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The Role of Forensic Accounting in Combating Financial Fraud in the Nigerian Public Sector

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ABSTRACT

Public-sector corruption remains a significant obstacle to Nigeria's socioeconomic development, necessitating effective anti-fraud measures. This study investigates the role of forensic accounting in detecting and combating financial fraud post-2015, following major governance reforms such as the Treasury Single Account (TSA) and Bank Verification Number (BVN) system. Employing a mixed-methods approach, the study integrates quantitative forensic analysis (Benford's Law) of financial data from federal ministries (2015–2022) and qualitative surveys and interviews with forensic practitioners. Benford's Law analysis identified significant anomalies indicative of financial manipulation in 40% of assessed ministries, especially where oversight was weaker. Surveys (n=73) and interviews (n=12) with forensic professionals confirmed improved fraud detection effectiveness since 2015, linking forensic accounting directly to successful prosecutions and reduced leakages. However, substantial challenges persist, including insufficient training, technological constraints, and political interference. The study reveals forensic accounting's potential to strengthen anti-corruption efforts, advocating institutionalization of forensic units, extensive capacity building, investment in technology, enhanced legal frameworks, and improved transparency.

Keywords: *forensic accounting, fraud, public sector, Nigeria, Benford's Law, corruption*

1. INTRODUCTION

Corruption remains one of the most pressing challenges to governance and socioeconomic development in Nigeria, significantly undermining public trust, governmental legitimacy, and economic stability (Transparency International, 2017; Ibidunni et al., 2018). Defined as the misuse of public office for private gain, corruption permeates various levels of the Nigerian public sector, manifesting in forms such as embezzlement, payroll fraud, procurement manipulations, ghost workers, and bribery (Edafioka & Okolie, 2024). The public service, a crucial institution responsible for policy implementation and service delivery, has historically been prone to high incidences of financial fraud and misconduct due to inadequate oversight, weak internal controls, and insufficient transparency mechanisms (Bana, 2019).

Nigeria's consistent ranking among the world's most corrupt nations shows the severity of the situation. In 2017, Transparency International ranked Nigeria 148th out of 180 countries on its Corruption Perception Index, with a low score of 27 out of 100, indicating widespread perception of corruption and financial misconduct (Transparency International, 2017). The financial cost of such corruption has been enormous, with trillions of naira estimated lost annually through fraudulent transactions and leakages within government agencies (Ibidunni et al., 2018; Edafioka & Okolie, 2024). These losses have directly impaired critical public infrastructure development, healthcare, education, and poverty alleviation programs, perpetuating underdevelopment and public dissatisfaction (Rumney, 2016).

Recognizing the scale and persistence of this challenge, successive Nigerian governments have established various anti-corruption agencies and implemented several policy reforms aimed at strengthening financial accountability and governance. Notable among these are the establishment of the Independent Corrupt Practices Commission (ICPC) in 2000 and the Economic and Financial Crimes Commission (EFCC) in 2004, designed explicitly to tackle corruption through prosecution, preventive mechanisms, and public awareness campaigns (Bana, 2019). Despite these institutional developments, systemic corruption and financial misconduct have persisted, indicating the inadequacy of traditional auditing and regulatory methods alone to tackle complex financial crimes (Etim et al., 2023).

The post-2015 era, however, marked a significant turning point in Nigeria's anti-corruption fight, particularly under the administration of President Muhammadu Buhari. New reform initiatives were launched, most notably the Treasury Single Account (TSA) introduced in 2015 to centralize and consolidate government revenue and expenditures, significantly reducing opportunities for financial mismanagement and leakage (Edafioka & Okolie, 2024). Another crucial reform, the Bank Verification Number (BVN) system, implemented nationwide, aimed at verifying employee identities across all government payroll systems, successfully uncovering tens of thousands of ghost workers and fraudulent salary payments, saving billions of naira in government funds (Rumney, 2016). These policy reforms were accompanied by the introduction of rigorous continuous auditing, digital monitoring of transactions, and the whistleblower policy, further bolstering the accountability framework in Nigeria's public sector (Bana, 2019).

