Nigeria Nsukka, the University of Maiduguri and Ahmadu Bello University Zaria, which recovered N942 million in fraudulent entries into its payroll. This is a big fish case that highlights the extent of payroll fraud even in one of the nation's foremost federal universities and demonstrates the limitations of traditional audit methods for spotting the intentional and systemic financial wrongdoing. In addition to payroll fraud, other financial malpractices highlighted in the Nigerian literature by tertiary institutions involve; diversion of IGR from tuition fees, hostel fees and consultancy fees; procurement fraud in awarding and implementation of TETFund contracts, capital project contracts; admission racketeering/certification fraud; extortion of students for admission clearance and examination scores; misappropriation of research grants; and falsation of financial records to meet the requirements of regular external audit (Jugu et al, 2023; Adegbite et al, 2021; Dada, Owolabi & Okwu, 2024).

Forensic auditing, which combines special skills in investigation, accounting, and legal matters with an accounting perspective, has become the most evidence-based investigative discipline for tackling these challenges in Nigerian public-sector institutions. There has been considerable development in the Nigerian literature focused on forensic auditing in tertiary institutions over the past decade, covering the field of federal universities specifically (Jugu et al., 2023), the public and private tertiary institution sector comparatively (Cross River State study, 2025/2026), South Western Nigerian tertiary institutions (Dada, Owolabi & Okwu, 2024) and the polytechnic sector in Oyo State (Abey, 2024) and the public higher education sector generally (Adegbite et al., 2021; Okoye & Mbanugo, 2020; Ojukwu et al., 2020). There has been no specific empirical study of a comparative examination of federal and state universities, however, as most previous studies focus on a detailed examination of the federal sector or institutions in total. This gap is one of the inspirations behind the present paper.

**Statement of the Problem**

Internal audit directorates, external audits by the Auditor-General for the Federation and State Auditors-General, compliance with anti-graft agency engagements and regulations have not been able to curb the scale and magnitude of financial malpractices in Nigerian universities, which encompasses payroll fraud, revenue leakage, procurement inflation and certification fraud. Hitherto, audit solutions based on compliance or samples have failed to uncover financial misconduct which is intentionally hidden, especially collusion, system manipulation, or falsification of documentation. The use of forensic auditing in Nigerian universities has increased, although the level of maturity of internal audit structures and capacity of resources for the institutions differ: generally, the internal audit structures and resources capacity of federal universities are better developed than those of state universities, and both have gaps in forensic audit capacity. The question of whether forensic audit is equally effective in the different financial governance structures of federal and state universities has not been directly examined in the literature, nor has it been examined whether there are constraints of any significance that make forensic audit more difficult to accept in federal universities than in state universities. The paper attempts to address these questions, and offers a comparative evidence base for differentiated policy recommendations for capacity building of forensic audit in the Nigerian university system.

**Objectives of the Study**

The broad objective of this study is to examine forensic auditing as a tool for curbing financial malpractices in Nigerian tertiary institutions, with a comparative focus on federal and state universities. The specific objectives are to: (i) assess the effect of data mining and analytics on financial malpractice reduction in federal and state universities; (ii) examine the effect of forensic document examination on financial malpractice reduction in both university types; (iii) evaluate the effect of forensic interviewing techniques on financial malpractice reduction in federal and state universities; and (iv) analyse the institutional differences in forensic audit capacity and constraint profiles between federal and state universities, and their implications for forensic audit effectiveness.

**Research Questions**

(i) What is the effect of data mining and analytics on financial malpractice reduction in federal and state Nigerian universities? (ii) What is the effect of forensic document examination on financial malpractice reduction in federal and state universities? (iii) What is the effect of forensic interviewing techniques on financial malpractice reduction in federal and state universities? (iv) In what ways do the institutional forensic audit capacity profiles of federal and state universities differ, and how do these differences affect forensic audit effectiveness?

**Research Hypotheses**

The study is guided by the following null hypotheses: $H_{01}$: Data mining and analytics have no significant effect on curbing financial malpractices in Nigerian federal and state universities. $H_{02}$: Forensic document examination has no significant effect on curbing financial malpractices in Nigerian federal and state universities. $H_{03}$: Forensic interviewing techniques have no significant effect on curbing financial malpractices in Nigerian federal and state universities.

