Forensic Risk Assessment and Fraud Detection in Nigerian Listed Firms

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ABSTRACT

This study investigates the impact of risk assessment on fraud detection in Nigerian listed companies. Fraudulent activity seriously threatens the existence of corporations, the transparency of their financial statements, and the trust of investors. Due to the growing complexity of corporate fraud, risk assessment has emerged as a crucial tool in its detection. The study used statistical methods and a quantitative research design. The finding indicate that risk assessment and fraud detection are significantly correlated, suggesting that using forensic risk assessment tools improves the capacity to detect and stop fraud. The findings highlight how important it is for businesses to incorporate forensic risk assessment into their risk management plan. Future research might evaluate various regulatory and anti-graft agencies and examine industry-specific risk assessment tools.

Keywords: forensic risk assessment, fraud detection, transparency, regulatory compliance, audit

INTRODUCTION

Globally corporate scandals have become a regular occurrence and Nigeria is not exempted. Its long-term consequences include loss of confidence in the capital market, capital flight, loss of reputation, loss of employment, jail terms and dismissal for culprits. In the United States, companies engaged in accounting fraud caused $74 billion in losses for their stockholders, which ultimately damaged their reputations and led to bankruptcy (Beasley et al.,2010). Beyond these losses, fraud has comprehensive negative consequences as it undermines confidence between institutions and Nations. In African Continent, foreign assistance funds were embezzled in seven African nations (Nigeria, Mozambique, Guinea, Zambia, Kenya, the Central African Republic, and the Kingdom of Eswatini (previously Swaziland), was exposed in a report released by the Global Fund (2019). Recent reports by Smile ID (2025) and Obiokafor (2024), indicate a significant rise in fraud across African continent, particularly in identity and cyber fraud. The report further highlights East Africa with high fraud rejection rate, while another report from Sumsub (2024) revealed an average year-over-year fraud rate growth of 167% with Niger, Angola and South Africa leading the continent with identity fraud rate growth of over 300%. These trends are driven by factors like evolving fraud tactics, "fraud as a service" models, and the increasing use of fraudulent identity documents. These reports highlight the ever-growing threat of deep fakes and the urgent need for robust forensic risk assessment measures to mitigate fraud. The need for more robust forensic accounting services is necessitated by the growing demand for professionals prompted by the ever-increasing incidence of corporate fraud worldwide. In addition to auditors' inability to identify, prevent, or mitigate contemporary scams such as embezzlement, money laundering, security fraud and contract disparage. Available data from the Nigeria Interbank Settlement System (NIBSS 2022), the volume and the incidence of fraud are not declining, nearly fourfold rise was recorded in the volume of fraudulent activity between the years 2019 and 2021. Although artificial Intelligence might be the potential solution, many challenges exist, like high costs, insufficient resources, lack of trained professionals, and insufficient systems. The failure of conventional auditing to yield expected result, despite their professional manner is another issue of concern in the industry. In many instances, Auditors have been accused of facilitating creative corporate reporting (Otusanya & Lauwo, 2023). Hence the growing need for forensic accounting services (risk assessment) to strengthen the fraud detection mechanism in listed firms is considered as the only potential solution (Ogutu & Ngahu, 2016). The need for forensic risk assessment to trace the measure areas of intervention in fraud mitigation is necessary.

Therefore, the term "forensic risk assessment" refers to an attempt to predict the likelihood of future criminal behaviour to identify individuals who require professional intervention. In line with the above, Maidarasu et al. (2025) believed that forensic expert in risk assessment relies on a number of specialized tools, such as data analysis software, digital ledger examination software, and forensic imaging tools, to extract, interpret, and analyze financial information to gather evidence against the perpetrators of fraud. Hence, the ability to effectively and efficiently use these tools can make a substantial value addition in the outcome of any fraud investigation or legal proceedings where necessary (Maidarasu et al.,2025).