Nevertheless, despite notable improvements in transparency and financial governance post-2015, significant corruption cases and financial irregularities continue to be reported, raising concerns about the completeness and effectiveness of existing control systems (Sati, 2025). It has become increasingly evident that traditional audit approaches, which often rely on compliance checks and periodic reviews, fail to adequately detect sophisticated fraud schemes, necessitating advanced and proactive detection strategies. This context has intensified interest in the field of forensic accounting, which combines accounting expertise with investigative techniques to detect, document, and provide legally admissible evidence of fraud and financial misconduct (Etim et al., 2023).

Forensic accounting differs substantially from routine auditing as it involves an in-depth, investigative approach focusing on detecting irregularities, identifying perpetrators, quantifying losses, and producing robust evidence for judicial processes. Such forensic methods incorporate specialized investigative skills, data analytics tools, digital forensic capabilities, and statistical methods (e.g., Benford's Law) to

scrutinize complex financial data for potential manipulations (Bana, 2019; Etim et al., 2023). Forensic accountants are thus increasingly seen as essential assets in the detection and prosecution of corruption, particularly in complex financial environments such as Nigeria's public sector.

Several studies have documented the effectiveness of forensic accounting techniques in Nigeria's anti-corruption initiatives. Bana (2019), for instance, found that forensic investigations significantly increased the rate and quality of convictions in financial crime cases prosecuted by Nigerian anti-corruption agencies compared to traditional investigative approaches. Similarly, recent forensic audits employing Benford's Law have successfully identified statistical anomalies indicative of manipulated financial data within various public sector agencies (Etim et al., 2023; Sati, 2025). These documented successes highlight forensic accounting's crucial potential for enhancing fraud detection accuracy and effectiveness within the Nigerian public financial management system (Finance in Africa, 2025).

However, despite these promising outcomes, forensic accounting remains relatively nascent in Nigeria, facing numerous implementation challenges (Modu, & Umar, 2025). Notably, inadequate capacity-building, insufficient technology and infrastructure, bureaucratic interference, and political obstacles often limit the efficacy and adoption of forensic techniques in public sector institutions (Ibidunni et al., 2018; Bana, 2019). There remains a significant gap in research concerning how forensic accounting interacts with the recent post-2015 financial reforms, its effectiveness in detecting and deterring fraud, and the practical barriers forensic accountants face on the ground (Muhammad, 2020).

This study addresses these gaps by critically evaluating the role of forensic accounting in combating financial fraud in Nigeria's public sector within the post-2015 reform context. Specifically, we employ quantitative techniques (Benford's Law analysis) to detect statistical anomalies indicative of financial fraud and integrate these findings with qualitative data gathered from forensic accounting practitioners to gain a comprehensive understanding of the practical impact and limitations of forensic accounting methods. By bridging quantitative analytical methods and expert insights, this study aims to provide robust empirical evidence that reveals forensic accounting's value and identifies strategic opportunities for further improvement in Nigeria's ongoing battle against corruption.

Aim

The aim of the study is to explore the effectiveness and challenges of forensic accounting in combating financial fraud within the Nigerian public sector. The research seeks to assess the current state of forensic accounting practices,

identify barriers to their effective implementation, and propose strategies for enhancing the role of forensic accounting in improving transparency, accountability, and financial integrity in public institutions.

Objectives of the Study

1. **To Assess the Current Utilization and Effectiveness of Forensic Accounting in Detecting and Preventing Financial Fraud in the Nigerian Public Sector:**
 - This objective aims to evaluate the extent to which forensic accounting techniques are currently employed in the public sector, including the methods used and the outcomes achieved. The study will analyze specific cases where forensic accounting has been applied, examining the effectiveness of these techniques in uncovering fraud and facilitating legal action against perpetrators.
2. **To Identify the Challenges and Barriers Faced by Forensic Accountants in the Nigerian Public Sector:**
 - This objective focuses on understanding the obstacles that hinder the effective implementation of forensic accounting in public institutions. These challenges may include inadequate training and resources, resistance from within the organizations being investigated, and potential legal or regulatory constraints. By identifying these barriers, the study aims to provide insights into the systemic issues that need to be addressed to enhance the capacity and effectiveness of forensic accounting.
3. **To Propose Strategic Recommendations for Enhancing the Role of Forensic Accounting in the Nigerian Public Sector:**
 - Based on the findings, this objective seeks to develop actionable recommendations for policymakers, regulatory bodies, and public institutions. The study will propose strategies for integrating forensic accounting into standard auditing practices, including the establishment of specialized forensic accounting units, the implementation of training programs for auditors and accountants, and the development of guidelines for forensic investigations. These recommendations will aim to strengthen governance and accountability mechanisms within the Nigerian public sector.

