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Effect of Internal Control Attributes Practices on Fraud Management in Nigerian Deposit Money Banks

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The study examines the effect of internal control attributes (control environment, monitoring and information and communication) on fraud management in Nigerian Deposit Money Banks. With increasing fraud risks and evolving fraud schemes, the role of internal control systems in safeguarding organizational assets, ensuring compliance, and improving operational efficiency is critical. The study adopts a descriptive research design, using a cross-sectional approach to examine how control environment, monitoring, and information communication practices influence fraud management. Findings indicate that monitoring activities play the most significant role in mitigating fraud risks, followed by the control environment and information and communication practices. The results highlight the importance of robust internal controls in fostering organizational resilience against fraud. It is recommended that Banks should invest in automated monitoring systems, senior management should foster a culture of transparency, ethical behavior, accountability and organizations must establish secure and efficient communication channels.

Keywords: internal control attributes, fraud management, monitoring activities, control environment, nigerian deposit money banks, information technology

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1. Introduction

In developed nations, internal audit functions are often mandated by strict regulations, which attract more research and attention (Haron & Nomran, 2022). Conversely, in developing countries like Nigeria, where resources are scarce, firms face challenges in implementing effective internal audit procedures (Omolehinwa & Olayemi, 2021). Deposit Money Banks (DMBs), being central to the financial system, are particularly susceptible to fraud. As a result, the need for strong internal audit standards has become increasingly apparent to protect stakeholders and preserve public trust (Uchenna & Agbo, 2023). In light of the global rise in corporate crime, forensic accounting has gained attention as a vital tool for detecting and addressing fraud (Egbunike & Okeke, 2021). The Nigerian banking industry, operating in a unique socioeconomic and regulatory environment, faces additional challenges posed by financial technology advancements, sophisticated fraud schemes, and the rapidly evolving global financial landscape (Ogundele et al., 2022). Therefore, to maintain a competitive edge and resilience against these risks, DMBs must prioritize understanding how internal audit practices can help prevent fraud (Bolarinwa & Adeyemi, 2023). The exponential growth and diversification of Nigeria's banking industry have made it more vulnerable to advanced fraud schemes (Ojo & Salawu, 2022). Fraudulent activities are prevalent in both private and public firms, and the independence of auditors is often compromised in developing nations like Nigeria (Adebayo et al., 2021).

Consequently, traditional accounting systems and audits have proven ineffective in some aspects of fraud prevention, leading to the adoption of forensic accounting as a more specialized method for identifying and managing fraud (Ismaila & Obafemi, 2024). Internal control (IC) systems, which aim to improve operational efficiency, reporting accuracy, and regulatory compliance, are a cornerstone of fraud prevention (Okon et al., 2023). Internal auditing, a critical component of IC, evaluates the effectiveness and efficiency of these controls. However, the increasing intelligence of fraudsters and the involvement of insiders who understand how to bypass detection tools raise concerns about the reliability of forensic accounting for legal purposes (Ibrahim & Musa, 2023).

Thus, addressing these challenges requires a multifaceted approach to fraud management (Eze et al., 2024). A successful fraud management system is built on a strong control environment, which reflects the organization's ethical tone and leadership mindset (Adeoye & Fashola, 2022). Furthermore, effective governance, risk management, and internal control are essential for strengthening this environment. DMBs, operating in dynamic and unpredictable environments, must adopt comprehensive risk assessment strategies to detect and mitigate potential fraud risks (Owolabi et al., 2023). By doing so, they can allocate resources more effectively to reduce these risks. Control activities, which include preventive, investigative, and corrective measures, are vital for reducing fraud risks (Olawale & Ibrahim, 2023).