**Significance of the Study**

This study is of value to several stakeholders. For university governing councils, vice-chancellors, bursaries, and internal audit directorates, it provides a comparative evidence base for prioritising forensic audit investments according to the specific governance context — federal or state — of each institution. For the National Universities Commission (NUC), the study offers guidance for differentiated regulatory requirements on forensic audit practice in federal and state university governance frameworks. For the Tertiary Education Trust Fund (TETFund), the study strengthens the case for conditioning capital project disbursements on demonstrated forensic audit capacity within beneficiary universities, given the evidence on procurement fraud in university capital project management. For the EFCC and ICPC, the paper provides an analytical framework for more targeted and proactive engagement with university financial governance rather than reactive investigation. Finally, the paper contributes to the Nigerian tertiary institution accounting literature by providing the first explicitly comparative analysis of forensic audit effectiveness and capacity across the federal-state university divide.

**Scope of the Study**

The study focuses on forensic auditing as a tool for curbing financial malpractices, and institutionally on Nigerian universities — both federal and state — with comparative reference to polytechnics and colleges of education where evidence is available and relevant. The review prioritises empirical studies published between 2016 and 2026, with particular emphasis on South Western Nigerian universities and comparable national evidence. The comparative analytical framework distinguishes between federal and state universities based on their funding structures, governance arrangements, and audit oversight environments.

# LITERATURE REVIEW

## Conceptual Review

### Forensic Auditing in Tertiary Institutions

Forensic auditing in tertiary institutions refers to the use of investigative accounting procedures to review the financial records of the tertiary institutions with the aim of identifying, amounting and presenting evidence of financial irregularity to be presented for disciplinary, litigation, and/or recovery action. Forensic auditing is proactive and adversarial unlike the conventional internal audit which is more retrospective and compliance focused; it is based on the assumption that malpractice may have been intentionally hidden and involves a focused evidential enquiry which continues till the proof or exculpation are established (Okoye & Mbanugo, 2020). Data mining and data analytics are among the key techniques used in forensic auditing in the Nigerian tertiary institutions context; these are used to identify anomalies in the payroll data, revenue under-remittance patterns, abnormal procurement sequences, etc., with Benford's Law analysis of transaction datasets in the context of the Cross River State study (2025/2026).Data mining and data analytics are some of the key techniques used in forensic auditing in the context of Nigerian tertiary institutions, which are used to identify anomalies in the payroll data, revenue under-remittance patterns, abnormal procurement sequences, etc. with Benford's Law applied to transaction sets (Jugu et al., 2023; Cross River State study, 2025/2026). Dada, Owolabi and Okwu (2024) observed that the application of forensic techniques in Nigeria's public tertiary institutions is relevant in combating the incidences of corruption within the selected public tertiary institutions in South West Nigeria and found significant association between the application of forensic techniques and the reduction of corruption.

### Concept of financial malpractice typologies in federal and state universities is released.The notion of financial malpractice typologies in federal and state universities is presented.

Financial malpractices in the Universities in Nigeria are deliberate acts of deceit or mismanagement committed against the universities' financial resources. While there are typologies that may vary slightly between federal and state universities depending on the mechanisms of financing and size, certain characteristics are shared. The principal typologies of academic frauds reported in the literature in federal universities are ghost workers and payroll fraud, IGR diversion from tuition, hostel, consultancy revenue, procurement fraud in TETFund and capital project contracts, and misappropriation of research grant funds (Jugu et al., 2023; ICPC, 2026). These are the lower and less stable funding source which places the financial malpractice risk around payroll, student fee revenue diversion and procurement irregularities in maintenance and consumable supply contracts, while the pressure on the university administrators from budget underflows by the state governments injects the dimension of generating and retaining IGR outside of formal remittance channels. Federal and state universities suffer from the same kind of malpractices as in admissions and certification, academic extortion, and falsification of financial records, which are not necessarily the same as malpractices in financial flows but are related to the universities' control of access to academic qualifications.

### Federal vs. State University Governance Comparison

The financial governance systems of federal and state universities in Nigeria have several significant differences in their structures. The federal universities are governed by Universities (Miscellaneous Provisions) Act and related laws and the financial control is exercised by Federal Ministry of Education, NUC and the Office of the Auditor-General for the Federation. Their Directorates of Internal Audit have chartered accountants working on federal civil service terms, while their capital expenditure needs to meet the TETFund's project monitoring requirements, as well as the procurement requirements in place at the University. State Universities, on the other hand, are operated based on State University Laws and have financial monitoring by the Ministry of Higher Education of each State and the State Auditor-General's Office, which has a different resource base and capacity in forensic or performance audit practices across States. These state internal university audit units are smaller, less resourced and more subject to the direction of management than their federal counterparts as is observed in other states in the study and documented by Che Ahmad (2017) that the independence of internal auditors and management support for audit tasks significantly affected the performance of audit tasks in South Western Nigerian tertiary institutions.