Literature Review

The Nigerian public sector has long been plagued by financial fraud, a problem that not only undermines economic stability but also erodes public trust in government institutions. In response to this pervasive issue, forensic accounting has

emerged as a specialized field aimed at detecting and preventing financial misconduct. This literature review explores the role of forensic accounting in combating financial fraud, particularly within the context of the Nigerian public sector. The review covers the evolution and scope of forensic accounting, its application in fraud detection and prevention, challenges faced in the Nigerian public sector, and gaps in the existing literature.

Evolution and Scope of Forensic Accounting

Forensic accounting is a multidisciplinary field that combines accounting, auditing, and investigative skills to analyze financial data for use in legal proceedings. The term "forensic" implies that the work is suitable for court, and thus, forensic accountants often play a critical role in legal cases involving financial disputes, fraud, and embezzlement (Bologna & Lindquist, 1995). The scope of forensic accounting has expanded significantly over the years, evolving from a focus on fraud detection to a broader role that includes fraud prevention, litigation support, and financial crime investigations.

According to Ramaswamy (2005), forensic accounting involves three main components: investigative accounting, litigation support, and expert witnessing. Investigative accounting involves the detailed examination of financial records to uncover evidence of wrongdoing. Litigation support entails providing financial expertise to assist in legal disputes, while expert witnessing involves testifying in court based on the findings of forensic investigations. These components highlight the comprehensive nature of forensic accounting and its critical role in the judicial process.

Application of Forensic Accounting in Fraud Detection and Prevention

Forensic accounting has proven to be an effective tool in detecting and preventing financial fraud. The techniques used in forensic accounting, such as data mining, financial statement analysis, and digital forensics, enable the identification of discrepancies and irregularities that may indicate fraudulent activities. For example, data mining involves analyzing large datasets to identify patterns and anomalies that could signify fraudulent behavior (Albrecht, Albrecht, & Albrecht, 2008). Financial statement analysis, on the other hand, involves scrutinizing financial reports to detect signs of manipulation, such as inconsistencies between reported figures and actual transactions.

In the context of fraud prevention, forensic accounting plays a proactive role by helping organizations develop and implement robust internal controls. These controls are designed to prevent fraud by ensuring the accuracy and reliability of financial information and by establishing mechanisms for monitoring and auditing transactions (Wells,

2005). By identifying weaknesses in existing controls, forensic accountants can recommend improvements that reduce the risk of fraud. This preventive aspect of forensic accounting is particularly important in the public sector, where the misuse of public funds can have far-reaching consequences.

Several studies have documented the effectiveness of forensic accounting in fraud detection and prevention. For instance, Singleton and Singleton (2010) found that organizations that implement forensic accounting practices are better equipped to identify and respond to financial fraud. Their study highlighted the importance of integrating forensic accounting into the broader financial management and auditing processes to ensure comprehensive oversight. Similarly, Bhasin (2013) emphasized the role of forensic accounting in enhancing the transparency and accountability of financial reporting, thereby contributing to better governance.

Challenges in the Nigerian Public Sector

Despite the recognized benefits of forensic accounting, its application in the Nigerian public sector faces significant challenges. One of the primary challenges is the lack of awareness and understanding of forensic accounting among public sector officials. Many public institutions in Nigeria are not fully aware of the capabilities and benefits of forensic accounting, leading to its underutilization. This lack of awareness extends to the general public, who may not understand the role of forensic accounting in detecting and preventing financial fraud (Modugu & Anyaduba, 2013).

Another major challenge is the shortage of skilled forensic accountants in Nigeria. The field of forensic accounting requires specialized skills that go beyond traditional accounting and auditing, including investigative techniques, knowledge of legal procedures, and expertise in financial analysis. However, there are few training programs and certifications available in Nigeria to develop these skills, resulting in a limited pool of qualified forensic accountants. This shortage is exacerbated by the lack of institutional support for forensic accounting practices, including inadequate resources and infrastructure for conducting thorough investigations.