In addition, these activities ensure asset security, data accuracy, and compliance with regulations, thereby strengthening the framework for managing fraud. Effective control measures also contribute to improved financial stability, operational efficiency, and overall organizational performance (Egbe et al., 2022). The monitoring component complements the other internal control components by ensuring their effectiveness through continuous evaluation. Through ongoing assessments, organizations can identify emerging risks, address control weaknesses, and seize opportunities for improvement (Chukwuma & Onyekachi, 2021). Moreover, robust monitoring tools and programs help align internal control systems with an organization's structure, management style, ethical values, and culture, enhancing creativity, quality accounting, and waste reduction (Omoruyi et al., 2023). Given the complexity and evolving nature of fraud, DMBs in Nigeria must build a comprehensive fraud management system emphasizing internal audit practices (Agbonlahor & Eweje, 2023). This study seeks to explore how the control environment, risk assessment, control activities, and monitoring interact to address fraud-related challenges effectively. As such, the efficient implementation of internal audit practices has become indispensable for DMBs, safeguarding their reputation, financial stability, and stakeholder interests (Okonkwo & Ude, 2024). The increasing organizational complexities and global business risks have heightened the demand for improved organizational performance-enhancing strategies (Bello & Yusuf, 2023).

To this end, the Committee of Sponsoring Organizations (COSO) updated its internal control framework to address these challenges. However, a significant gap remains in understanding the individual impact of internal control components on fraud management (Idris & Ajibola, 2022).

This study aims to investigate the effects of financial, strategic, and management controls on innovation in Nigeria's banking sector. Specifically, it focuses on the control environment, risk assessment, control activities, monitoring, and information and communication as key components. While existing research acknowledges the importance of robust internal audit practices in fraud management, the theoretical underpinnings and empirical evidence linking specific practices to fraud outcomes remain underdeveloped (Okezie et al., 2024). Furthermore, the population scope of previous studies has been limited, reducing the generalizability of findings across different industries and regions (Akinwale et al., 2023). Addressing these gaps through longitudinal studies and a broader contextual approach can provide valuable insights into how internal audit practices influence fraud management outcomes. Ultimately, understanding the relationship between internal audit practices and fraud management can enable organizations to develop more effective strategies to combat fraudulent activities (Adetunji et al., 2022). This study, therefore, aims to investigate how the control environment, monitoring, and information and communication components impact fraud management in Nigerian DMBs, contributing to a deeper understanding of these dynamics.

2. Literature Review

Concept of Fraud Management

Fraud management encompasses the detection, prevention, mitigation, and response to fraudulent activities within organizational operations. Fraud is broadly defined as intentional deceit aimed at personal gain or causing loss to another. Its definitions vary, with legal interpretations differing across countries. For example, the Fraud Act of 2006 provided a formal legal definition in England and Wales, emphasizing deception for dishonest gain (Legislation.gov.uk, 2006). Fraudulent acts include misrepresentation, concealment, and manipulation of facts to deceive individuals or organizations.

The Association of Certified Fraud Examiners (ACFE) defines fraud as the misuse of one's position for personal enrichment through misappropriation of resources (ACFE, 2023). Criminologists identify three conditions enabling fraud: will, opportunity, and an escape route (Idolor, 2010). Fraudulent activities may result from greed, poor internal controls, inadequate training, and systemic vulnerabilities (Smith et al., 2022). Common types of fraud in the public sector include theft, embezzlement, forgery, money laundering, and computer fraud (Johnson & Brown, 2021).

Fraud is a global phenomenon with significant financial, reputational, and societal consequences. It affects organizations, individuals, and governments. Effective fraud management requires understanding potential fraud risks, conducting risk assessments, and implementing robust internal controls (PwC, 2023). Preventative measures such as segregation of duties, employee training, and routine audits are essential (KPMG, 2024). Additionally, adopting advanced technologies like biometrics, encryption, and anti-fraud algorithms enhances defenses against fraud (Chen et al., 2021). Despite preventative measures, fraud attempts may still occur. Early detection is crucial to minimizing losses. Organizations use real-time monitoring, data analytics, and machine learning algorithms to identify suspicious activities and detect fraud with precision (Deloitte, 2022). When fraud is suspected, investigations involve gathering evidence, interviewing involved parties, and potentially engaging law enforcement (Grant Thornton, 2023). Collaboration with external fraud intelligence networks helps organizations stay updated on evolving fraud trends (EY, 2024).