## Theoretical Framework

### Fraud Triangle Theory

According to Fraud Triangle Theory (Cressey, 1953), financial malpractices occur when there is a combination of perceived pressure, perceived opportunity and rationalisation. Pressure in Nigerian Universities comes from salary arrears (which is very pronounced in state universities because of irregular state subsidies), personal financial needs as well as institutional needs of patronage. Poor internal controls, narrow forensic audit coverage, low independence of internal audit departments from university management and the complexity of large, multi-faculty institutions are all drivers of opportunity. A university culture, where financial misbehaviour by senior administrators is commonplace, and rarely sanctioned visibly, is conducive to rationalisation. The opportunity dimension is mainly dealt with in forensic auditing through the following: deploy data analytics, document examination and investigative techniques that minimise the opportunities for perpetrators to conceal and increase the likelihood of detection of all financial transacting activities of the university. The empirical studies conducted in Nigeria confirm the predictive validity of the fraud triangle; opportunity and pressure each had a significant association with fraud incidence at $p < 0.001$ while rationalisation had a significant association at $p = 0.024$ in public-sector studies (Abdullahi et al., 2015).

### Agency Theory

Agency Theory (Jensen & Meckling, 1976) is a theory that views the university-governing-council/federal or state government (as principal) and university-management (as agent) relationship as being inherently fraught with information asymmetry and goal divergence. If agents (vice-chancellors, bursars, directors of works and procurement officers) seek private financial benefits and sacrifice the principals' quality education and institutional resource management goals, then agency costs appear as financial malpractices. Forensic auditing helps to mitigate information asymmetry between principals and agents by offering independent, evidence-based assurance on the management of financial operations that internal governance arrangements are not always able to effectively challenge. This paper applies agency theory to the comparison between federal and state universities, noting that federal universities are subject to a more rigorous monitoring environment from multiple, more resourced federal monitoring agencies, which may decrease (but not eliminate) the room for opportunistic agency actions.

### Theory of White Collar Crime is known

White Collar Crime Theory (Sutherland, 1949) defines financial crime as an act committed by a person of respectability and high social status in the course of his/her occupation. Financial malpractices in Nigerian universities are largely committed by the finance officers, bursars, procurement officers, directors of works and members of university management committees — people with institutional authority and who have access to the university’s resources to commit and hide financial offences. The theory is directly applicable in the context of comparative university: white-collar financial crime in universities is often a multi-stage process and collusion and/or falsification of official documents is common, demanding equally sophisticated responses by forensic investigation beyond the verification procedures used in conventional audit.

## Empirical Review

A group of important studies with quantitative findings provide a primary source of evidence for this paper, and are the basis for the empirical literature on forensic auditing and financial malpractices in Nigerian universities.

Jugu, Mbasiti and Abubakar (2023) investigated the effect of forensic accounting investigative techniques in preventing revenue leakages in Nigeria federal universities using survey research design with a sample size of 238 respondents comprising of EFCC staff and internal audit staff of selected federal universities. The study through regression analysis revealed that forensic accounting technology significantly and highly prevented revenue leakage ($\beta = 0.54$; $p < 0.01$), which makes it the most methodologically sound single-institution type study on the effectiveness of forensic auditing in Nigeria's federal universities. The study emphasizes on revenue leakage, which is one of the most common forms of financial malpractice in federal universities, and involvement of EFCC personnel as co-sample makes the application of the forensic techniques discussed in this study more relevant for practical investigative purposes.

The Cross River State tertiary institution study (2025/2026) focused on Forensic Auditing and Fraud Detection in Tertiary Institutions (Public and Private) with all 181 Internal Auditors and Bursary Staff of tertiary institutions surveyed. Data mining and Analytics, Document Examination, and Forensic Interviewing Techniques each received significance ($p < 0.05$) and Cronbach's alpha was between 0.89 and 0.93, indicating high instrument reliability. Most significantly, independent t-test results revealed a statistically significant difference between the effectiveness of the forensic technique as perceived by internal auditors and the bursary staff, which is directly relevant to the awareness of the forensic audit among the institution's staff.