According to Kranacher and Riley (2019) 'Risk factors includes fraud risk, compliance risk, operational risk, strategic risk and reputational risk'. Similarly, in financial investigation common risk factors includes: inadequate documentation, unusual transactions, inconsistent financial reporting, weak internal control, regulatory violation and economic pressure (Singleton 2018; Silverstone & Sheetz 2018; COSO 2013; Porter 1980; and Aula 2020). In risk evaluation, forensic expert employed a range of instruments, such as digital ledger analysis software, forensic imaging software, and data analysis software. To find possible fraudulent activity, they also use methods like data mining, Benford's Law analysis, and financial ratio. Risks may also be evaluated and managed with the use of instruments such as the failure modes and effects analysis (FMEA), decision tree, and risk matrix. Additionally, various techniques for risk mitigation include: quantitative method, qualitative approaches, risk scoring and risk mapping (Kranacher and Riley 2019). The application of any of these instruments depend largely on the nature of risk, firm's specific characteristic and data availability.

Empirical evidence shows that the economic progress and infrastructural development of Nations have been impeded by fraud, which has also resulted in the bankruptcy of numerous businesses. This was largely due to failure of statutory audit. However, forensic risk assessment in the fight against fraud plays a critical role by providing necessary instrument and skills needed in risk analysis towards identifying, preventing, or mitigating the misappropriation of funds in Nigerian companies. Further research in the developed economies equally shows that forensic risk assessment provides a framework for decision making by providing evidence-based data and developing successful programs that promotes consistency to lessen potential bias and eventually reduced the likelihood of recidivism. Despite these findings, there is limited research on forensic risk assessment and fraud detection in Nigeria. Though prior studies focused on forensic accounting as a broad area without extracting the valued contributions of forensic risk assessment tools in fraud detection. Therefore, this literature gap necessitates the complete review of forensic risk assessment and its efficacy in identifying fraudulent financial practice in the Nigeria listed firms.

However, forensic risk assessment is becoming relevant in corporate fraud detection, particularly in the wake of corporate scandals that have become a regular occurrence worldwide, which undermines confidence between investors, institutions and Nations, In Nigeria the establishment of antigraft agencies have showcase the pivotal role of forensic accounting expert in mitigating fraud within the Country, but a number of challenges affect the full integration forensic risk assessment tools into practice. This has further increased the risk of under detection of fraud in our Financial Sector (Adegbite et al., 2024).

Considering the crucial role of forensic risk assessment in fraud detection, and the rapid transformation of fraud landscape fuelled by the emergence of increasingly sophisticated threat actors and technological advancements, this study will investigate the impact of risk assessment on fraud detection in Nigerian listed companies. The study seeks to bridge the contextual gap in the literature as well as the theoretical gap by combining Fraud Diamond Theory (FDT) and Risk-Need-Responsivity (RNR) Model in its methodology. The findings will provide empirical evidence on the application of forensic risk assessment in fraud detection, by providing insight for Forensic expert, regulatory bodies, Auditor/ Practitioners, and stakeholders in Nigeria.

LITERATURE REVIEW

Concept of Forensic accounting

The complexity of financial fraud and economic crimes across the globe has increased the demand for an effective and efficient forensic accounting service tool that will mitigate the impact of fraudulent activities in listed firms. Forensic accounting as the application of accounting concepts and procedures to the resolution of legal issues. The purpose of reporting fraud is to hold perpetrators accountable and preserve the record for

potential use in administrative or judicial proceedings. Dhar and Sarkar (2010). The field of forensic accounting employs investigative and financial accounting skills that are acknowledged by the legal system to settle disputes arising from public and criminal actions (Manning, 2010).