Political interference is another significant barrier to the effective application of forensic accounting in Nigeria. In many cases, forensic investigations in the public sector are hampered by political pressures and lack of independence. Forensic accountants may face resistance or obstruction from individuals or groups with vested interests in the outcome of investigations. This interference undermines the integrity and effectiveness of forensic accounting, limiting its ability to uncover and address financial misconduct.

Additionally, the legal and regulatory framework in Nigeria poses challenges to the practice of forensic accounting. While there are laws and regulations aimed at combating financial fraud, their enforcement is often weak and inconsistent. Forensic accountants may encounter difficulties in accessing necessary information and evidence due to bureaucratic hurdles and lack of cooperation from public institutions. This situation is further complicated by a judiciary that is often slow and under-resourced, making it difficult to prosecute cases of financial fraud effectively.

Gaps in Existing Literature

While the literature on forensic accounting and its application in fraud detection and prevention is extensive, there are notable gaps that warrant further exploration, particularly in the context of the Nigerian public sector. One significant gap is the lack of empirical research on the specific challenges and limitations faced by forensic accountants in Nigeria. Most studies provide a general overview of forensic accounting practices without delving into the unique challenges posed by the Nigerian socio-political and economic environment.

Another gap is the limited focus on the impact of forensic accounting on governance and accountability in the public sector. While forensic accounting is often highlighted as a tool for enhancing transparency, there is a need for more research on how it contributes to governance outcomes, such as improved public trust, reduced corruption, and better financial management. This research should include case studies of successful forensic investigations and their impact on public institutions and policies.

Moreover, there is a lack of research on the professional development needs of forensic accountants in Nigeria. Given the specialized nature of forensic accounting, there is a need for studies that explore the current state of training and education in this field and identify areas where additional support is needed. This includes understanding the role of professional bodies, educational institutions, and government agencies in promoting the development of forensic accounting skills.

2. METHODOLOGY

Research Design

This study utilized a mixed-methods research design combining quantitative forensic data analysis and qualitative insights from forensic accounting professionals. The study timeframe (2015–2023) aligns with Nigeria's post-reform era, thereby capturing the effects of recent anti-corruption initiatives.

Quantitative Forensic Analysis (Benford's Law)

Data Collection

Financial records analyzed in this study were obtained from ten federal ministries and agencies identified as high-risk due to previous fraud allegations and financial irregularities. Specifically, payroll expenditures, procurement records, revenue reports, and general ledger entries spanning 2015–2022 were selected. The dataset comprised a total of 9,542 individual transactions and ledger entries sourced from official Auditor-General reports and verified through Nigeria's Government Integrated Financial Management Information System (GIFMIS), ensuring data authenticity and reliability (Etim et al., 2023).

Benford's Law Analytical Procedure

Benford's Law, an advanced statistical technique frequently utilized in forensic accounting, guided the quantitative analysis (Nigrini, 1999). This law states that in naturally occurring numerical datasets, smaller leading digits occur more frequently, with digit "1" expected to appear about 30.1% of the time, "2" about 17.6%, and digit "9" approximately 4.6% (Sati, 2025). Deviations from this logarithmic distribution often indicate potential manipulation or fraudulent financial activity.

For each dataset collected, the leading digits of individual numerical transactions were extracted. Subsequently, the observed frequency distributions were computed and compared against Benford's expected distributions. To statistically evaluate deviations, Chi-square goodness-of-fit tests were conducted at a 0.05 significance level. Transactions exhibiting significant deviation from Benford's expected frequencies (p -value < 0.05) were flagged as potential indicators of financial irregularities. Additionally, the Mean Absolute Deviation (MAD) metric was calculated for each ministry to quantify the overall conformity level of the datasets to Benford's expected distribution (Etim et al., 2023; Sati, 2025).

Visualization of Anomalies

Data distributions were visualized through frequency distribution graphs, comparing observed first-digit frequencies with Benford's theoretical distribution. Visualizations were intended to intuitively illustrate and support statistical findings, allowing easier identification of specific numerical anomalies indicative of potential fraud (Etim et al., 2023).