Upon confirming fraudulent activities, organizations must act promptly. Responses include freezing accounts, initiating legal actions, notifying affected stakeholders, and recovering assets (ACFE, 2023). Coordinating with customers, regulatory bodies, and insurance companies ensures an effective response. Continuous improvement is vital in fraud management. Organizations must regularly evaluate their strategies, adapt to emerging fraud methods, and learn from past experiences (PwC, 2023). Sharing best practices across industries also enhances resilience against fraud. Factors contributing to fraud in public institutions include inadequate compensation, poor working conditions, lack of adherence to procedures, and collusion among employees (Adeyemi et al., 2021).

Fraud thrives when stolen assets are easily converted, and penalties for misconduct are weak (Smith et al., 2022). Ethical guidelines and codes of conduct play a critical role in curbing fraud by promoting integrity and accountability within organizations (Johnson & Brown, 2021).

1. Concept of Internal Control Attributes

Internal control attributes are the key elements that ensure the effectiveness and efficiency of an organization's internal control system. These attributes include control activities, risk assessment, information and communication, monitoring, and the control environment (COSO, 2023). Control activities involve policies and procedures established to address risks and achieve organizational objectives. Risk assessment helps identify and analyze risks that might impact the achievement of goals, enabling management to design appropriate responses (Zhang et al., 2022). Information and communication ensure that relevant data flows internally and externally, facilitating informed decision-making. Monitoring involves ongoing and periodic evaluations to assess the performance of controls and ensure deficiencies are addressed promptly (Harris et al., 2021). Finally, the control environment sets the overall tone of the organization, reflecting management's attitude toward internal control and ethical values. Together, these attributes provide a framework for organizations to mitigate risks, safeguard assets, and improve operational performance while enhancing compliance with regulations.

2. Concept of Control Environment

The control environment refers to the foundation of an organization's internal control system, encompassing the tone, culture, and framework established by management and governance structures (COSO, 2023). It influences the behavior of employees and determines how seriously controls are implemented and adhered to across the organization. Key components of the control environment include ethical values, integrity, leadership's commitment to competence, organizational structure, and the assignment of authority and responsibility (Agyemang & Boateng, 2022). The control environment shapes the organizational culture, encouraging ethical behavior and compliance with rules and regulations. When management demonstrates a strong commitment to ethical practices, employees are more likely to Uphold these values. The board of directors also plays a critical role in setting the control environment by providing oversight and ensuring accountability. A robust control environment serves as the cornerstone for effective internal controls, fostering a risk-aware culture and supporting the achievement of organizational objectives (Kumar et al., 2021).

3. Concept of Monitoring

Monitoring is a critical component of internal control systems that ensures their continued effectiveness and relevance in achieving organizational goals. It involves ongoing and periodic evaluations to assess the performance of controls, identify deficiencies, and implement corrective actions (COSO, 2023). Monitoring activities can be categorized into two types: ongoing monitoring and separate evaluations. Ongoing monitoring occurs as part of routine operations, embedded in day-to-day processes, while separate evaluations are conducted periodically to provide an independent assessment (Jones et al., 2022). Effective monitoring requires a clear understanding of organizational objectives, well-documented processes, and robust communication channels. Technology has enhanced monitoring processes by enabling real-time data analysis and reporting, which improves decision-making (Smith & Brown, 2021). A robust monitoring framework ensures that internal controls remain relevant and adaptable to changing circumstances, contributing to improved governance, risk management, and operational efficiency.

4. Concept of ICT

Information and Communication Technology (ICT) refers to the integration of computing, telecommunications, and data management tools to support decision-making and organizational processes. ICT plays a transformative role in improving efficiency, communication, and the accessibility of information in modern organizations (World Bank, 2023). Key components of ICT include hardware, software, networks, and data management systems. It enables seamless communication, automation of routine tasks, and efficient data storage and retrieval (Adebayo et al., 2022). The use of ICT in internal controls enhances accuracy, reliability, and timeliness of information, supporting decision-making and reducing the risk of errors or fraud (Chen et al., 2021).

