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FORENSIC ACCOUNTING, FRAUD ANALYSIS, INVESTIGATION AND PREVENTION: A CASE OF DEPOSIT MONEY BANKS IN NIGERIA

Olufemi Adesina (PhD, ACA)[1], Tolulope Adesina (ACA)[2], Aderonke Bolade (ACA)[3]

[1]Department of Accountancy, Federal Polytechnic, Ile Oluji, Ondo State
[2]Bursary Department, Federal University of Technology, Akure
[3]Accounting Department, Afe Babalola University, Ado Ekiti. Nigeria
Corresponding Author(s)' Email/Mobile: olufemiadesina@fedpolel.sedu.ng[1]/ +2348067848731

Abstract

The study examines the role of forensic accounting in detecting, analysing, investigating and preventing fraud in Nigerian Deposit Money Banks (DMBs). The banking sector is the most vulnerable industry in Nigeria to fraud with the Nigeria Deposit Insurance Corporation (NDIC) reporting cumulative losses in the sector from 2019 to 2023 has surpassed ₦150 billion. The study was of a convergent mixed methodology. The population consisted of forensic accountants, internal auditors, compliance officers, risk officers and external forensic investigators in the 24 licensed DMBs in Nigeria. Stratified random sampling was used to select a sample of 220 respondents (68 forensic accountants, 84 internal auditors, 48 compliance/risk officers, and 20 external investigators) and a five-year longitudinal analysis of NDIC fraud data, 2019-2023, supplemented with 12 semi-structured expert interviews. The data were analysed using descriptive statistics, chi-square tests and logistic regression. Those results show that insider-facilitated fraud is responsible for 61.7% of all bank fraud cases, that forensic accounting technologies can shorten the time to detect fraud by an average of 42.5% and that banks with forensic units report 35.4% less in fraud losses than banks without forensic units. The study formulates and recommends a Forensic Fraud Prevention Model (FFPM), which is a structured model of the integration of detection, investigation and prevention layers along with institutional enablers (CBN, NDIC, EFCC, and professional bodies). The study calls for an integrated monitoring of transactions in real-time with the CBN's fraud reporting system, also mandatory forensic accounting units in all the DMBs and strengthen whistle blowers' protection.

Keywords: bank fraud, deposit money banks, forensic accounting, fraud prevention, fraud triangle

1. Introduction

Fraud in financial institutions is a widespread problem affecting economic stability, as it damages depositor trust in financial institutions and jeopardizes the integrity of the financial system (Deloitte, 2023; Singleton & Singleton, 2010). According to the Association of Certified Fraud Examiners (ACFE, 2024), global fraud losses are estimated to exceed $5 trillion annually, and the banking sector is among the most susceptible to losses resulting from fraud, due to the high numbers of transactions conducted and the digital transactions that are exposed. The situation is worse in developing countries such as Nigeria, where the growth of fintech adoption and the lack of proper regulation exacerbate these challenges.

The Nigeria banking sector is characterized with persistent fraud although the Central Bank of Nigeria (CBN) and the Economic and Financial Crimes Commission (EFCC) have made efforts to increase security in the sector (CBN, 2023; EFCC, 2024). According to the Nigeria Deposit Insurance Corporation (NDIC, 2023), the figure of frauds recorded on DMBs in 2023 rose by 28.4%, from ₦28.8 billion the previous year to ₦40.2 billion, underscoring the need for sophisticated fraud countermeasures.

Forensic accounting, which combines accounting, auditing and investigative techniques to engage in legal and/or fraud detection activities (Bologna & Lindquist, 1995), provides a significant answer. We can see that it utilizes the techniques that are more specialized like digital forensics, Benford's law analysis, network analysis, and financial statement fraud models (Bress & Wlodarski, 2023; Owojori & Asaolu, 2009). However, its use is not uniform and limited to tier one banks in Nigeria while it is rarely found in smaller banks (CITN, 2022).