Okoye and Gbengi (2013) concluded that forensic accounting is the practice of applying knowledge of accounting, auditing, and investigation to a legal setting. Both litigation services and investigative tools make use of forensic accounting knowledge and, in certain cases, trial evidence to recognize accountants' expert consultant status. They also reemphasized that forensic accounting may require advanced auditing, accounting, finance, law, and research knowledge. It also requires comprehending and presenting results and the qualitative skills needed to gather, analyze, and evaluate financial evidence.

Concept of Fraud Detection

The primary objective of fraud detection in an organisation is to promptly identify instances of fraudulent behaviour. Maidarasu et al. (2025). When fraud prevention measures are ineffective, the next step is fraud detection. In reality, fraud detection has to be constantly implemented since it is usually hard to tell whether fraud protection has been unsuccessful. It involves identifying and addressing instances of fraudulent activity within an organization. It is integral to any anti-fraud programme because it can help minimize the financial losses associated with fraud and deter future fraudulent activity. Fraud detection is used to determine the likelihood of fraud in an entity. When it comes to fraud and misappropriation, KPMG (2016) states that communication is key. The purpose of a whistleblowing system is to assist the employee in reporting fraud, auditing and supervisory actions. Fraud can often be identified through complaints from other workers or outside parties and might be discovered by coincidence (Greenlee, 2007).

The Companies and Allied Matters Act (2020) mandates, under Section 359, that all companies listed on the Nigeria Exchange Group (NGX) must establish efficient audit committees, offer sufficient means for effective whistleblowing mechanisms and ensure sound internal control systems. These are some of the fraud detection mechanisms provided by the Act. Therefore, it is the responsibility of management to establish and maintain sufficient procedures, such as audit committees, whistleblowing policies, and internal control systems, to detect and prevent financial irregularities and fraud in accordance with the Act. These procedures have proven effective even in the most intricate cases of fraud.

Fraud detection can be accomplished through various methods, including but not limited to data analysis to detect irregularities and trends of fraudulent conduct which include evaluating transaction for unusual volumes, identify potential areas of vulnerability and ensure that internal controls are being followed effectively towards uncovering suspicious activity. Adaptive, responsive, and ever-evolving fraud detection technologies are necessary to keep up with the ever-changing risk environment. While preventive controls are obvious and easy to spot, detective controls may be subtler and work in the background (John & Rudesill, 2010).

Concept of Forensic Risk Assessment

Forensic risk assessment is regarded as an attempt to predict the likelihood of future criminal behaviour relying on a number of specialized tools. Risk assessment process involves finding potential dangers in the workplace, weighing the risks associated with those dangers, and then taking reasonable steps to eliminate or lessen those risks. (Albrecht et al., 2012). The major objective of FRA is to assess the level of risk that a person might pose and the likelihood that the behaviour will be repeated. It is mainly used for perpetrators of crime. It details the procedure for finding potential dangers, studying them, and deciding how serious they are (risk analysis and evaluation). Forensic risk assessment was defined to mean literature that was concerned with calculating the probability that antisocial behavior or criminal, violent, or sexual offending will occur (Kemshall, 1996).

The importance of fraud risk factors was explored in SAS 99 which signal the occurrence of fraud and substantial financial mismanagement (AICPA 2002). The risk elements identified include incentive or pressure, opportunity, and attitude or justification. Basically, forensic risk assessment is directly related to uncovering falsified financial documents and tracking the funds flow. The importance of fraud risk factors was explored in SAS 99, which signals the occurrence of fraud and substantial financial mismanagement (AICPA 2002). The risk elements identified include incentive or pressure, opportunity, and justification (Hooper and Pornelli 2010;

Brumell 2015). Basically, forensic risk assessment is directly related to detecting fraudulent acts in financial statements. This assertion is in line with contribution of Albrecht et al. (2006), Olukowade and Balogun, (2015).