Emerging technologies, such as artificial intelligence and blockchain, have further revolutionized ICT by improving transparency and enhancing cybersecurity. Effective adoption of ICT strengthens internal controls, improves organizational agility, and supports compliance with regulations in an increasingly digitalized business environment.

Empirical Review and Hypothesis Development

Control Environment Practices on Fraud Management

Recent studies have shown the critical role of control environment practices in managing fraud risk. For instance, Adebayo and Ogunleye (2022) argue that a robust control environment, characterized by effective leadership, ethical standards, and clear organizational values, significantly reduces opportunities for fraudulent activities in firms. They emphasized that a culture promoting transparency and accountability helps in curbing unethical behavior and fostering trust within organizations. Similarly, Akinmoladun and Odebiyi (2023) highlight that the presence of a strong internal control framework, including proper segregation of duties and an active role of the board in overseeing financial practices, enhances the detection and prevention of fraud. The study by Olayemi et al. (2024) affirms that the effectiveness of control environment practices is contingent upon the commitment of senior management to ethical behavior, along with continuous employee training on anti-fraud policies. Furthermore, in the context of Nigeria's manufacturing sector, Ibrahim and Oloruntoba (2023) found that firms with a well-established control environment were less likely to experience fraudulent financial reporting, demonstrating the direct impact of these practices on fraud management. Based on the review, the below hypothesis id formulated: *H01: Control environment has significant effect on fraud management in deposit money banks in Nigeria.*

Monitoring Practices on Fraud Management

Monitoring practices are integral to fraud prevention and detection. A study by Akintoye and Adewale (2022) demonstrated that continuous monitoring of financial transactions, regular audits, and internal controls are vital in reducing fraud risk. These practices allow for the early identification of red flags and provide timely corrective actions.

According to Fadeyi and Oloyede (2023), the implementation of automated monitoring systems, such as data analytics and forensic auditing tools, has proven effective in detecting irregularities that traditional manual audits may miss. They further suggest that organizations with a well-established monitoring structure tend to have lower incidences of fraud. A comprehensive monitoring approach that includes oversight from both internal and external auditors has also been linked to higher levels of fraud deterrence (Adeyemi & Oni, 2024). Additionally, monitoring practices play a significant role in reinforcing the ethical culture within an organization, ensuring adherence to anti-fraud policies. As confirmed by Olatunji (2023), firms that incorporate a blend of proactive monitoring and regular audit reviews tend to report fewer fraud-related cases. Based on the review, the below hypothesis id formulated*: H02: Monitoring has significant effect on fraud management in deposit money banks in Nigeria.*

Information and Communication Practices on Fraud Management

The role of information and communication in fraud management has been increasingly recognized in recent studies. According to Adeoye and Olagunju (2023), effective communication channels within an organization help in disseminating anti-fraud policies, ethical guidelines, and reporting mechanisms, ensuring that employees at all levels are aware of potential fraud risks and how to report them. Similarly, research by Babajide and Salawu (2024) highlights that the integration of modern information technology, such as secure communication platforms and automated reporting systems, has enhanced fraud detection by allowing employees to report suspicious activities discreetly. The study by Omolade et al. (2022) underlines the importance of transparency in organizational communication to promote accountability and trust, which, in turn, deters fraudulent behavior. Furthermore, Alabi and Durojaiye (2023) emphasized that organizations with effective information systems and clear communication structures experience more timely detection of fraud and better fraud management overall. This aligns with the view that open channels for internal reporting, coupled with management's prompt response to fraud alerts, are critical to an effective fraud management strategy. Based on the review,

The below hypothesis id formulated:
H03: Information and communication has no significant effect on fraud management in deposit money banks in Nigeria.