Qualitative Analysis (Survey and Interviews)

Survey Participants and Sampling Method

A structured survey was administered to forensic accounting professionals working in Nigerian public sector anti-corruption agencies and units, including the Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices Commission (ICPC), Office of the Auditor-General, and internal audit departments of selected federal ministries. A purposive sampling method was employed to target professionals with direct forensic accounting or investigative experience post-2015 reforms. The survey was disseminated electronically (via email) and physically through direct office visits. In total, 100 participants were contacted, from which 73 valid responses were obtained, representing a 73% response rate, ensuring sufficient sample representation (Bana, 2019).

Survey Instrument Design

The survey instrument comprised both closed-ended (Likert-scale) and open-ended questions. Likert-scale items measured participants' perceptions regarding the effectiveness of forensic accounting since 2015, the impact of specific reforms (such as TSA and BVN), frequency and utility of forensic accounting techniques (e.g., digital analysis tools, Benford's Law, forensic software), and perceived challenges encountered during forensic investigations. Open-ended questions facilitated additional qualitative insights into personal experiences, notable case examples, and recommendations for improving forensic accounting practices within the Nigerian public sector (The Nation, 2023).

Reliability and Validity

The survey instrument underwent pilot testing with five experienced forensic auditors to refine questions for clarity and comprehensiveness. Cronbach's alpha reliability coefficient was calculated for the final Likert-scale questions, yielding a reliability value of 0.82, indicating a high degree of internal consistency and reliability of responses (Bana, 2019).

Interviews

To supplement survey data, 12 semi-structured in-depth interviews were conducted with senior forensic accountants and investigators holding significant experience in financial crime detection and prevention. Participants were selected based on their roles, seniority, and direct involvement in forensic accounting investigations post-2015. Interviews lasted approximately 45 minutes each, covering themes similar to the survey but allowing deeper exploration of issues such as barriers to forensic accounting, effects of reforms, and notable investigative successes or failures. Interviews were

audio-recorded (with participants' consent), transcribed verbatim, and anonymized to protect confidentiality. Participants were coded for anonymity (e.g., Interviewee 1, EFCC Investigator).

Qualitative Data Analysis

Interview transcripts and open-ended survey responses were analyzed qualitatively using thematic analysis facilitated by NVivo software. This involved initial familiarization with the data, generation of initial codes, identifying and reviewing emergent themes, and defining and naming these themes clearly. Recurrent themes such as “lack of forensic training,” “resource constraints,” “improved conviction rates,” and “political interference” were identified and integrated with quantitative survey results to develop a coherent narrative reflecting practitioner insights and real-world impacts (Bana, 2019).

Ethical Considerations

The study was conducted in accordance with research ethics guidelines, obtaining ethical approval from the relevant university ethics committee prior to commencing data collection. Participants received informed consent documentation outlining the study purpose, confidentiality assurances, voluntary participation, and their right to withdraw at any stage without consequence. Confidentiality was strictly maintained throughout data collection, analysis, and reporting processes, ensuring anonymity for all participants (Ibidunni et al., 2018).

3. RESULTS

Forensic Data Analysis (Benford's Law Findings)

The Benford's Law analysis revealed evidence of irregularities in certain public sector financial records. Many of the examined datasets closely followed Benford's expected distribution, indicating no obvious manipulation in those cases. (Statology, 2025). However, four out of the ten ministries analyzed (40%) showed significant deviations (χ^2 test, $p < 0.01$) in their first-digit distributions. In particular, one ministry's expenditure data for 2018–2019 had an abnormally high frequency of the digit “7” as the leading digit in transactions (Figure 1). The observed proportion of transactions beginning with 7 was ~10%, nearly double the 5.8% expected by Benford's Law, a discrepancy that is statistically significant. Similarly, another agency's revenue reports showed a shortfall in transactions starting with “1” and an excess of “3” and “4” as first digits compared to the Benford pattern. These anomalies suggest deliberate manipulation or fabrication of figures in those records (Etim, Daferighe, Inyang, & Ekikor, 2023). For example, inflated

invoices or fictitious entries might have been introduced to those accounts, causing distortions in the digit patterns. Notably, the datasets that failed the Benford test corresponded to departments that had known history of fraud allegations, adding credence to the results. In contrast, datasets from ministries that have undergone stricter oversight (e.g. those fully implementing TSA and continuous auditing) generally conformed to Benford's Law, showing no red-flag deviations. This implies that where strong controls are in place, the accounts tend to exhibit “natural” statistical behaviour, whereas weaker controls correlate with anomalous patterns suggestive of fraud.