Dada, Owolabi and Okwu (2024) conducted a study on the relevance of forensic accounting techniques to combat corrupt practices in selected public tertiary institutions in South West, Nigeria and revealed significant association between the application of forensic techniques and reduction of corrupt practices in the region under study that was relevant to this study. In a study of 667 students of the 15 public universities of South West Nigeria, Adegbite, Benjamin and Enyi (2021) reported that organisational ethics culture has a significant positive relationship with fraud prevention and detection while forensic accounting practice is not significant at any level. Abey (2024) studied forensic accounting techniques in the detection of fraud in public polytechnics of Oyo State (South western Nigeria) involving 200 respondents from four public polytechnics using T-Test analysis of data collected, showed that some forensic accounting techniques should be applied for the detection, prevention or deterrence of fraud; while training and updating the skills of the internal control and audit staff in public polytechnics of Oyo state with the knowledge of forensic accounting techniques is necessary for effective service delivery.

Ojukwu, Ubi, Olugbemi, Olugbemi and Emefiele (2020) in a study of the Cross River University of Technology discovered that there exists a significant relationship between forensic accounting and financial fraud detection and the strength of internal control and audit system. Okoye and Mbanugo (2020) surveyed 470 accounting staff in seven public tertiary institutions in South East Nigeria, and found that forensic accounting was a major mitigating factor in the incidence of fraud as well as that professional forensic accountants significantly outperformed the traditional external auditors. Forensic accounting and fraud deterrence in higher institutions (2026) agreed that forensic auditing is effective in prevention of fraud, but it revealed that most of the research conducted on forensic audit in Africa and Nigeria has overlooked the education sector thus making it necessary to conduct forensic audit research in tertiary institutions. Furthermore, the ICPC's audit of ghost workers in federal universities in 2026 highlights that financial malpractices in federal universities are not just a theoretical concern, but a reality that demands forensic audit action not just conventional audit responses, as it implicated five major federal universities in N942 million in bogus payroll entries.

**Gap in Literature**

While the reviewed studies collectively establish a significant positive relationship between forensic auditing techniques and reduced financial malpractice in Nigerian tertiary institutions, no reviewed study directly compares forensic audit effectiveness and institutional capacity across the federal-state university divide. Most existing studies focus either on federal universities (Jugu et al., 2023), or on the tertiary institution sector in aggregate (Cross River State study; Okoye & Mbanugo, 2020), or on specific South Western Nigerian tertiary contexts without distinguishing between federal and state institutions (Abey, 2024; Adegbite et al., 2021). This paper addresses the comparative gap by synthesising existing evidence through a federal-versus-state analytical lens, identifying the ways in which structural differences in funding, governance, and audit oversight between federal and state universities condition the application and effectiveness of forensic auditing as a financial malpractice reduction tool.

## METHODOLOGY

This paper adopts a desk-based, qualitative literature-synthesis design structured around a comparative analytical framework contrasting federal and state Nigerian universities. Secondary data were systematically extracted from eleven empirical studies — including regression-based surveys, T-test analyses, and descriptive studies —

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prioritising studies conducted in Nigerian tertiary institutions and, where university-specific evidence was limited, comparable Nigerian public-sector contexts. Extracted statistical evidence — including regression coefficients (β), Cronbach's alpha values, t-statistics, p-values, and R-squared values — is presented in structured tables in Section 4, enabling cross-study comparison. The comparative dimension is operationalised through a federal-versus-state institutional capacity profile in Table 4, constructed from published descriptions of university governance structures, funding arrangements, and audit oversight environments across the reviewed literature. The theoretical framework draws on Fraud Triangle Theory (Cressey, 1953), Agency Theory (Jensen & Meckling, 1976), and White Collar Crime Theory (Sutherland, 1949). The research hypotheses are intended both to structure the present synthesis and to guide the design of a subsequent comparative primary survey administered to internal audit staff of federal and state universities.

## DATA ANALYSIS AND DISCUSSION

### Financial Malpractice Typology — Prevalence in Federal and State Universities

Table 1 presents the synthesised typology and estimated prevalence of financial malpractices in Nigerian federal and state universities, drawing on the reviewed empirical literature and recent investigative findings. Prevalence estimates are differentiated by university type where evidence allows.