Underpinning Theory: Fraud Pentagon Theory

The Fraud Pentagon Theory, developed by Wolfe and Hermanson (2004), expands upon the classic Fraud Triangle by adding two additional factors: capability and rationalization. This theory is highly relevant to the above discussions on control environment practices, monitoring, and information communication in fraud management. According to the theory, fraud is more likely to occur when an individual has the opportunity (control environment), a perceived need (monitoring), and the ability (capability) to commit fraud without being detected. Recent studies emphasize that a strong control environment limits the opportunity for fraud, aligning with the fraud pentagon's premise that effective internal controls reduce the chances of fraud (Olatunji, 2023). Additionally, monitoring practices reflect the theory's focus on the opportunity aspect, as effective monitoring systems allow for the timely detection of fraudulent activities, thereby reducing the risk. Information and communication practices directly relate to rationalization, as transparent communication and clear ethical guidelines help individuals justify their behavior and deter the rationalization of fraudulent acts (Babajide & Salawu, 2024). Thus, the Fraud Pentagon Theory provides a comprehensive framework to understand the factors that influence fraud within organizations and underscores the importance of control, monitoring, and communication practices in mitigating fraud risk.

Research Framework

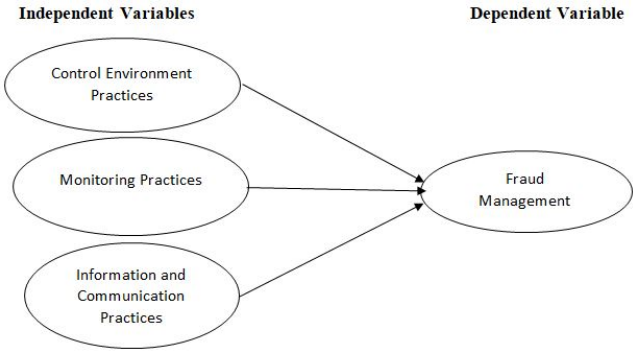

Figure 1: Research Framework

3. Methodology

Research Design

This study adopts a descriptive research design, as it is valuable for understanding characteristics of specific phenomena. Descriptive research provides a clear picture of the current status of a situation, making it suitable for investigating how internal auditing practices influence fraud management (Creswell, 2014). A cross-sectional design was employed to examine relationships between variables at a specific point in time, which, as Bryman (2016) highlights, is appropriate for identifying correlations without manipulating variables.

Population, Sample and Sampling Techniques

The study's population comprises all 1,867 top management and managers from the fifteen deposit money banks listed on the Nigeria Exchange Group (NXG) as of 2023. The sample size was determined using Taro Yamane's (1967) formula for finite populations:

Where:

N = Sample size

N = Population size (1,867)

E = Significance level (0.05 or 5%)

Using this formula, the calculated sample size is:

To account for attrition, an additional 10% was included, resulting in a total sample size of 440 respondents.

Method of Data Collection, Technique of Data Analysis and Model Specification

A self-structured questionnaire was utilized for data collection due to its efficiency in gathering responses within a short period. This method also allowed the researcher to clarify any ambiguities in the questions directly to the respondents. Data were analyzed using descriptive statistical tools, including tables, frequencies, and percentages, as well as inferential statistical tools, specifically Partial Least Squares Structural Equation Modeling (PLS-SEM). The structural model used in this study is designed to measure the effect of the internal control system on fraud management in deposit money banks in Nigeria.

Primary data collection was employed to gather first-hand information directly from respondents. The closed-ended questionnaire was deemed suitable for quantitative research, as it enables reaching a large number of respondents efficiently.

Measurement of Variables

Latent variables were measured using ordinal scales with five items each. The sources are:

Fraud Management: Kingsley (2015); Kratcoski (2018); Omonyemen et al. (2017).

Control environment: Nguyen & Ha (2010); Vu (2016).

Monitoring Activities: Asiligwa & Rennox (2017); Yakubu et al. (2017).