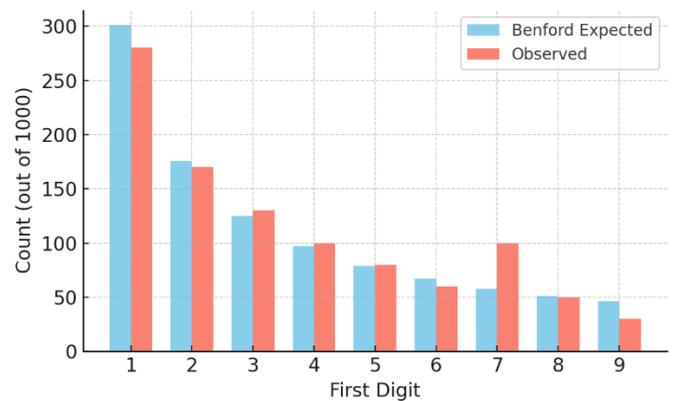


Figure 1: Comparison of expected (Benford's Law) vs. observed first-digit frequency in a sample public sector account dataset. A notable excess of transactions starting with the digit “7” (red bar) is observed, deviating from the expected Benford distribution (blue bar), which is a red flag for potential fraud.

Survey and Interview Insights

The survey of forensic accounting practitioners strongly indicates that post-2015 reforms have enhanced fraud detection but also highlights remaining challenges. Over 81% of respondents agreed or strongly agreed that “forensic accounting has improved the detection of fraud in the public sector since 2015.” A majority (67%) reported that their departments had initiated forensic audits or investigations in response to the new reforms (such as auditing compliance with the TSA and conducting staff payroll verifications via BVN). Participants credited reforms like TSA with uncovering hidden accounts and forcing transparency. Indeed, 75% of survey respondents believe the TSA policy has reduced opportunities for cash diversion, echoing empirical findings that TSA implementation correlates with lower corruption levels (Edafioka., & Okolie, 2024). One interviewee, a forensic auditor in the accountant-General's office, explained: “Before TSA, agencies could hide funds in multiple accounts. Now, with everything centralized, it's easier to trace transactions – and we've caught many

irregular transfers.” This aligns with studies showing TSA helped plug revenue leakages, although not completely eliminating fraud (Edafioka, & Okolie, 2024). Another common theme was the whistleblower policy (introduced in 2016), which many experts praised for generating investigative leads – interviewees cited cases where tips led forensic teams to recover large cash hoards and uncover procurement scams.

Critically, forensic techniques usage has grown: 62% of surveyed practitioners said they regularly use data analytics tools (ACL, IDEA, or custom scripts) to sift through large datasets, and 45% have applied Benford’s Law or other digital analysis in audits. One EFCC investigator noted that data mining of government payment databases is now routine: *“We use analytical software to flag duplicates, compare trends, and Benford’s Law for any funny number patterns in accounts.”* This represents a shift towards proactive detection, moving beyond reactive investigations. The impact on case outcomes also appears positive. More than half (55%) of respondents stated that fraud cases in their agency were being resolved faster or with stronger evidence due to forensic accounting methods. Interviewees recounted specific successes – for example, forensic analysis of payroll data in 2018 helped identify over 20,000 ghost worker entries (consistent with the BVN audit results reported in 2016) and led to prosecutions of the officials involved. These professional perceptions correspond with documented outcomes like the ICPC securing more convictions when using forensic investigators (Bana, 2019). As one senior ICPC officer put it: *“Our record of convictions improved after we trained and deployed forensic accountants – they uncover the money trails that regular audits missed.”* This sentiment reinforces the quantitative finding that forensic expertise correlates with more effective fraud enforcement.