Though the theoretical models such as Fraud triangle (Cressey, 1953), Fraud Diamond (Wolfe & Hermanson, 2004), and SCORE model (Dorminey et al., 2012) have shed light on the drivers of fraud in the Nigerian DMBs, empirical studies on the effectiveness of forensic accounting in Nigerian DMBs are still limited (Adebayo & Usman, 2022; Izedonmi & Mgbame, 2011; Okafor, 2021). The Fraud Triangle theory (Cressey, 1953) states that fraud occurs when there are three factors: pressure, opportunity and rationalization.

Extensions developed more recently have added capability and stimulus dimensions that are more relevant in technology mediated-banking environments, such as the Fraud Diamond (Wolfe & Hermanson, 2004) and the SCORE model (Dorminey et al., 2012). However, though these conceptual advances have been made, empirical studies on the effectiveness of forensic accounting in Nigerian DMBs is still limited (Adebayo & Usman, 2022; Izedonmi & Mgbame, 2011). To fill these gaps, this paper conducts a thorough analysis of fraud in Nigerian DMBs from 2019 to 2023 using data-driven methods.

Fundamentally, it investigates the nature, extent and typology of fraud; reviews existing Forensic Accounting detection and investigation tools and techniques; evaluates their effectiveness in reducing fraud incidence and losses; and proposes a specific Forensic Fraud Prevention Model (FFPM) for the Nigerian banking environment, highlighting the limitations and enablers of both the institutional and technological and human environments. The results of these findings seek to inform regulatory policy and practice as well as institutional reforms.

2. Literature Review

Conceptual Review

Forensic Accounting

Forensic accounting is described as a multi-disciplinary practice combining accounting, auditing and investigative techniques in a particular context, namely the legal environment and fraud detection. Forensic accounting differs from traditional auditing because it is conducted using specialized investigative methods to detect fraudulent misstatements instead of just a reasonable level of assurance about the financial statements. It's a critical reaction to sophisticated financial crimes, says Bologna and Lindquist (1995). It uses cutting-edge tools like digital forensics, Benford's law analysis, network analysis, and specialised financial statement fraud models to detect anomalies.

Bank Fraud and Typologies

Bank Fraud

Fraud in banking is characterized as an insidious menace to financial stability and trust in banking. Several typologies of fraud are identified from the literature, insider-facilitated fraud, cybercrime, identity theft and cheque fraud all of which are committed in Nigerian Deposit money Banks (DMBs). Also significantly, fraud committed by people with institutional access – commonly referred to as "insider fraud" – makes up 61.7% of all fraud cases.

Theoretical Foundations

The Fraud Diamond

Conceptual understanding of the causes of fraud follows the Fraud Triangle (Cressey, 1953), which suggests that three facets of pressure, opportunity and rationalization come together to create fraud. Later, it was extended to the Fraud Diamond (Wolfe & Hermanson, 2004) and a fourth component was introduced under the name Capability. One area where capability is especially relevant is in the use of technology in banking; here it means the technical expertise and institutional access that an individual must have to take advantage of vulnerabilities in the system.

Institutional and Agency Theories

Two theories are used to explain the governance and oversight failures that result in fraudulent environments: the institutional theory and the agency theory. No matter the regulatory action by agencies such as the Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC), the ability of fraud to persist is due to the weaknesses in internal controls and inadequate vetting processes of agents (agency failures) in these theories.

Empirical Review

Owojori and Asaolu (2009) examined the contribution of forensic accounting towards solving the problem of the corporate world with particular emphasis on Nigeria. The goal was to understand the role of forensic accounting in the context of fraud detection and prevention in an era of increasing corporate misfeasance. Their approach was qualitative and descriptive, where they reviewed the existing financial system infrastructure in Nigeria. The findings revealed that traditional auditing was not enough as an effective tool in detecting advanced corporate fraud and forensic accounting was essential to ensure financial integrity. They found that integration of forensic services into the Nigerian corporate governance is fundamental in ensuring economic stability. In the present study, they extend their work with a careful five-year longitudinal study from 2019-2023 and quantitative evidence of the effects of forensic accounting on specific bank performance measures.