Information and Communication: Asiligwa & Rennox (2017) and Yakubu et al. (2017)

4. Results and Discussions

The data collected with the aid of closed-ended structured questionnaire are presented in the tables below. The total number of questionnaires returned, from the 440 administered to respondents are 407 giving a response rate of 93%. Hence, all further analyses were conducted using the 407 valid responses received

Table 4.1: Descriptive Statistics

Variable	Mean	Median	Min	Max	SDV	Kurtosis	Skewness
FM	3.76	4.00	1.00	5.00	1.20	0.21	-1.02
CE	3.74	4.00	1.00	5.00	1.17	-0.05	-1.31
IC	3.68	4.00	1.00	5.00	1.06	0.57	-0.92
MA	3.62	4.00	1.00	5.00	1.28	0.55	-0.68

Source: SmartPLS Output, 2024.

The descriptive statistics in Table 4.1 present key measures of central tendency, dispersion, and distribution for the variables FM, CE, IC, and MA. All variables have similar mean values (ranging from 3.62 to 3.76) and medians of 4.00, indicating a general tendency toward higher ratings on a 5-point scale. The standard deviations (SDV) range from 1.06 to 1.28, showing moderate variability in responses. Kurtosis values are near zero for all variables, suggesting a distribution close to normality, while the negative skewness indicates a slight tendency for responses to cluster toward higher values. Specifically, CE shows the highest skewness (-1.31), implying a stronger inclination toward favorable ratings in this variable.

The means and medians suggest that participants generally perceive these constructs (FM, CE, IC, and MA) positively, which could signal effective processes or mechanisms in these areas. The moderate variability and near-normal kurtosis indicate balanced responses, enhancing the reliability of subsequent inferential analyses. The negative skewness, particularly for CE, suggests the need to investigate why respondents consistently rated this aspect highly—potentially reflecting strong competence or favorable bias. These statistics confirm that the dataset is robust, making it suitable for further structural equation modeling in SmartPLS.

Table 4.2: Reliability of study scale

S/N	Variables	Items	Factor Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted (AVE)	No of Items
1	Fraud Management (FM)	FM2 FM3 FM4 FM5	0.925 0.887 0.934 0.945	0.942	0.958	0.852	4
2	Control Environment (CE)	CA1 CA2 CA3 CA4	0.875 0.905 0.876 0.706	0.862	0.907	0.712	4
3	Monitoring Activity (MA)	MA1 MA2 MA3 MA4 MA5	0.846 0.886 0.908 0.841 0.892	0.923	0.942	0.766	5
4	Information and Communication (IC)	IC1 IC2 IC5	0.902 0.915 0.853	0.869	0.920	0.793	3

Source: SmartPLS Output, 2024

The table presents the reliability analysis of various study scales based on different variables: Fraud Management (FM), Control Environment (CE), Monitoring Activity (MA), and Information and Communication (IC). Key metrics such as factor loadings, Cronbach Alpha, Composite Reliability, and Average Variance Extracted (AVE) are provided.

Fraud Management (FM): With factor loadings ranging from 0.887 to 0.945 and a high Cronbach Alpha (0.942), the scale demonstrates strong reliability and consistency. The Composite Reliability (0.958) and AVE (0.852) further confirm the scale's validity in measuring fraud management.

Control Environment (CE): Factor loadings are slightly lower, especially for item CA4 (0.706), but still acceptable. Cronbach Alpha (0.862), Composite Reliability (0.907), and AVE (0.712) suggest that the scale is reliable with a moderate level of validity, though item CA4 may require attention.

Monitoring Activity (MA): The scale has high factor loadings (0.841 to 0.908) and excellent reliability indicators, with Cronbach Alpha (0.923) and Composite Reliability (0.942) showing strong internal consistency. The AVE (0.766) is also well above the acceptable threshold, indicating robust construct validity.

Information and Communication (IC): With factor loadings ranging from 0.853 to 0.915, the scale also demonstrates good reliability and validity. The Cronbach Alpha (0.869), Composite Reliability (0.920), and AVE (0.793) further affirm the scale's effectiveness in measuring information and communication. The findings suggest that all four variables exhibit high reliability, but special attention may be needed for the Control Environment scale, particularly item CA4. The strong reliability and validity of the other scales imply that they are suitable for further analysis in the context of the study, ensuring meaningful results in the research.