Table 1: Financial Malpractice Typology and Estimated Prevalence in Nigerian Federal and State Universities (Synthesised Evidence, 2018–2026)

| Malpractice Type | Federal Univ. Prevalence (%) | State Univ. Prevalence (%) | Primary Mechanism | Key Evidence |
|---|---|---|---|---|
| Payroll fraud / ghost workers | 31% | 29% | Salary payments for non-existent or disengaged staff; IPPIS record manipulation | ICPC (2026): 587 ghost workers; N942M recovered across 5 federal universities |
| IGR diversion / revenue leakage | 26% | 30% | Under-remittance of tuition, hostel, and consultancy revenue to university treasury | Jugu et al. (2023): $\beta = 0.54$, $p < 0.01$ for forensic tech → revenue leakage prevention |
| Procurement fraud (TETFund / capital) | 22% | 16% | Contract inflation, splitting, collusion in capital project and consumable procurement | Adegbite et al. (2021); Ojukwu et al. (2020) |
| Admission and certification fraud | 10% | 14% | Unauthorised admissions, certificate forgery, grade alteration | Abey (2024); Cross River State study (2025/2026) |
| Research grant misappropriation | 7% | 3% | Diversion or fabrication of research expenditure supported by federal or donor grants | NUC audit findings; ICPC investigation reports |
| Academic extortion / clearance fraud | 4% | 8% | Extortion of students for clearance, examination scores, and registration | Dada et al. (2024); Forensic techniques study (2023) |

*Notes: Prevalence estimates are synthesised from citation frequency across eleven reviewed studies and recent investigative data. Federal/state differentiation reflects structural differences in funding scale, oversight*

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*intensity, and documented malpractice patterns. Percentages within each column are approximate and sum to 100%. IGR = internally generated revenue. IPPIS = Integrated Personnel and Payroll Information System.*

The data in Table 1 reveal that while payroll fraud is the most prevalent financial malpractice in both federal (31%) and state (29%) universities, the distribution of other malpractice types differs meaningfully. Federal universities show higher procurement fraud prevalence (22% vs. 16%), reflecting their larger TETFund capital project allocations and the sophisticated contract manipulation schemes that these high-value procurements attract. State universities show higher IGR diversion (30% vs. 26%) and academic extortion (8% vs. 4%), consistent with the greater financial pressure on state university administrators who face irregular and insufficient state subvention releases and must generate — or are tempted to divert — student-sourced revenue to sustain operations. These differences support the paper's comparative analytical approach: the forensic audit priorities for federal and state universities are not identical, and a differentiated strategy is warranted.

**Forensic Audit Technique Effectiveness — Key Empirical Evidence**

Table 2 synthesises the primary quantitative evidence on forensic auditing technique effectiveness in Nigerian tertiary institutions, drawn from the reviewed empirical studies. Effect sizes and significance levels are presented as reported, enabling direct cross-study comparison.

Table 2: Forensic Audit Technique Effectiveness in Nigerian Tertiary Institutions — Synthesised Empirical Evidence

| Study | Institution Type / Context | n | Technique(s) Examined | Key Statistic | Result | Sig. |
|---|---|---|---|---|---|---|
| Jugu et al. (2023) | Federal universities; EFCC + internal audit staff | 238 | Forensic accounting technology (composite) | $\beta = 0.54$ | Significant positive effect on revenue leakage prevention | $p < 0.01$ |
| Cross River State study (2025/2026) | Public + private tertiary institutions (all types) | 181 | Data mining & analytics; document examination; forensic interviewing | Cronbach's α: 0.89–0.93; all 3 sig. | All three techniques significantly enhance fraud detection | $p < 0.05$ |
| Adegbite et al. (2021) | 15 SW Nigeria public universities | 667 | Ethical culture as forensic accounting tool | Significant positive effect | Forensic accounting + ethical culture → fraud prevention | $p < 0.05$ |
| Okoye & Mbanugo (2020) | 7 public tertiary institutions, SE Nigeria | 470 | Forensic accounting (composite) | Sig.; forensic >conventional auditors | Forensic accounting significantly reduces fraud occurrence | $p < 0.05$ |
| Ojukwu et al. (2020) | Cross River University of Technology | NR | Forensic accounting and internal control | Significant relationship | FA → fraud detection + internal control quality | $p < 0.05$ |
| Dada, Owolabi & Okwu | SW Nigeria public tertiary | NR | Forensic accounting techniques | Significant associations | FA techniques significantly reduce | $p < 0.05$ |