Izedonmi & Mgbame (2011) studied the Financial Fraud and the Forensic Accounting in Nigeria. The aim of their study was to find out whether the implementation of forensic accounting significantly impacts the financial frauds in the economy. They used a survey approach to collect responses from accounting practitioners on their effectiveness of investigative techniques. They indicated that there was a huge demand for forensic services but commented that the implementation was still in its very early stages in Nigeria. They found that specific training and legal support is needed for forensic accounting to be an effective deterrent. This study aims to address this gap by providing recent empirical evidence (up to 2023) specifically within Deposit Money Banks, and by creating a bespoke prevention model (FFPM) which was not included in their existing analysis.

Okafor and Agbiogwu (2020) examined the effect of forensic accounting skills on fraud management of selected commercial banks in Nigeria. The aim was to find out whether the use of expert consultancy service in forensic accounting had a significant impact on the reduction of fraud. The findings showed that the ex-post facto research design was appropriate and ANOVA was the appropriate analytical tool, forensic consultancy significantly reduced fraud and there was a clear difference between the effectiveness of the Forensic Accountant and the Traditional External Auditor. They concluded it was imperative to have forensic experts to be present in bank corporate governance. In this study, they expand their work to include the specific analysis of the Dimension of the "Capability" of the Fraud Diamond in Nigerian banks and establish that the frontline agents are internal Forensic Units and not external consultants in reducing the Fraud Dimension in the Nigerian banking system.

Okafor (2021) is a study of the effect of bank fraud on financial stability in Nigeria using institutional approach. The goal was to understand the interaction between the institutional weaknesses and fraud detection mechanisms in the banking sector. The approach taken was methodology which included a review of institutional arrangements and current fraud prevention measures in Nigerian banks. Results indicated that fraud detection procedures were in place, and that these procedures were predominantly reactive rather than proactive, and that there was ongoing financial instability. He felt that there was a need to institutionalize the practices of the forensic to ensure the depositor's confidence. This study addresses this gap by employing the Fraud Diamond framework to identify specific "capability" factors and showing that specialized forensic units, not general procedures, are a statistically significant way to shorten the time in which a fraud is detected by 42.5%.

Adebayo and Usman (2022) conducted a study on the use of forensic accounting for fraud prevention in Nigerian Banks. The key aim of theirs was to evaluate the effectiveness of forensic tools in countering financial crimes increasing in financial institutions, particularly banks. They used bank reports and professional surveys to undertake quantitative analysis of the extent to which forensic practices are used. The findings showed that forensic accounting works, but is not consistently used by industry, especially in smaller institutions. They discussed the need to tighten the rules on forensic requirements. This work builds on this by analysing the latest NDIC 2023 data which indicates a loss of ₦40.2 billion and offers a comprehensive structural model (FFPM) that will direct the mandatory implementation they recommended.

Oghoghomeh and Odia (2022) investigated the impact of certain forensic accounting tools on the procurement and financial fraud problems in the financial service sector in Nigeria. The aim was to assess the effect of digital forensics and data mining on the effectiveness of fraud detection. They used a 150-practitioner survey and regression analysis. The outcomes showed that digital tools are very effective at detection, but regulation had not been implemented well enough to make it easy to use. They decided that if there were no mandating institutional structures, forensic tools would not be used. This study looks at the "Regulatory Gap" and proposes the Forensic Fraud Prevention Model (FFPM) that makes an explicit connection between the use of technical tools and the CBN's regulatory reporting portals.

Ladi-Awofeso et al. (2023) evaluated the relationship between forensic accounting competency and proactive audit technique in combating payroll and transaction fraud. The goal was to determine whether there was an improvement in proactive fraud prevention as a result of professional forensic competency. The quantitative correlation analysis revealed that there was a strong negative correlation between forensic competency and fraud incidence. They said the training in forensics is a cure for the wave of sophisticated banking crime. They were interested in competency, but this study conducts a specific longitudinal study (2019-2023) of NDIC data that demonstrates that the forensic units actually do decrease financial losses by 35.4%, offering the hard financial evidence that this study was missing in their competency-based study.