Table 4.3: Heterotrait-Monotrait Ratio (HTMT) Criterion

Construct	Control Environment	Fraud Management	Information and Communication	Monitoring Activity
Control Environment	1.000			
Fraud Management	0.355	1.000		
Information and Communication	0.462	0.462	1.000	
Monitoring Activity	0.432	0.421	0.421	1.000

Source: SmartPLS Output, 2024

The Heterotrait-Monotrait Ratio (HTMT) criterion measures the discriminant validity between constructs, where a value below 0.85 suggests adequate differentiation between them.

Control Environment vs. Other Constructs: The HTMT values (0.355, 0.462, 0.432) between the control environment and other constructs suggest a Moderate level of correlation. This implies that while there is some relationship, the constructs are sufficiently distinct, reinforcing the unique role of the control environment in organizational structures.

Fraud Management and Other Constructs: The HTMT value of 0.462 with the control environment and information and communication indicates a somewhat higher correlation, which suggests that fraud management shares conceptual overlaps with these constructs. This could imply that fraud management is closely linked to the organizational controls and communication systems.

Monitoring Activity: The values (0.432 with control environment and 0.421 with fraud management and information and communication) suggest that monitoring activities are moderately correlated with the other constructs. However, the correlation is not strong enough to undermine the distinctiveness of monitoring activity as a separate construct. The relatively low HTMT values below the 0.85 threshold suggest that the constructs in this study (Control Environment, Fraud Management, Information and Communication, and Monitoring Activity) are distinct, with moderate overlaps. This has positive implications for ensuring that each construct contributes independently to improving audit quality and organizational governance without excessive redundancy.

Test of Hypotheses

Table 4.4 shows the path coefficient of the regression results using SmartPLS. This is the result for testing the five hypotheses of the study.

Table 4.4: Path Coefficient of the Model

Hypotheses	Beta	T Statistics	P Val.	Decision	f2
H01: Control Environment -> Fraud Management	0.177	2.023	0.043	Accepted	0.029
H02: Information and Communication -> Fraud Management	0.122	2.123	0.034	Accepted	0.018
H03: Monitoring Activity -> Fraud Management	0.494	6.918	0.000	Accepted	0.236

Source: SmartPLS Output, 2024

The results in Table 4.4 provide insights into the impact of control environment, information and communication, and monitoring activity on fraud management in the context under study.

Control Environment: With a beta value of 0.177, T-statistics of 2.023, and a p-value of 0.043, the hypothesis is accepted, indicating a significant positive relationship between the control environment and fraud management. However, the effect size (f^2 = 0.029) suggests a small contribution to the model. This implies that while the control environment is important in mitigating fraud, its influence is relatively limited, emphasizing the need for strengthening this component.

Information and Communication: The beta value of 0.122, T-statistics of 2.123, and a p-value of 0.034 confirm a significant positive relationship with fraud management. The small effect size (f^2 = 0.018) indicates that while this factor contributes to fraud management, its role is less substantial compared to others. This highlights the importance of enhancing effective communication systems and timely information dissemination to improve fraud management.

Monitoring Activity: With the highest beta value (0.494), T-statistics (6.918), and a p-value of 0.000, monitoring activity shows the strongest and most significant positive relationship with fraud management. The large effect size (f^2 = 0.236) demonstrates its critical role in reducing fraud. This underscores the need for robust monitoring mechanisms and continuous oversight in organizational processes. These findings suggest that organizations should prioritize enhancing monitoring activities as a core strategy for fraud management. While the control environment and information/communication systems are important, their relatively lower contributions indicate the need for further development and integration into broader fraud prevention frameworks. Organizations should invest in technologies and training to strengthen these components, creating a comprehensive and effective approach to fraud management.

Table 4.5: R2 and Predictive Relevance of the Model

Endogenous Variables	R2	Q^2 (=1-SSE/SSO)	P Val.
Fraud management	0.810***	0.798	0.000
	Source: SmartPLS Output, 2024		

The Q^2 values derived through the predictive sample reuse technique (Chin et al., 2008) provide insights into the predictive relevance of a PLS-path model. By applying the blindfolding procedure, Q^2 measures how effectively the model can empirically reconstruct data using its parameters.