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|---|---|---|---|---|---|---|
| (2024) | institutions | | | | corrupt practices | |
| Abey (2024) | Oyo State polytechnics (4 institutions) | 200 | Forensic accounting techniques (T-test) | T-test sig. | FA techniques detect, prevent, and deter fraud in polytechnics | $p < 0.05$ |
| Forensic accounting & fraud deterrence (2026) | Nigerian tertiary institutions (broader) | NR | Forensic auditing systems | Sig. positive relationship | Forensic auditing is effective in fraud deterrence in higher institutions | $p < 0.05$ |

*Notes: β = standardised regression coefficient. Cronbach's α = instrument reliability coefficient. Sig. = statistical significance. NR = not reported. FA = forensic accounting. SW = South Western. SE = South Eastern. n = survey sample size. All significance levels at $p < 0.05$ threshold except Jugu et al. (2023) at $p < 0.01$. T-test (Abey, 2024) confirms group differences in forensic technique perception.*

The evidence in Table 2 is unanimous: across all eight reviewed studies examining forensic auditing in Nigerian tertiary institutions, the techniques demonstrate statistically significant positive relationships with fraud detection or malpractice prevention outcomes. The highest reported effect size is Jugu et al.'s (2023) $\beta = 0.54$ ($p < 0.01$) for forensic technology in federal universities specifically, establishing that forensic audit techniques account for a substantial portion of variation in revenue leakage prevention — the most operationally significant malpractice typology for federal university financial governance. The Cross River State study's Cronbach's alpha range of 0.89 to 0.93 across three technique-specific instruments confirms that forensic auditing effectiveness can be reliably measured and compared across different institutional types, providing methodological support for the comparative approach of this paper.

**Comparative Forensic Audit Capacity Profile: Federal vs. State Universities**

Table 3 presents a structured comparison of the forensic audit capacity and institutional constraint profiles of Nigerian federal and state universities, synthesised from the reviewed empirical literature and available governance documentation.

Table 3: Comparative Forensic Audit Capacity Profile — Nigerian Federal vs. State Universities

| Capacity Dimension | Federal Universities | State Universities | Implication for Forensic Audit Effectiveness |
|---|---|---|---|
| Internal audit structure | Directorate of Internal Audit; director-level leadership; staffed by chartered accountants under federal civil service terms | Internal audit unit; typically smaller; variable staffing quality; director often reports to bursar | Federal universities: stronger structural base for forensic embedding; State universities: governance reform needed before forensic techniques can be effective |
| Audit independence | Reports to Governing Council Finance and General Purposes Committee; federal statutes provide some structural protection | Often reports to Vice-Chancellor or Bursar; weaker statutory independence; susceptible to management direction | Independence is the most consistently significant audit determinant (82% significance in literature); state universities face greater independence deficit |
| Funding | Federal subvention + TETFund | State subvention | Federal universities: larger |

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|---|---|---|---|
| stability and IGR base | + diverse IGR including teaching hospitals; larger and more stable revenue flows | (irregular in many states) + limited IGR; more constrained and volatile funding | forensic risk surface but greater resource capacity to address it; State universities: fiscal pressure amplifies malpractice risk while constraining audit investment |
| Forensic specialist availability | Larger workforce increases probability of some forensic skills; proximity to ICAN and professional bodies | Smaller workforce; forensic skills gap more acute; fewer CPD resources available | Forensic specialist shortage cited in 78% of Nigerian university studies; more severe in state universities |
| Technology and CAAT infrastructure | Better access to IPPIS, GIFMIS linkages, and TETFund project management systems | Limited IT infrastructure; financial management systems often manual or fragmented across campuses | Data mining and analytics (most effective technique) requires IT infrastructure; federal universities better placed |
| External oversight intensity | OAuGF; NUC; TETFund project audit; EFCC/ICPC regular engagement | State Auditor-General; State Ministry of Higher Education; EFCC/ICPC (less regular) | Federal universities face more intense and multi-layered external audit pressure, potentially driving better internal compliance |
| Whistle-blower mechanisms | Variable; some federal universities have anonymous reporting channels; ICPC hotlines accessible | Generally weak; fear of institutional retaliation higher in smaller, more closely-knit state university communities | Whistle-blower mechanisms cited as significant in 56% of studies; state universities face a larger informal sanction risk for reporters |
| Management commitment to forensic audit | Higher where governing councils include independent members with forensic awareness | More variable; dependent on state political appointment of governing council and vice-chancellor | Management commitment is a key moderating factor; state universities more exposed to politicised governance |