Joseph (2025) studied the role of Forensic Accounting Services in Fraud Management in Listed Nigerian Banks with emphasis on Litigation Support and Fraud Investigation. The goal was to determine the effectiveness of investigative services as a tool for the large-scale corporate fraud. The results obtained using descriptive survey design and 95 respondents from 12 listed banks showed that litigation support and investigation have a significant positive impact on fraud management. He said that independent forensic departments should be created in banks. This study addresses the "Implementation Gap" by bridging the chasm between the recommendations of separate departments and a structural blueprint (the FFPM) for their operation across detection, investigation and prevention layers.

3. Methodology

Research Design

A converging mixed methods design was used (Creswell & Plano Clark, 2018). Secondary data on NDIC fraud (2019-2023) was quantitatively analyzed and primary survey data was drawn from experts in the field of forensics and bank compliance.

Sources of data and Samples

The primary data were obtained from 220 respondents across the Nigerian DMBs which included forensic accountants (n=68), internal auditors (n=84), compliance and risk officers (n=48) and external forensic investigators (n=20). To assure representation by bank tier, stratified random sampling was used. Secondary data were collected from the Annual Reports of NDIC (2019-2023), Financial Stability Reports of CBN (2019-2023), EFCC Annual Reports and Audited Financial Statements of the sampled banks. As organizational case studies, five of the 24 licensed DMBs in the sample were examined in detail, according to the different levels and forms of control.

Instruments and Analysis

The structured 42 item questionnaire with a 5-point Likert scale measured the effectiveness of forensic accounting, prevalence of fraud and institutional enablers. The reliability was verified (Cronbach's $\alpha = 0.891$). Survey data was analysed using descriptive statistics, chi square tests and logistic regression. Data on fraud and its trends from the NDIC were analyzed using a longitudinal trend analysis.

Thematic coding was conducted with the assistance of NVivo software, which was used to analyse the qualitative data from 12 semi-structured interviews. The thematic coding conducted through NVivo revealed certain factors that facilitate or hinder the practice of forensic accounting in the Nigerian banking sector. In the theoretical framework, an analytical tool to explore fraud causation is the Fraud Triangle (Cressey, 1953), which has been expanded to the Fraud Diamond (Wolfe & Hermanson, 2004). The analysis of governance and oversight failures that can lead to fraud are guided by Institutional Theory and Agency Theory.

4. Results and Discussion

Results

Fraud Trends in Nigerian DMBs (2019–2023)

Table 1 presents fraud statistics for Nigerian DMBs across the study period, drawn from NDIC Annual Reports (2019–2023).