The guideline states that Q^2 values greater than zero indicate predictive accuracy, while values below zero suggest a lack of relevance. Furthermore, thresholds of 0, 0.25, and 0.5 classify predictive relevance as small, medium, and large, respectively. In the context of this study, the Q^2 values for the endogenous variables in Table 4.5 demonstrate large predictive relevance. This implies that the structural model is highly effective in predicting the respective constructs. These findings strengthen the credibility and robustness of the model, suggesting it can be reliably used for decision-making and theoretical applications in the context of the study.

Collinearity Test

In addition to assessing the structural relationships, collinearity was examined to make sure it does not bias the regression results. This was done using the Variance Inflation Factor (VIF). VIF values above 5 are indicative of probable collinearity issues among the predictor constructs, but collinearity problems can also occur at lower VIF values of 3 to 5 (Becker et al. 2013). Ideally, the VIF values should be close to 3 or lower. If collinearity is a problem, a frequently used option is to create higher order models that can be supported by theory (Hair et al., 2016).

Table 4.6: Inner VIF Values of the Model

Variables	Performance
Control Environment	2.713
Information and Communication	3.002
Monitoring	3.143

Source: SmartPLS Output, 2024

The inner VIF values presented in Table 4.6 indicate the multicollinearity levels among the independent variables in the model. A VIF value below 5 suggests an acceptable level of multicollinearity, which ensures reliable and unbiased regression coefficients.

Control Environment (VIF = 2.713): This value indicates a moderate but acceptable multicollinearity level, suggesting the variable contributes uniquely to the model without excessive overlap with other predictors.

Information and Communication (VIF = 3.002): With a slightly higher VIF, this variable still demonstrates acceptable multicollinearity, meaning it provides distinct explanatory power in the model.

Monitoring (VIF = 3.143): This is the highest VIF among the variables but remains within the acceptable threshold, indicating its unique contribution to the model is not significantly influenced by multicollinearity. The VIF values confirm the absence of severe multicollinearity, ensuring the robustness of the model and the validity of the results. This allows for accurate interpretation of the relationship between the independent variables and performance. Practically, these findings suggest that efforts to enhance control environment, information and communication, and monitoring systems can independently contribute to improving performance in the given context.

5. Summary

This research focuses on the role of internal control attributes such as control environment, monitoring, and communication practices in combating fraud in Nigerian Deposit Money Banks. The study underscores the vulnerability of banks to advanced fraud schemes and emphasizes the importance of a strong control environment and continuous monitoring. The findings suggest that while all control components contribute to fraud management, monitoring activities are particularly effective. The study also reveals a need for improved communication systems to enhance fraud detection and prevention. Employing descriptive analysis and structural equation modeling, the research highlights the critical role of robust internal controls in ensuring financial stability and protecting stakeholders' interests.

6. Conclusion

The study concludes that internal control attributes significantly influence fraud management in Nigerian Deposit Money Banks. Monitoring activities emerge as the most effective, followed by the control environment and communication systems. These findings demonstrate the necessity of a comprehensive internal control framework to address the growing complexity of fraud risks in the banking sector. Effective internal controls not only mitigate fraud risks but also enhance operational efficiency, financial stability, and stakeholder trust.

Recommendations

1. Banks should invest in automated monitoring systems, such as data analytics and machine learning, to improve fraud detection and prevention.
2. Senior management should foster a culture of transparency, ethical behavior, and accountability to reduce opportunities for fraud.
3. Organizations must establish secure and efficient communication channels to disseminate anti-fraud policies and encourage reporting of suspicious activities.
4. Regular training programs on internal control procedures and fraud awareness should be conducted to equip employees with the skills to identify and prevent fraud.
5. Adoption of advanced technologies like blockchain and AI can further enhance the robustness of internal control systems, ensuring better fraud management outcomes.

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