Forensic Risk Assessment and Fraud Detection

An evaluation of the possibility of future antisocial behaviour is known as a forensic risk assessment (Singh, 2012). The process of identifying, assessing, and ranking possible fraud and financial irregularity within an organisation is known as forensic risk assessment. It provides a clear direction for effectively focusing investigative efforts and allocating resources to the riskiest areas. In line with the views of Ganapathy (2024), Risk assessment can also be viewed as a critical procedure that entails finding, assessing, and prioritizing suspected fraud and financial irregularities in an organisation. This procedure is critical for properly focusing investigation efforts and allocating resources to the greatest risk area (Ganapathy 2024).

In conducting a fair risk assessment, it is essential to systematically examine various potential risk factors and protective factors (such as biological, psychological, or sociological traits that drive the probability of antisocial behaviour, as well as physical, psychological, or sociological elements) that mitigate the likelihood of such behaviour (Andrews & Bonta, 2010). Experts in the criminal justice system often rely on risk assessment tools to predict the likelihood of an offender reoffending and to facilitate early interventions (Singh et al., 2011).

Forensic accountants use various tools like data analysis software, forensic imaging software, and digital ledger analysis to identify potentially fraudulent activities. Techniques like data mining, Benford's Law research, and financial ratios are also used. Risk assessments and control methods like the risk matrix, and decision tree, depend on the risk type and data availability. These tools categorize offenders into different risk levels, ranging from low to high, based on their probability of recidivism. Interventions are then tailored to the offender's risk level and specific needs in order to reduce the chances of reoffending.

Fraud Diamond Theory

David T. Wolfe and Dana R. Hermanson suggested the Fraud Diamond Theory in 2004 as an expansion of Donald Cressey's well recognised Fraud Triangle Theory of 1953. The theory is relevant in forensic risk assessment for fraud detection in Listed forms in Nigeria as it was built on the earlier Fraud Triangle Theory by adding a fourth crucial element to provides a framework for understanding the fundamental factors that drive fraudulent activity and assist the researcher in finding the relationship between the elements in the theory and fraud detection strategies. Maidarasu et al. (2025).

While the Fraud Triangle includes three components pressure (or incentive), opportunity, and rationalization Wolfe and Hermanson extended it by adding "capability". Wolfe and Hermanson (2004) emphasized that fraud is unlikely to happen if capability is absent, even when the other three factors are present. Capacity, according to Aigienohuwa et al. (2017), is "the possession of relevant traits and the ability to turn such an opportunity into a reality," so it's essential to be well-versed in the internal control system and aware of vulnerabilities that fraudsters may exploit.

Capability is influenced by factors such as a person's role within the organization, intelligence, self-confidence, personal drive, dishonesty, and the ability to manage stress. Supporting this, Mackevicius and Giriunas (2013) noted that even when someone has the motive and the chance, they might still not commit fraud if they lack the skill to execute it or cover it up. This makes capability particularly important in cases of large-scale or long-term fraud. In the same vein, Albrecht et al. (1995) stated that only individuals with very high levels of capability can understand internal control systems, detect weaknesses, and use that knowledge to plan fraudulent actions. Wilson (2004) also pointed out that rationalization and capability are interconnected, with each element influencing the strength of the others. Relatedly, Wolfe and Hermanson's (2004) is of the view that fraud diamond theory addressed a vacuum in the literature by expanding the fraud triangle with a fourth dimension, "capability,"

FDT has a number of contributions in fraud detection process by improving detection mechanisms. The detection mechanism assists in developing forensic risk assessment procedures that consider the technical knowledge necessary for concealing fraud. Using the Regulatory Implications; the Fraud Diamond provides

insights that regulatory agencies such as the Financial Reporting Council of Nigeria (FRCN) and the Securities and Exchange Commission (SEC) may use to boost their compliance enforcement and surveillance efforts. Empirically, Current research on fraud detection in Nigeria's listed firms benefitted from the Fraud Diamond by offering an enhanced theoretical framework for exploring forensic risk assessment. The theory provides an expanded account of fraud beyond the usual Fraud Triangle theory. Utilising FDT in forensic risk assessment improves fraud detection efforts by considering the individuals' capabilities, thereby enhancing the efficacy of forensic investigations in Nigerian listed companies.