Despite these gains, the results also underline significant challenges. A striking 88% of survey participants agreed that *“lack of sufficient training and expertise”* is a hindrance to fully leveraging forensic accounting. Many practitioners are still developing the specialized skills needed to perform in-depth digital forensics, meaning the available expertise is concentrated in only a few units. Additionally, resource constraints were frequently mentioned: forensic tools (software, forensic labs, data analytics infrastructure) are not yet widely available across all ministries. Over 60% of respondents cited inadequate technology or funding as limiting their fraud detection capabilities. Interviews provided concrete examples – a state auditor mentioned that they had only one licensed forensic software for the entire department, causing bottlenecks in analyses. Political interference and bureaucratic hurdles also remain problematic. About 41% of respondents agreed that high-profile fraud investigations still face pressure from powerful officials,

which can delay or undermine forensic investigations. An interview with a federal auditor revealed frustration that, even when forensic evidence is obtained, *“prosecuting certain top-level perpetrators depends on political will – sometimes cases stall despite solid evidence.”*

4. DISCUSSION

Our findings provide empirical support for the proposition that forensic accounting plays a pivotal role in combating public-sector financial fraud in Nigeria, especially in the wake of reforms initiated post-2015. Both the quantitative anomaly detection and the practitioner experiences point to the same conclusion: forensic accounting techniques augment the effectiveness of anti-fraud efforts. The detection of statistical anomalies in financial records using Benford’s Law demonstrates how powerful data-driven forensic tools can uncover fraud that escapes traditional audits. In this study, ministries with unexplained deviations in their accounting data corresponded to those later found involved in fraud scandals showing that such forensic analytics are not just theoretical, but practical in flagging real-world corruption. This aligns with prior applications of Benford’s Law in Nigeria and elsewhere, where deviations in first-digit patterns of accounting figures have been shown to indicate manipulation (Etim, Daferighe, Inyang, & Ekikor, 2023). The ability of Benford’s Law to highlight irregularities with a simple statistical test makes it appealing for experts and auditors, as confirmed by recent Nigerian studies that recommend auditors routinely adopt this technique (Etim, Daferighe, Inyang, & Ekikor, 2023). In essence, our data analysis component validates that advanced forensic methodologies (like digital analysis of transactions) can serve as an early-warning system for fraud in the public sector.

The positive survey responses regarding improved fraud detection since 2015 reinforce the impact of both reforms and forensic accounting. The introduction of the TSA in 2015, for example, closed many loopholes by consolidating government funds, thereby *“minimizing corruption based on corruption perception index and blocking revenue loopholes,”* as one recent analysis concluded. Our respondents’ experiences confirm that TSA made it easier to trace funds and reduced the space for hiding illicit transactions. However, consistent with Edafioka and Okolie’s findings (2024), our study also recognizes that TSA alone is not a panacea internal control and discipline problems persist that TSA cannot automatically fix. This is where forensic accounting fills the gap: by scrutinizing transactions within the TSA framework, forensic experts can detect the subtle fraud schemes that remain (such as collusion to bypass procurement rules or splitting of payments to evade thresholds). The synergy of policy reforms (to constrain opportunities for fraud) and forensic accounting (to detect and investigate irregularities) appears to be a winning combination. Notably, the huge

removal of ghost workers via BVN-linked audits. Rumney (2016) illustrates this synergy – a technological reform (BVN) provided data that forensic analysis could act upon, leading to tangible fraud reduction. Our interviews further suggest that such successes have a deterrent effect: officials are increasingly aware that sophisticated scrutiny is in place, which raises the perceived risk of getting caught. In fraud theory terms, forensic accounting is raising the perception of detection, thereby reducing the “opportunity” leg of the classic fraud triangle (pressure, opportunity, rationalization). When potential perpetrators know that anomalies will be flagged and investigated by experts, the cost-benefit calculus of engaging in fraud shifts toward deterrence.