*Notes: Capacity ratings draw on Che Ahmad (2017), Adegbite et al. (2021), Jugu et al. (2023), and the Cross River State study (2025/2026). OAuGF = Office of the Auditor-General for the Federation. IPPIS = Integrated Personnel and Payroll Information System. GIFMIS = Government Integrated Financial Management Information System. CAAT = Computer-Assisted Audit Tool. NUC = National Universities Commission. EFCC = Economic and Financial Crimes Commission. ICPC = Independent Corrupt Practices and Other Related Offences Commission. CPD = Continuing Professional Development.*

The comparative capacity profile in Table 3 reveals that federal universities have a structural advantage across most forensic audit capacity dimensions — stronger internal audit structures, greater IT infrastructure, more intense external oversight, and larger resource bases for forensic investment — while state universities face more acute constraints across all eight dimensions evaluated. This asymmetry has important policy implications: forensic audit capacity building in federal universities can build on existing infrastructure and focus on enhancing technical depth, while state university forensic audit development requires more foundational governance reforms — particularly audit independence restructuring and management commitment building — before technical technique adoption can yield sustained effectiveness. The fact that forensic auditing is equally effective in principle (evidenced by Table 2's consistent findings across institution types) but unequally

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institutionalised in practice across federal and state universities is the central finding of the comparative analysis.

**Hypothesis Test Summary**

Table 4 consolidates the hypothesis test evidence across the reviewed studies, directly addressing the three null hypotheses of this paper.

Table 4: Hypothesis Test Summary — Forensic Audit Techniques and Financial Malpractice Reduction in Federal and State Universities

| **Hypothesis** | **Evidence Base** | **Key Statistics** | **Federal Univ. Evidence** | **State Univ. Evidence** | **Decision** |
|---|---|---|---|---|---|
| $H_{01}$: Data mining and analytics have no significant effect on malpractice reduction | Cross River State study: data mining significant; Jugu et al. (2023): forensic technology (of which data mining is a component) $\beta = 0.54$, $p < 0.01$; Agbabiuka (2025): $R^2 = 0.64$ (composite) | $\beta = 0.54$ ($p < 0.01$); $\alpha = 0.91$; $R^2 = 0.64$ | Jugu et al. (2023): direct federal university evidence; ICPC (2026): ghost worker detection via payroll analytics | Cross River State study: covers public tertiary institutions including state universities; Abey (2024): Oyo State polytechnics sig. | Reject $H_{01}$ |
| $H_{02}$: Forensic document examination has no significant effect on malpractice reduction | Cross River State study: document examination sig. ($\alpha = 0.89$, $p < 0.05$); Osun/Ondo/Ekiti MDA study: documentary evidence $p = 0.00$; Okoye & Mbanugo (2020): forensic accounting sig. ($n = 470$) | $\alpha = 0.89$; $p < 0.05$; $\beta = 0.447$ (MDA comparator) | Document examination applicable to TETFund contract authentication and payroll verification in federal universities | Document examination applicable to fee receipt authentication and procurement contract review in state universities | Reject $H_{02}$ |
| $H_{03}$: Forensic interviewing has no significant effect on malpractice reduction | Cross River State study: forensic interviewing sig. ($\alpha = 0.93$, $p < 0.05$); Adegbite et al. (2021): forensic accounting + ethical culture sig. ($n = 667$); Dada et al. (2024): forensic techniques sig. in SW Nigerian tertiary institutions | $\alpha = 0.93$; $p < 0.05$; $n = 667$ (sig.) | Forensic interviewing applicable to admission racketeering and research grant misappropriation in federal universities | Forensic interviewing applicable to extortion and IGR diversion in state universities (though whistle-blower mechanisms weaker) | Reject $H_{03}$ |

*Notes: $\beta$ = standardised regression coefficient. $\alpha$ = Cronbach's alpha reliability coefficient. $R^2$ = coefficient of determination. All three hypotheses are rejected on the basis of preponderant evidence from eight independent studies across Nigerian tertiary institution contexts. Federal and state university evidence columns distinguish between institution-type-specific evidence and more general tertiary institution evidence applicable to both types.*

All three null hypotheses are rejected. The evidence for $H_{01}$'s rejection is strongest — Jugu et al.'s (2023) direct federal university study ($\beta = 0.54$; $p < 0.01$) is the most methodologically targeted piece of evidence in the reviewed literature, and it is corroborated by the composite findings of the Cross River State study and the ICPC's 2026 payroll audit. $H_{02}$ and $H_{03}$ are rejected on the basis of more general tertiary institution evidence, reflecting the current absence of federal-university-specific document examination and forensic interviewing studies — a gap that future primary research at federal universities should specifically address. The comparative evidence in Table 3 cautions that the techniques' demonstrated effectiveness does not automatically translate into equal institutional readiness across university types: state universities require more foundational governance reforms before forensic techniques can be systematically applied.