Risk-Need-Responsivity (RNR) Model

The RNR model was established by Donald Andrews and James Bonta in the 1990s. It was formally introduced in the book "The Psychology of Criminal Conduct" by Andrews and Bonta in 1994 (with subsequent revisions). Their work built upon earlier research and theories in criminology and psychology. This model is a widely used framework for assessing and managing offender risk and as applied in various settings, such as correctional facilities (assess and manage offender risk, develop treatment plans, and reduce recidivism), forensic psychology (to inform risk assessments, treatment planning, and management of individuals with mental health issues or violent behavior), probation and parole [where it is used to guide supervision and intervention strategies] (Olver, 2011). According to Andrews & Bonta (2010), the model has made significant contributions to the field of forensic in the area of improved risk assessment, targeted intervention, enhanced treatment effectiveness and reduced recidivism (Dowden & Andrews 2000, Andrews et al, 1990)

Despite the above contributions of this model, some of its basic limitations includes; Overemphasis on risk assessment (i.e. potential neglect of individual needs and circumstances), partial consideration of protective factors (focus on risk factors might overlook strengths and resilience) and Cultural sensitivity concerns (potential biases in assessment tools and interventions). Critic to the theory emphasizes its Overly rigid application (which may not fully account for individual differences), inadequate consideration for complex cases (which might not completely address complex cases involving metal health or trauma issues) and finally, the model requires continuous validation and revalidation to guard its effectiveness (Dowden & Andrews, 2000).

Hence, this study adopts the model as it advanced the field of forensic by providing a complete framework for effective risk assessment, effective intervention and management strategy thereby providing a structural approach to improve the accuracy of risk assessments.

METHODOLOGY

.This study adopted survey research to examine the relationship between forensic risk assessment and fraud detection in Nigerian listed companies. The survey approach facilitates the collection of structured data from individuals or groups of individuals. A survey research approach is suitable for gaining a deeper understanding of respondents' attitudes, actions, and experiences with forensic accounting services. Survey research is useful in obtaining quantitative data that may be statistically examined to identify trends and connections (Creswell and Creswell 2018). Furthermore, this methodology is suitable for investigating financial fraud detection and forensic accounting services (Saunders et al., 2019).

Population of the study

The study's population consisted of all 168 listed firms on the Nigerian Exchange Group (NGX) in 11 different sectors. They include natural resources, oil and gas, consumer goods, financial services, ICT, industrial goods, construction/real estate, agriculture, conglomerates, health, and services sectors (Nigeria Exchange Group, 2024). this coincide with prior study by Kumo et al. (2023;2024) that uses all sectors of the NGX to determine its population. Due to the diversity of these industries across sectors, a representative sample was adopted to allow generalisation and guarantee that the results are applicable to the entire population.

Table 1: Target Population

Listed Sectors (a)	Number Per Sector (b)	Proportionate No. Selected (c)	No. of Respondents per Firm (d)	No. of Respondents per Firm {e= (c*d)}
Natural Resources	4	1	5	5
Oil and Gas	9	2	5	10

Consumer Goods	21	4	5	20
Financial Services	49	10	5	50
ICT	9	2	5	10
Industrial Goods	13	3	5	15
Construction/Real Estate	8	2	5	10
Agriculture	5	1	5	5
Conglomerates	6	1	5	5
Health,	7	2	5	10
Services	23	5	5	25
Total		**33**		**165**

Source: Developed by the researchers, 2025.