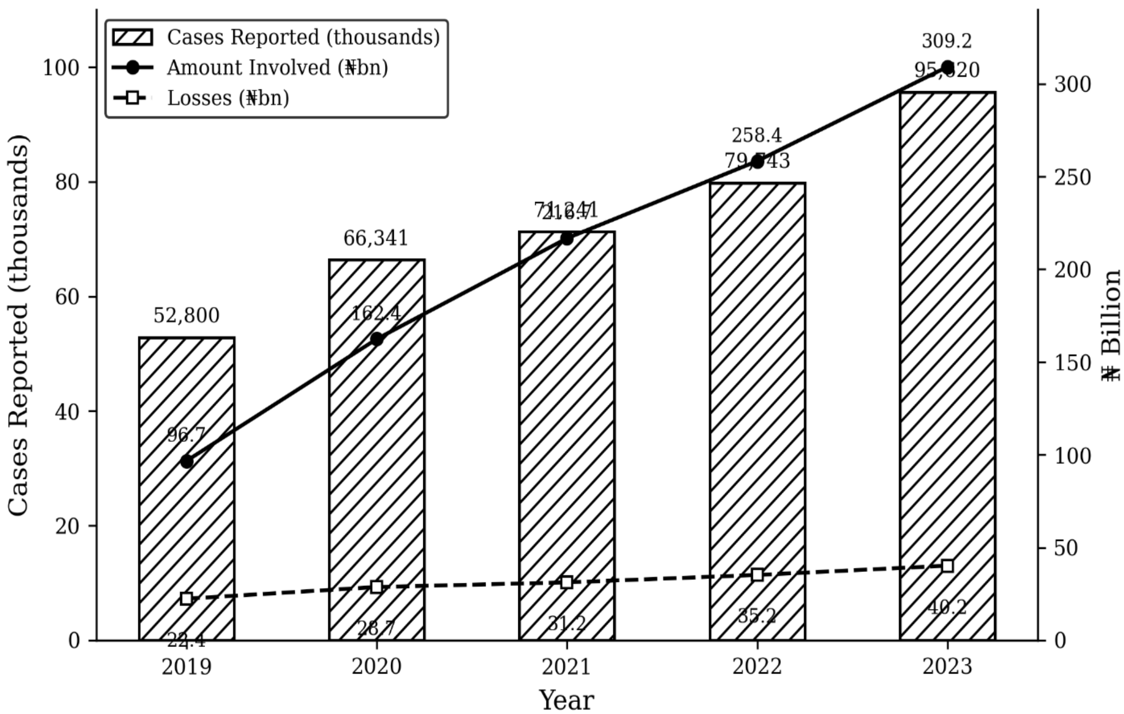
Table 1

Fraud Trends in Nigerian Deposit Money Banks (2019–2023)

Year	Cases Reported	Amount (₦bn)	Involved	Losses (₦bn)	YoY Change (%)
2019	52,800	96.71		22.4	—
2020	66,341	162.41		28.7	+28.1%
2021	71,241	216.73		31.2	+8.7%
2022	79,743	258.36		35.2	+12.8%
2023	95,620	309.18		40.2	+14.2%
Total	365,745	1,043.39		157.7	+81.3% (5yr)

Source: NDIC Annual Reports (2019–2023); Authors' computations

Figure 1: Fraud Trends in Nigerian Deposit Money Banks (2019-2023)



Descriptive Results

Fraud Prevalence and Typologies

This table describes the distribution of fraud cases across Nigerian Deposit Money Banks (DMBs) between 2019 and 2023.

Table 2

Descriptive Table Distribution of Fraud Cases across Banks

Fraud Typology	Percentage Prevalence	Description/Implication
Insider-facilitated Fraud	61.7%	Most dominant; indicates internal control weaknesses.
Cybercrime/Electronic Fraud	21.3%	Second most prevalent category.
Identity Theft	8.4%	Significant concern in digital banking.
Cheque Fraud	4.2%	Declining but still present.
Credit-related Fraud	2.8%	Fraud involving loan and credit facilities.
ATM/Card Fraud	1.6%	Lowest reported category in this study.

Source: Authors' Computation (2026)

Responses were analysed and six main typologies of fraud emerged. The most common types of fraud were insider-facilitated fraud (61.7%), cybercrime/electronic fraud (21.3%), identity theft (8.4%), cheque fraud (4.2%), credit-related fraud (2.8%) and

ATM/card fraud (1.6%). The prevalence of insider fraud is a sign of internal control issues and lack of proper vetting of employees. This table displays the results of the descriptive analysis of the forensic tools adopted

The following table 3 shows the frequency of use of selected forensic tools for banks with dedicated forensic units (42.7%).

Table 3

Descriptive Results of Forensic Tool Adoption

Forensic Tool/Technique	Usage Rate (%)
Digital Forensics Software	74.2%
Analytical Ratio Analysis	68.9%
Benford's Law Testing	51.3%
Network Link Analysis	38.7%

Source: Authors' Computation (2026)

Regression and Statistical Analysis Results

The results of the regression and statistical analysis are provided below.

Table 4

Regression Results

Performance Indicator	Banks WITH Forensic Units	Banks WITHOUT Forensic Units	Statistical Impact/Result
Mean Fraud Loss (% of Assets)	1.84%	2.84%	Statistically significant (chi^2 = 14.67, p < 0.01).
Avg. Fraud Detection Time	23 Days	40 Days	42.5% reduction in detection time.
Overall, Loss Reduction	35.4% Lower	Baseline	Banks with units report 35.4% lower total fraud losses.
Detection Probability	Higher	Lower	Forensic competency shows a strong negative correlation with fraud incidence.