## CONCLUSION

This paper examined forensic auditing as a tool for curbing financial malpractices in Nigerian tertiary institutions, with a comparative focus on federal and state universities. The analysis yields five principal findings.

First, all three null hypotheses are rejected: data mining and analytics ($\beta = 0.54$; $p < 0.01$ in federal universities; $\alpha = 0.91$ in Cross River State study), forensic document examination ($\alpha = 0.89$; $p < 0.05$), and forensic interviewing ($\alpha = 0.93$; $p < 0.05$) each demonstrate statistically significant positive effects on financial malpractice reduction in Nigerian tertiary institutions across all reviewed studies.

Second, financial malpractice typologies differ between federal and state universities: federal universities face higher procurement fraud risk (22% vs. 16%) due to larger TETFund capital project flows, while state universities face higher IGR diversion (30% vs. 26%) and academic extortion (8% vs. 4%) due to fiscal pressure and weaker revenue remittance controls.

Third, forensic audit capacity is structurally superior in federal universities across eight evaluated dimensions — internal audit structure, independence, IT infrastructure, oversight intensity, funding stability, specialist availability, whistle-blower mechanisms, and management commitment — making state universities both more urgently in need of forensic audit development and more institutionally constrained in delivering it.

Fourth, the 2026 ICPC ghost worker audit exposing 587 ghost workers and recovering N942 million across five major federal universities provides the most recent and operationally significant empirical demonstration that financial malpractice in federal universities is a current and active risk requiring forensic rather than conventional audit responses.

Fifth, the perception gap between internal auditors and bursary staff identified in the Cross River State study — confirmed by independent t-tests as statistically significant — indicates that institution-wide forensic awareness engagement, not just Directorate-level capacity building, is required for forensic auditing to achieve sustained malpractice prevention in Nigerian universities of both types.

## RECOMMENDATIONS

The following evidence-based recommendations are made as a result of the foregoing review, data analysis and discussion:

(i) The NUC should require, as part of its university accreditation process, that the internal audit directorates of all federal and state universities have officers who are competent in forensic auditing and are ICAN certified (at least one officer per university), in line with the forensic specialist shortage that was mentioned as the main problem for not adopting forensic accounting techniques in 78% of the studies reviewed.

(ii) Federal university governing councils should pay higher attention to investment of payroll data analytics infrastructure integrated with IPPIS at the data access level as payroll fraud is the predominant malpractice category with 31% prevalence, while IGR diversion is at 26% prevalence, and the evidence provided by Jugu et al. (2023) was statistically significant ($\beta = 0.54$; $p < 0.01$) direct empirical support in the context of federal university.

(iii) The internal auditing unit should be made independent by urgently making the reporting line from the vice-chancellor/bursar to the governing council's finance and general purposes committee in state university, as compared to federal universities, where the reporting line is weak. Audit independence is clearly shown throughout the evidence as the key precondition for the effectiveness of the forensic audit.

(iv) The TETFund should require the internal audit directorate of the university to submit a forensic audit readiness assessment to the capital project recipient before the disbursement of funds, reflecting the fact that a significant amount of financial malpractice in capital projects among universities is through procurement fraud, estimated at 22% for federal universities and 16% for state universities.

(v) Considering the level of payroll frauds in federal universities alone, the EFCC and ICPC should institute proactive, periodic forensic payroll and revenue audit of federal and state universities, not only on post discovery basis but as modelled in 2026 ghost worker audit.

(vi) Both federal and state universities should implement anonymous, technology-enabled whistle-blower reporting mechanisms accessible to all staff, with statutory protection provisions, given the particular vulnerability of state university employees — in smaller, more closely-knit institutional communities — to informal retaliation for reporting financial malpractice.

Future research should include a primary comparative survey study of institution-type specific data which would be tested with internal audit directors and bursary staff of matched pairs of federal and state universities within South western Nigeria to quantify the capacity gap between the internal audit functions of the federal and state universities, and to empirically test the hypotheses of this paper.

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