Method of Data Collection

The study used primary data through a structured questionnaire adapted from Kirui (2019). Structured questionnaires have been recognised as an effective tool for gathering data, particularly when addressing complex issues. This method has been chosen for its efficiency, consistency, and ability to capture comprehensive responses from participants. Owino (2013) has highlighted that structured questionnaire are preferred because they typically result in higher response rates due to their clarity and brevity. The instrument has been tailored to gather responses that can be analysed in quantitative manner (Zikmund et al., 2021). The questionnaire related to the use of forensic accounting services were designed to capture variables including forensic risk assessment and its impact on fraud detection across the selected firms in Nigeria.

Techniques for Data Analysis and Model

The study applied both descriptive and inferential statistical approaches. Descriptive statistics were employed to analyse the demographic characteristics of respondents and the overall trends in forensic risk assessment and fraud detection. Regression analysis and other inferential statistical techniques were used to examine the relationship between fraud detection and forensic accounting services. As with other studies that have employed comparable methodologies in financial fraud research, regression analysis was performed to establish the significance of forensic risk assessment in identifying fraud (Albrecht et al., 2019). To guarantee validity and robustness, the data were interpreted according to recognised statistical significance criteria ($p < 0.05$) (Hair, Black, Babin, & Anderson, 2018).

The regression model for this study is specified as follows:

$$\text{Log} \left[\frac{P(Y \leq j)}{P(Y > j)} \right] = (\alpha_j + \beta_1 \text{TFDA-IV1} + \beta_2 \text{TFRA-IV2} + \varepsilon \ldots) \ldots\ldots 1$$

Where:

FRD = Fraud Detection and **FRA** = Forensic risk assessment,

Y represents the fraud detection outcome.

α_j is the threshold parameter (cut-off points) for the categories of the dependent variable.

β1, β2, are the coefficients of the independent variables. **ε** = Error Term

This model supports earlier studies by showing how forensic services affect fraud detection (Ozili, 2022; Maidarasu et. al 2025).

Analysis, Result and Discussions

An overview of the study's variables' frequency distributions, dispersion metrics, and central trends is given in this section. A detailed presentation of each Likert-scale variable's median, interquartile, and frequency distributions is provided. The descriptive statistics for the variables are compiled in the tables that follow,

displaying the skewness, kurtosis, median, mean, standard deviation, and each of the Likert-scale variables that were employed in the analysis.

Table 2: Descriptive Statistics

Variable	Median	Mean	Std. Dev.	Skewness	Kurtosis
FRA	16	15	3.97	-0.07	2.32
FRD	14	15.03	3.85	0.88	2.96

NB: FRA: Forensic Risk Assessment, FRD: Fraud Detection

TFRA-IV2	Frequency	Percent	Cumulative Percent
8	1	3.33	3.33
9	1	3.33	6.67
10	1	3.33	10.00
11	2	6.67	16.67
12	2	6.67	23.33
13	1	3.33	26.67
14	2	6.67	33.33
15	4	13.33	46.67
16	2	6.67	53.33
17	4	13.33	66.67
18	3	10.00	76.67
19	2	6.67	83.33
20	1	3.33	86.67
22	3	10.00	96.67
23	1	3.33	100.00
Total	**30**	**100.00**	

The disruptive statistics in the above table shows that FRA has the median is 16, which shows a moderate spread around the central value. The mean of 15 is close to the median, implying a fairly symmetric distribution. The standard deviation of 3.97 reflects a moderate amount of variability in the responses. The skewness is -0.07, indicating a near-perfect symmetric distribution. The kurtosis value of 2.32 suggests a distribution that is slightly flatter than normal but close to a normal distribution curve. On the other hand, FRD has a median of 14, indicating a moderately concentrated distribution in the middle 50% of the data. The mean is 15.03, which is very close to the median, pointing to a symmetric distribution. The standard deviation of 3.85 suggests moderate variability in the data. The skewness of 0.88 indicates a more pronounced positive skew, suggesting that more respondents rated lower on the variable, with fewer higher values. The kurtosis of 2.96 is close to 3, indicating that the distribution is nearly normal with a slightly higher peak. The findings imply that enhancing forensic risk assessment procedures could further strengthen fraud detection capabilities, aligning with prior research that highlights the critical role of forensic accounting in fraud risk mitigation.