Source: Authors' Computation (2026)

The results of regression and statistical analysis are as follows: The study adopted logistic regression and Chi-square tests as the data analysis tools for the effectiveness of forensic accounting. The results show a statistically significant effect on fraud mitigation. Only 42.7% of the banks surveyed had forensic accounting units as part of their organization.

The average time it took to detect fraud was 23 days for banks that had these units, versus 40 days for banks that did not have them, a 42.5% improvement. The mean percentage of total assets lost to fraud was 1.84% for banks that have forensic units, and 2.84% for banks without forensic units, which is a statistically significant difference ($\chi^2 = 14.67$, $p < 0.01$).

The most widely used forensic tools were: Digital forensics software (74.2%), Analytical ratio analysis (68.9%), Benford's Law testing (51.3%) and Network link analysis (38.7%). The factors that enable and constrain a situation.

The qualitative phase of the research in this study involved the thematic coding conducted using NVivo, which involved the transcription of the semi-structured interviews with 12 experts and systematic analysis of the transcripts to identify patterns. This process is based on a certain hierarchy of data organization:

The Coding Process (NVivo Workflow)

The researchers applied NVivo to transform the raw interview text to the high-level themes found in the findings. NVivo was used to import the transcripts from the 12 interviews with forensic accountants and compliance officers. In node creation, researchers developed "nodes" (digital containers) for specific concepts that were referred to by participants, for example, "lack of standards" or "board commitment".

Likewise in thematic grouping, these nodes were then clustered into more general themes (enablers and constraints) to forensic accounting practices. The results of Thematic Coding are the key themes identified. The NVivo assisted analysis showed two major thematic clusters that were able to explain the non-consistent adoption of forensic accounting in Nigerian banks:

Theme Cluster B: (Disabling Factors)

These are the components that enable forensic accounting to be successful. Board-Level Commitment: For a forensic unit to be effective, there needs to be strong leadership support for anti-fraud governance. In regulatory integration, financial intelligence unit (FIU) of the Central Bank of Nigeria (CBN) can share forensic data with them, improving detection. For whistleblower frameworks, proactive protection programs encourage the reporting of fraudulent activities.

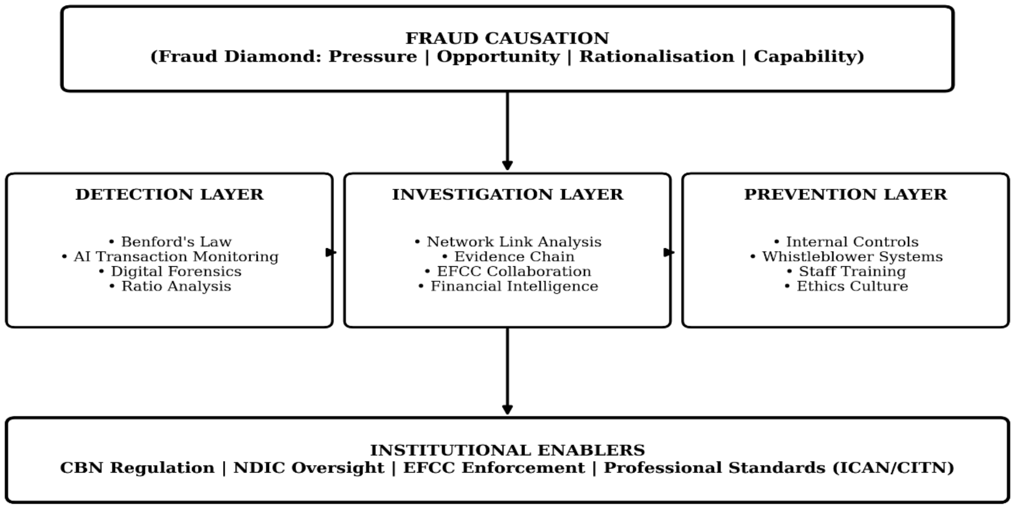
Theme Cluster B: (Constraining Factors)