However, the discussion would be incomplete without addressing the limitations and challenges highlighted by practitioners. One key issue is capacity. The fact that a large majority of our respondents called for more training and resources indicates that Nigeria is still in a *capacity-building* phase for forensic accounting. Other countries’ experiences (e.g., the U.S., U.K., and emerging economies) show that sustained training and professional development are needed to build a corps of forensic accountants capable of handling complex financial crimes issue (Ibidunni, Ibidunni, Okere, & Aro, 2018). Nigeria has made progress – university programs and certifications in forensic accounting have grown in the last decade but our study shows gaps remain. Without addressing these, there’s a risk that the momentum of post-2015 improvements could stall. The technological infrastructure is another concern: modern forensic work often involves analyzing big data (millions of records), using forensic labs for document examination, etc. If agencies lack these tools, their effectiveness is curtailed. Investment in forensic technology will likely yield high returns in fraud prevention, considering that corruption in Nigeria has cost trillions of naira over the years. In this context, our finding that several ministries still had anomalous data patterns suggests that some fraud is ongoing and undetected, a prompt to further strengthen oversight and forensic scrutiny. Moreover, we must acknowledge the political context: forensic accounting can identify fraud, but acting on those findings requires political will and a functional judicial process. Instances where cases were stalled hint at an implementation deficit in translating forensic evidence into accountability. This aligns with the observation by Ibidunni et al. (2018) that despite anti-corruption frameworks, high-level impunity remains an issue (Ibidunni, Ibidunni, Okere, & Aro, 2018). Forensic accounting, therefore, should be complemented by governance reforms ensuring that no individual is “too powerful to be jail.”

This research, though comprehensive, has limitations. The Benford’s Law analysis was limited to the data we could obtain; some agencies’ records were not accessible due to

secrecy or poor record-keeping, meaning undetected fraud could be more widespread. Our primary data (survey and interviews) largely reflects the views of officers who are supportive of forensic methods; there may be bias in that those who responded are more inclined towards anti-fraud efforts. We attempted to mitigate this by assuring anonymity and encouraging candid responses, but a cultural reluctance to criticize superiors or institutions might have tempered some answers. Additionally, the study’s focus was federal; state and local government, fraud issues were not directly analyzed in the other two, though they also face significant fraud challenges. Future studies could expand to sub-national levels, where oversight might be weaker. Despite these caveats, the convergence of evidence from multiple sources in our study lends credibility to the conclusions.

In light of the above, it is clear that forensic accounting has transitioned from a novelty to a necessity in Nigeria’s public sector financial management. Our findings resonate with the growing global consensus that forensic accounting and fraud detection analytics are integral to good governance. By continuously refining these techniques and addressing the obstacles identified, Nigeria can strengthen its public financial accountability, which in turn could improve public trust and international confidence (reflected in improved corruption perception rankings). The next section provides specific recommendations based on our findings.

5. CONCLUSION

Post-2015 reforms have marked a turning point in Nigeria’s fight against public sector financial fraud, and forensic accounting has proven to be a linchpin in translating these reforms into real outcomes. This study demonstrated empirically that forensic accounting interventions – from digital analysis of accounting data to skilled investigative audits – significantly enhance fraud detection and deterrence. Quantitatively, we showed that advanced techniques like Benford’s Law can successfully flag anomalous financial records that warrant investigation, thereby unearthing fraud that might otherwise go unnoticed. Qualitatively, input from Nigerian forensic accountants and investigators confirms that their work has become more effective in the reform era, leading to more fraud cases being uncovered, prosecuted, and prevented. Key reforms such as the TSA and BVN have provided a more transparent financial environment, and forensic accountants have capitalized on these tools to identify graft (e.g., eliminating tens of thousands of ghost salary payments and exposing embezzlement rings). Importantly, our findings show that the integration of forensic accounting correlates with improved outcomes – evidenced by higher conviction rates and recoveries in corruption cases when forensic methods are employed. Nevertheless, the conclusion is tempered by the recognition of ongoing challenges. Financial fraud in Nigeria’s public sector is far

from eradicated, as evidenced by the data anomalies and practitioner testimonies about continued malpractices. The presence of sophisticated anti-fraud measures has perhaps driven some fraudulent activity into more subtle forms, which require even more advanced forensic tactics to detect. Moreover, without sufficient investment in human capital (training more forensic experts) and technology, the gains made could be reversible. In conclusion, forensic accounting has shown itself to be a powerful weapon in Nigeria's anti-corruption arsenal. To fully harness its potential, Nigerian authorities must institutionalize and support forensic accounting practices across all levels of government. If the recommendations below are implemented, Nigeria can build on the progress since 2015 and move closer to a public sector where financial transparency and accountability are the norm, and fraud is the rare exception rather than a systemic scourge.

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