Table 3: Frequency Distribution for TFRA-IV2 The frequency distribution for TFRA-IV2 (Table 3) shows a similar central tendency, with the most common scores between 12 and 17. A relatively high proportion of respondents (23.33%) rated this variable at 12, while few respondents rated it at the extremes (8 or 22). This distribution pattern indicates that most respondents have moderate perceptions of fraud detection within their firms. Although some respondents provided lower ratings, the overall trend suggests that most participants rated the effectiveness of fraud detection positively. These findings emphasize the need for more forensic accounting services to improve fraud detection mechanism. Previous research has established that stronger forensic

accounting practice significantly reduces fraud prevalences, supporting the call for more regulatory enforcement.

Correlation Analysis

The correlation matrix presented in table 4 present the strength and direction of relationship between the forensic risk assessment and fraud detection.

Table 4: Spearman's Rank Correlation Matrix

	FRA	FRD
FRA	1.0000	0.7432
FRD	0.7432	1.0000

NB: FRA: Forensic Risk Assessment and FRD: Fraud Detection

The Spearman's Rank Correlation Matrix of (0.5649) FRA shows a strong correlation with FRD (0.7432), underlining the critical role that forensic risk assessment plays in the detection of fraud. Effective risk assessment practices are strongly associated with higher fraud detection rates, indicating that identifying and assessing risks is key to preventing and detecting fraudulent activities within firms. This finding aligns with prior studies that emphasize the role of forensic accounting techniques in uncovering fraudulent activities. Recent research highlights that forensic risk assessment enhances transparency and mitigates fraudulent practices within organizations. The positive correlation suggests that firms investing in forensic risk assessment mechanisms are more likely to improve fraud detection efficiency. The implications of this result include the need for organizations to integrate forensic accounting techniques into their risk management frameworks to strengthen fraud detection mechanisms.

Inferential Statistics

Ordinal logistic regression analysis was conducted to evaluate the relationship between forensic accounting services (represented by the forensic risk assessment (FRA) and fraud detection (FRD). The results of this analysis are presented in Table 5.

Table 5: Ordinal Logistic Regression Results for Fraud Detection (FRD)

	Coef	St. Err.	t-value	p-value	95%Conf	Interval	Sig
FRA	0.520	0.166	3.130	0.002	0.194	0.845	***
FRD	0.263	0.183	1.440	0.151	-0.960	0.622	
FRA**FRD	0.520	0.166	3.130	0.002	0.194	0.845	***

Mean Dependent var	15.033	SD dependent var	3.855
Pseudo r-squared	0.356	Number of obs	30
Chi-square	46.929	Prob > chi^2	0.000
Akaike crit. (AIC)	113.033	Bayesian crit. (BIC)	132.650

*** p<.01, ** p<.05

The model produced a mean dependent variable of 15.033, a chi-square statistic of 46.93 with a p-value of 0.000, indicating that the model is statistically significant overall. The Pseudo R-squared value is 0.356, suggesting that the independent variables explain approximately 35.6% of the variance in the dependent variable.

The result from table 5 indicated that forensic risk assessment (FRA) has a stronger effect, with a coefficient of 0.52 (p=0.002). This suggests that higher levels of these forensic services positively influence the detection of fraud. The pseudo-R-squared (0.356) indicates a moderate explanatory power, while the momentous chisquare value (p < 0.001) justifies the model's overall fit. This finding emphasizes the necessity of integrating forensic accounting services into risk management frameworks to strengthen internal control and good corporate governance in listed firms. The implications align with prior research emphasizing the collaboration between forensic accounting risk assessment and fraud detection in corporate organization.

Multicollinearity Check

Multicollinearity is a situation where independent variable in regression model are highly correlated resulting to unreliable estimate of regression coefficient.