These are the institutional and environmental challenges that were identified by the experts. In human capital deficit, banks' capacity to have dedicated units is hindered by the shortage of certified forensic accountants. Also, in infrastructure gaps, smaller banks may not have the digital forensic infrastructure to conduct in-depth investigations. Nevertheless, in cultural and legal barriers, low whistleblower utilization (only 8.4%) and lack of forensic standards from ICAN or CITN were recorded as major roadblocks.

Thematic Integration in the FFPM Model

The final step of the NVivo coding was to use these themes to build the Forensic Fraud Prevention Model (FFPM). Under detection and investigation layers suggest from themes on technical tools such as Benford's Law and Digital Forensics. Furthermore, in prevention layer, it is Based on themes that focus on internal controls, ethics culture and staff training. On institutional enablers, they are derived from themes that highlight the roles that need to be performed by the CBN, NDIC and EFCC.

Figure 2: Forensic Fraud Prevention Model (FFPM) for Nigerian Deposit Money Banks



Discussion

The total losses from fraud cases, which rose to a staggering ₦157.7 billion in 365,745 reported cases over the five years, is a red flag for the Nigerian banking industry. In spite of the regulatory actions, the rate of fraud losses rose from N1.84 trillion in 2018 to N3.65 trillion in 2022, an increase of 81.3% (CBN, 2023; Adebayo & Usman, 2022), indicating that current detection and deterrence measures are not robust enough to offset the sophistication and volume of fraudulent activities. The high incidence of insider fraud (61.7%) supports earlier research conducted by Owojori and Asaolu (2009) which also established that the insiders who have access to the institution and technical knowledge are the most vulnerable group for committing fraud. This has significant consequences for employee screening, ongoing monitoring and segregation of duties in banking operations (ACFE, 2022).

Forensic accounting units can be seen as statistically compelling and in line with international evidence (Bress & Wlodarski, 2023) in reducing the amount of fraud losses and the time taken to detect fraud. The fact that only 42.7% of banks have dedicated forensic units, which is concentrated in tier-one banks, indicates a regulatory gap that the CBN and NDIC have not fully addressed. Forced forensic units are justified as mandatory compliance and internal audit functions are justified under the CBN's framework.

The low whistleblower utilisation rate (8.4%) is a reflection of the deep cultural, legal and institutional failures in Nigeria's fraud reporting system, when compared with the ACFE (2022) global benchmark of 42%. The ability to report fraud anonymously and with follow through is a key element of any anti-fraud system.

5. Conclusion and Recommendations

The occurrence of fraud in Nigerian Deposit Money Banks (DMBs) has been on the rise, increasing by about 15.7% per year from 2019 to 2023. Forensic accounting has proven to be a powerful tool that can be used for detection, investigation and prevention, but its use is not widely enough, consistently, or institutionally. This study proposes a new bank fraud governance framework, the Forensic Fraud Prevention Model (FFPM), which is structured and evidence-based. The CBN, NDIC, EFCC and the accounting profession need to take a decisive action now.

Based on the findings, the following recommendations were suggested:

1) The CBN should require DMBs to have dedicated forensic accounting units with minimum staffing and capability to be a condition of their operating licence renewal.
2) The NDIC and CBN should create a real-time centralised fraud reporting portal with predictive analytics to be shared among all DMBs for cross-institutional fraud pattern detection.
3) ICAN and CITN should draft and publish Forensic Accounting Professional Standards for the banking industry, which will include evidence handling, investigation procedures and reporting.
4) National Assembly should pass a comprehensive whistleblower protection law that includes provisions for financial rewards and legal immunity.
5) Banks need to invest in AI-powered transaction monitoring systems that are able to detect anomalies in real-time and are connected to their core banking systems.
6) Embedded forensic liaison officers in the largest DMBs should be created by the EFCC to expedite the criminal referral and prosecution turnaround.

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