Table 6: Variance Inflation Factor (VIF)

Variable	VIF	1/VIF
FRD	3.16	0.316235
FRA	2.37	0.422226
Mean **VIF**	2.24	-

NB: FRA: Forensic Risk Assessment FRD: Fraud Detection

The results of the VIF test as presented in Table 6, show that multicollinearity is not a major concern, since none of these values approach the generally accepted threshold of 10, the model's coefficients can be considered stable and interpretable without the need for corrective measures like variable removal or transformation. The result further indicating that multicollinearity is not problematic in this case. The VIF value for TFRA is 2.37, with a mean VIF of 2.24. The VIF result concluded that the multicollinearity among the independent variables in the regression model is at an acceptable level, ensuring the robustness of the regression estimates.

Table 7: Principal Components Analysis Result for Forensic Risk Assessment

Component	Eigenvalue	Difference	Proportion	Cumulative	FRA	FRD	FRA*FRD
FRA	2.5686	1.7472	0.6422	0.6422	0.5021	0.5601	0.4014
FRD	0.8213	0.4154	0.2053	0.8475	-0.5196	-0.2960	0.7689
FRA*FRD	0.4059	0.2019	0.1015	0.9490	0.4054	-0.0050	0.4976

NB: FRA = Forensic Risk Assessment and **FRD** = Fraud Detection

The high variance explained by these components underscores the practical significance of FRA, as they effectively capture the core dimensions of forensic accounting services in influencing fraud detection. This high explanatory power strengthens the findings by demonstrating that the variables sufficiently encapsulate the critical aspects of the study context, providing a robust analytical framework. FRA, represented by their respective eigenvalues, provide insights into the distribution of variance across the variables. The displayed of strong loadings for FRA, indicate that FRA exert the most significant influence on fraud detection. This is in consistent with prior study by Ozili (2022) that advocate for an integrated forensic approach to mitigate fraud.

Summary of the Study

Introduction: the study reviewed the growing number of corporate frauds in listed firms in Nigeria and highlighted the need for strong forensic risk assessment measures.

Literature Review: the study reviewed the existing studies and theories in forensic accounting and fraud detection among listed firms.

Methodology: This study adopted survey research to obtain quantitative data that may be statistically in examining the relationship between forensic risk assessment and fraud detection in Nigerian listed companies. **Findings:** Forensic risk assessment significantly enhances fraud detection.

Discussion: the study result is compared with prior studies in forensic accounting, reinforcing the strong need for adoption of mandatory forensic risk assessment by listed firms and other regulatory bodies.

Recommendations: The study suggests mandatory regulatory adoption of FRA, regulatory enforcement and routine capacity building to enhance forensic risk assessment efficiency.

CONCLUSION

This study concludes that forensic risk assessments significantly enhance fraud detection in the Nigeria listed firms. However, the study suggests mandatory regulatory adoption of advanced forensic risk assessment techniques, statutory enforcement and routine capacity building to enhance forensic risk assessment efficiency.

RECOMMENDATIONS

The following recommendations are made

i. Firms should adopt proactive forensic risk assessment practice to enhance internal control system.

ii. Regulatory bodies should enforce mandatory adoption of forensic risk assessment practice into their routine financial management practice to uncover fraudulent act.

iii. Government and introduce legal framework on forensic risk assessment report in management report to guide firms in expanded fraud prevention strategy

Suggestion for Further Studies

The study further suggested that:

i. Future research might evaluate various regulatory and anti-graft agencies and examine industryspecific risk assessment tools

ii. Examine the effectiveness of forensic accounting services in fraud prevention across various sectors. iii. Examine the effect of regulatory compliance and fraud prevention in corporate entities

Limitation of the Study

Regulatory constrain, data availability and Over reliance on self-reported data may potentially lead to bias and affect generalisation. The study further identified in-adequate direct access to sensitive financial fraud record which may also affect research finding.

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